Government of Canada | Gouvernement du Canada

connecting canadians

Winter 2001

SchoolNet

MAGAZINE

Making a Difference with ICT

Featuring...

- Taking a Community Approach to Learning
- Finding the Right Fit for Computers at Your School
- GrassRoots Projects: A Guide for Newcomers

1755536

Canada

It's Here!

SchoolNet MAGAZINE

Making a Difference with ICT

Canada's SchoolNet is proud to introduce the new *SchoolNet Magazine*. This great Canadian resource, which is also available online at **www.schoolnet.ca/magazine**, is designed to help teachers integrate the Internet into classroom teaching.

Filled with articles showcasing best practices and innovative uses of information and communications technology (ICT) for learning, the new *SchoolNet Magazine* will help you start and complete exciting, creative and collaborative Internet-based classroom projects.

To complement the feature articles, you will now find in each issue new and interesting pieces in five distinct sections linked directly to SchoolNet objectives:

The Net and Beyond *for Connectivity*
Handy-Dandy Canadian Resources *for Content*
The Learning Curve *for Professional Development*
Outside the Box *for Innovation and Research*
Look Before You Leap *for Social Issues*

We designed the new *SchoolNet Magazine* to fit your needs. We considered your comments and suggestions, received from the recent SchoolNet Magazine Evaluation, and incorporated them into this customized teaching tool. We hope you enjoy it!

We appreciate your feedback. Call 1 800 575-9200, fax (613) 941-1296 or e-mail **schoolnet@ic.gc.ca** to let us know what you think of the new *SchoolNet Magazine*.

See *SchoolNet Magazine's* online version at **www.schoolnet.ca/magazine**

SchoolNet MAGAZINE Winter 2001

Features

Cover photo by David Trattles

Editor's Note

Welcome to the new *SchoolNet Magazine*! Thank you for your many suggestions on how we can better meet your evolving needs and interests in implementing information and communications technology (ICT) in down-to-earth, practical ways.

To begin, our articles cover a broader range than before. In this issue, we feature stories about building a collaborative knowledge-based learning environment, about how Canadian schools view computer labs and their alternatives, about professional development and about the hands-on excitement of creating and running a GrassRoots project from start to finish.

In addition, there are articles looking at key issues related to ICT in education. For our inaugural "Handy-Dandy Canadian Resources" feature, we review a program that teaches history by making it. In other sections, we look at Internet safety, SchoolNet's online forums, and some cutting-edge teaching tools.

SchoolNet Magazine, by the way, is now in its sixth year. That's a long time in Internet years! In fact, when the magazine began, the Web was barely born, unwieldy information retrieval tools such as Archie and Veronica were all there were, besides text-based gophers and news groups. There certainly was no such thing as a browser, and not that many people saw the potential of ICT in education.

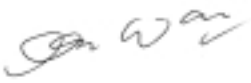
Back then, would we have grasped the power of ICT to liberate the learner? Not only does new technology eliminate isolation from knowledge resources, but it makes it easier to customize schooling to meet the needs of the individual learner.

I'm a bit too young to remember the sound, but my elders used to talk of the old days when schooling was so lock-step that you could hear everyone simultaneously turning their identical textbooks to the identical next page. Now it's normal to want to build the best learning environments for our students. Access to ICT tools is enabling educators to do so. Access through ICT networks has empowered educators to share concerns and best practices in their ongoing quest for ever-better ways to help students learn.

In the early days of integrating ICT, people worried that technology would take over education, replacing values, heritage and the curriculum with a shallow preoccupation with the latest in gadgets and trends.

What I have observed is happening instead is that more and more schools and educators are growing used to thinking of ICT as a set of ever-improving tools to help them educate students. As well, an important side effect of the flood of information and resources has given teachers an opportunity to develop students' critical skills in assessing information. Those skills weren't thought to be essential in the not-so-distant past, when whatever the textbook or the encyclopedia said was accepted without question.

It's an exciting time we're part of!



Doug Walker
Editor
walker.doug@ic.gc.ca

SchoolNet MAGAZINE

PUBLISHER
Industry Canada/Canada's SchoolNet

EDITOR
Doug Walker

EDITING
Whitehall Associates

EDITORIAL COMMITTEE
Beth Clarke, Natacha Audet, Lyne Martin, Nasreen Gulamhusein

CONTRIBUTING WRITERS
Sheri Brink, Nathalie Clément, Jason Gadoury, Kirstan Gagnon, Isabelle Poitras, Arden Redfern, Angie Rumpf, Tanya Sewell, Denis Tardif, Doug Walker

PROJECT COORDINATOR
Lyne Martin

ART DIRECTOR
Kerry Cavlovic, ACART

PRODUCTION
Sarah Deschamps, ACART

SchoolNet Magazine is a cost sharing publication. If your company is interested in participating, please contact Carolyn Lamothe at (613) 998-9881 or e-mail: **lamothe.carolyn@ic.gc.ca**.

ISSN: 1206-0062
For more information, please contact SchoolNet at 1 800 575-9200, by fax at (613) 941-1296 or by e-mail at **schoolnet@ic.gc.ca**, or visit the Web site **www.schoolnet.ca** and **www.schoolnet.ca/magazine**.

PRINTED IN CANADA / IMPRIMÉ AU CANADA

Recyclable

1755536

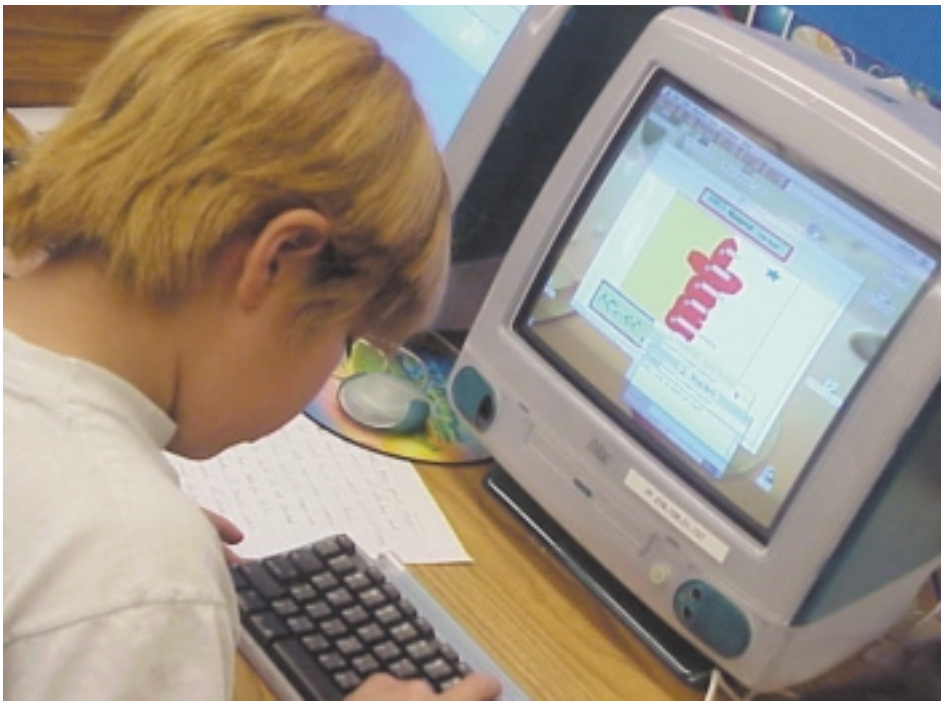
by Angie Rumpf

Taking a Community Approach to Learning

Teachers using a unique technology are introducing students to a new way of learning, and producing some noteworthy results.

The technology is software called Knowledge Forum. Developed at the Ontario Institute for Studies in Education of the University of Toronto (OISE/UT), it provides a structured online environment, called Computer Supported Intentional Learning Environments (CSILE, pronounced see-sill). Through a Knowledge Forum database, teachers, students and experts can interact and become a community of learners. The software also teaches students to think about thinking. Knowledge Forum is modelled after the knowledge-building strategies of learned disciplines and the applied sciences.

Evaluations conducted by the Tele-Learning Network of Centres of Excellence (NCE) elementary team have shown significant advantages for Knowledge Forum classrooms. Students who use the software demonstrate increased depth of understanding and vocabulary, achieve higher test scores in reading comprehension, and possess superior math problem-solving skills.



A student from Joamie School in Iqualuit contributing to the Knowledge Forum database.

JOAMIE SCHOOL

Take the students at Joamie School in Iqaluit, Nunavut, the community where Knowledge Forum and CSILE were introduced in 1992. Despite the various linguistic, cultural and socioeconomic challenges they face, Joamie students continue to shatter stereotypes and thrive in a collaborative, knowledge-building environment.

Among the notable chapters in Joamie Elementary's recent history is a joint project on space exploration the grade 5 and 6 students did through CSILE and Knowledge Forum with a class from Harry Camsell School in Hay River, Northwest Territories. Launched with an activity-based videoconference involving the Canadian Space Agency, the project encouraged students to explore areas of individual interest and post their questions, ideas, notes and findings on a Knowledge Forum database. Classmates from both schools were encouraged to visit one another's topics regularly and all were invited to share insights, information, experiences and ideas from start to finish. In addition to ongoing interaction among the students, experts from the Canadian Space Agency and a Hay River astronomer logged into the joint database to serve as mentors.

LEVELLING THE PLAYING FIELD

According to Sandy McAuley, Knowledge Forum telementor for the project, there was some initial concern about how well the Joamie students, all of whom speak Inuktitut as their first language, would do on Knowledge Forum. "Some say that Knowledge Forum and the community learning approach are only good for kids with strong English skills, students who are older and already motivated,"

McAuley explains. "But Joamie School shattered these stereotypes."

Joamie teacher Elizabeth Tumblin says the CSILE program and Knowledge Forum create a level playing field on which every student has a chance to be good at something, be it graphics, research or writing.

During the space project with Hay River, the Joamie students' confidence in manipulating the software allowed them to overcome the language gap. Using a combination of text and graphics, the students used Knowledge Forum as a means of highlighting their unique cultural perspective and access to information, things very much valued by their Hay River counterparts.

"The kids were thrilled, not intimidated," explains Tumblin. "People thousands of kilometres away wanted to hear their ideas. It boosted the confidence of even the most self-conscious kids."

As well, in both McAuley's and Tumblin's experience, students other than the top academic performers shine in the CSILE environment. It offers students a safe space in which to share their thoughts. Surprisingly often, it's the kids who usually don't say much, who aren't considered smart kids, who ask the question that makes everyone sit up and take notice.

ADAPTING THE CURRICULUM

Tumblin says confidence fosters the development of critical thinking, literacy and computer skills. The beauty of Knowledge Forum, explains Tumblin, is that users can tailor it to suit their needs, interests and preferences. "We started with a unit outlined in the curriculum, then built content at a level that coincided with life in a specific area, such as Iqaluit," notes Tumblin. "The kids were comfortable with that. They related to that."

So, after a preliminary introduction, students were given an enormous amount of choice and responsibility in following up on individual topics of interest, which included everything from Inuit myths surrounding constellations to satellites to bodily functions in outer space.

And interest, says McAuley, equals motivation. When later asked by the TeleLearning NCE and OISE/UT researchers why they studied a particular topic, he says, students invariably replied, "because I was interested in it," never "because teacher said so."

And although students do in-depth projects through Knowledge Forum, McAuley says the breadth of the curriculum is never compromised. He recalls a teacher in Toronto who allowed students to work on detailed projects, then entered curriculum objectives into the Knowledge Forum database and asked whether they'd been covered. After careful analysis and evaluation, the students concluded that they had met requirements. They then suggested three areas they had explored that curriculum developers had overlooked.

Reading computerbuddies — Joamie Elementary School in Iqaluit.

THINKING ABOUT THINKING

Critical thinking is the cornerstone of the knowledge-building environment. One of the key benefits of Knowledge Forum's design, says McAuley, is that it puts the project, the larger issues and the problem on the same footing. It forces students to evaluate their hypotheses and employ the scientific method in structuring their projects. They become far more skilled in asking questions, retrieving information, working as a group, organizing themselves and moving ahead.

Tumblin supports her colleague's theory with an anecdote: toward the end of her first year working at Joamie, she left to attend a conference. Upon her return 10 days later, she was "blown away" by her students' progress. Not only had the class kept up with material in her absence, they'd actually moved ahead on to new things.

That's because Knowledge Forum is integral to collaborative learning, and available for use in virtually every activity or subject. "In 20 years of teaching, it's the most exciting thing I've ever found and used across the board," raves Tumblin.

MAKING IT WORK FOR YOU

"Knowledge Forum can't just be taught 40 minutes a day, as an aside," McAuley adds. In the most successful CSILE classrooms, he stresses, the software program is combined with individual and small group work, activity centres, and co-operative, active and hands-on learning.

Prior to the initiation of the project, McAuley and Tumblin worked to ensure that students and staff would be skilled in using Knowledge Forum. McAuley volunteered his expertise and telementoring services from his Prince Edward Island office, while Tumblin met after school once every two weeks with fellow teachers for staff development and theory. Professional development days and relief time were also allocated to Knowledge Forum.

Reading computerbuddies — Joamie Elementary School in Iqaluit.

An Office Learning Technology grant allowed the Joamie teachers to work on the program for an additional half-hour every couple of weeks. In each session, the group selected a different component of the program, for which they brainstormed and practised ideas for in-class use. Once trained, teacher experts transferred their skills to one member of each student work group in their class. The newly trained student experts, in turn, trained their classmates. Entire classes trained the grades below them, and so on and so forth, until most students could demonstrate some expertise with Knowledge Forum.

When necessary, students taught teachers the nuances of Knowledge Forum. Tumblin recalls one instance in which two particularly shy girls in her class helped her to create beautiful graphics for the Marine Environment portion of Knowledge Forum. "They said, Don't worry, Elizabeth, we'll help you'," she laughs. "They understood what many of my students do: that they're better at graphics than I'll ever be."

Collective and intentional learning programs are successful, McAuley insists, when teachers learn to give up control and still provide students with strategies for learning. Teachers must be able to admit when they don't have an answer to a question, he says. They must be willing to become an expert learner in a joint learning enterprise.

AN INVESTMENT IN LEARNING

In the end, students emerge from CSILE programs and time spent using Knowledge Forum knowing how to learn, understanding what strong questions look like and knowing how to work both individually and in groups. "Kids in this situation really have a sense of their own worth and value," McAuley insists. "Instead of dropping out or going through the motions, they become lifelong learners."

For more information, go to the CSILE Web site (**http://csile.oise.utoronto.ca/**) or to the Knowledge Forum (**www.learn.motion.com/lim/kf/KFO.html**).

Angie Rumpf is a freelance journalist on special assignment with Canada's SchoolNet.

GETTING FIRST NATIONS COMMUNITIES CONNECTED

As part of the federal government's connectivity strategy, Industry Canada is encouraging First Nations communities that do not have schools to connect to the Internet. First Nations communities can apply for $5,000 in funding to set up a connection that will provide public access to the Internet.

The program is specifically intended to help those communities that do not have access to public connections through other federal initiatives. As such, communities with schools or an existing Community Access Program site are not eligible for this initiative.

To apply, please contact the First Nations SchoolNet regional help desk nearest you (listed below). Please note that applications must come from a band council or an equivalent legally constituted organization. Individuals cannot apply on behalf of their community.

Maritimes
Lauretta Welsh
(902) 567-0336

Quebec
Tim Whiteduck or Kevin Brascoupe
1 800 263-1798

Southern Ontario
Percy Barnaby
(613) 837-0926

Northern Ontario
Brian Beaton or Dan Pellerin
(807) 737-1135

Manitoba
Wayne Cote or Melissa Wastasecoot
(204) 988-9400

Saskatchewan
Jason Carter or Carey Pillar
(306) 956-6928

Alberta
Bruce N. Burman
(403) 251-9594

British Columbia
Ian Cameron
(250) 377-8587

Finding the RIGHT FIT for Computers AT YOUR SCHOOL

by Sheri Brink

As one educator put it, "Should schools have computers in labs or in classrooms?" To shed some light on which model works best where, and why, *SchoolNet Magazine* surveyed several members of SchoolNet's Network of Innovative Schools (NIS).

COMPUTERS IN CLASSROOMS?

Placing computers in classrooms is effective in many schools, allowing technology to be more closely and seamlessly integrated into the curriculum.

Montague Intermediate, an NIS 2000 member school in P.E.I., for example, is bringing networked computers into all its classrooms after field testing a networked computer in one homeroom class. "I found that [having a computer in my classroom] was very beneficial in my attempt to integrate technology into the curriculum. Using a projector, we were able to look up Web sites that were pertinent to what we were working on and everyone could follow along. It's a natural extension to learning," says teacher Charlotte Bryand. Students have the opportunity to search online for Web sites during a lesson to find supplementary information on the concept being taught. The school's lab, in turn, is now a resource centre that any class can book at any time. This allows for flexibility in class and project work. It also prepares colleagues to bring technology into their classrooms, helping them overcome any fear of the equipment.

At Banded Peak, an NIS pioneer school in Bragg Creek, Alberta, students in grades 6 and 7 have access to 30 computers in their classroom, which are set up in pods of 10, making it easy for students to learn from each other and from their teachers. Students can practise using technology every day, while easy access allows them to work on projects at any time.

COMPUTERS IN LABS?

Placing computers in labs is another popular way to provide students with equitable access to technology and the information highway. Several NIS schools have found this model to be effective. The challenge for these schools, as in many others, is integrating the technology into the everyday curriculum. Working in a lab with a technician provides learning opportunities for the staff that would not be available in the classroom and contributes to their professional development.

At R.B. Russell, a 1999 NIS member school in Winnipeg, "lab as resource centre" is the working model. The centres can be booked by teachers for student work. But before the work begins, the technology resource teacher meets with the teacher and students to collaborate and create projects, assignments and assessment practices. This resource is available to all classes — even the autobody shop makes frequent use of it, teaching curriculum that requires very technical language skills.

Since many students struggle with low reading and writing skills at R.B. Russell, the technology resource teacher offers basic literacy activities that provide the language skills students need to create content in multimedia format, such as videos and Web sites. Not only do students learn the content, but staff and students also learn how to use cutting-edge technology that demonstrates their skills.

This model ensures that both staff and students are immersed in technology, learning information and communications technology (ICT) skills from an on-site expert. While the school focusses on technology learning in the labs, computers appear in every learning area of the school — in classrooms and in workshops. "Our system is one of empowerment — computers are available to all and a high level of support and skill transference occurs. Putting human and technical resources at the centre of things has resulted in the embedding of ICT integration across the curriculum at R.B. Russell," explains Jay Willman, technology resource teacher.

Schools in Canada's North are also focussing on computers in labs. Harry Camsell Elementary School, a 2000 NIS member school in the Northwest Territories, provides an equitable student-to-computer ratio in its lab, with enough computers to accommodate any class size. Each classroom is equipped with one computer; however, the lab provides a more structured learning environment with one-on-one opportunities for each student on a computer. Many students at Harry Camsell do not have access to computers at home, but they share the excitement of working on computers every day with their families. "Parents often gravitate toward the lab to look at their child's work," says teacher Tyler Hawkins. "They've also approached me about buying a home computer as a result of the interest their children have expressed."

A COMPOSITE MODEL?

While many schools have implemented the computer lab and classroom models, some schools find neither effective. This has led them to develop new

models that strategically combine elements of both.

Crescent Heights High School, a 1999 NIS member school in Calgary, did not find immediate success with its computer labs, called Learning Centres. Although the centres were designed based on consultation with staff and pedagogical research, teachers did not use them often and lacked the ICT skills to fully integrate them into classroom activity. As a result, computers became merely peripheral accessories to student learning.

Today, Crescent Heights has its own local area network and server with network connections in classrooms and curriculum offices. Mobile laptop computers and projectors can be connected to the same network as those located in the school's six computer labs. This gives the teachers the flexibility to either use the lab or to bring a computer to their classroom. In addition, WebCT software enables students to log onto the school network over the Web and learn individually online.

The changes made at Crescent Heights are enabling teachers to seamlessly integrate ICT across the curriculum, no matter where the students are. "ICT hardware needs are fluid and require more attention and planning to meet the ever increasing demands of developing ICT pedagogy," says teacher Jurgen Bahr.

These demands will continue to challenge the way schools use technology. But it will also bring about creativity and innovation as each school adapts and modifies the model that best meets the needs of its school community.

To find out more about the schools featured in this article and about the SchoolNet Network of Innovative Schools, go to the NIS Web site (**www.schoolnet.ca/nis-rei**).

Sheri Brink is a Communications Officer with the SchoolNet Network of Innovative Schools.

Canada's Information Technology Week

A Celebration of Canadian Skills and Achievements

Celebrate Canada's first Information Technology (IT) Week at your school or in your community, May 4 to 13, 2001.

The 10-day event, sponsored by Industry Canada and the Information Technology Association of Canada, will showcase community, industry, education and government achievements in the area of information technology. The activities during the week will help forge and celebrate partnerships and highlight the benefits of developing the critical skills Canadians need to succeed in the new economy.

The possibilities for activities and events are endless. Canada's IT Week can be a platform to showcase and recognize achievements in information technology. You could organize an IT exhibit for the whole community to enjoy, set up a special award to recognize IT achievements at school, or work with organizations in your area to create innovative IT projects.

Visit Canada's IT Week Web site at **http://itweek.gc.ca**. There, you will find an event registry form and national calendar of events, links to success stories, achievements and statistics, a database of IT speakers for event organizers, sample promotional material and more.

Help us spread the word about Canada's IT Week in your school or community. Brochures and posters are available in limited quantities. Send us an e-mail at **week.semaine@ic.gc.ca** or call 1 800 575-9200 for more information!

GrassRoots Projects:
A Guide for Newcomers

by Isabelle Poitras

A year ago, Daryll Mossman, a physics teacher at Prince Andrew High School in Nova Scotia, never imagined he would be working with his advanced grade 11 physics students to create a GrassRoots project highlighting the personal biographies, technical innovations and scientific discoveries of famous scientists.

"I had very limited knowledge of the Internet," says Mossman. "In fact I was worried that my lack of expertise with technology might be a problem; however, there were students in my class who could share their expertise and I probably learned as much as my students did."

Once Mossman filled out the online application, his grade 11 physics class spent four to five full classes from April to June completing their famous scientist project. Mossman created a template to guide his students who then searched the Web to find information on their favourite scientists, learning more about their lives, the history and process of science, while at the same time learning about current technologies and how to write for the Web.

Once Mossman's students gathered all of the information they needed on each of their favourite scientists, it was then time to create a Web page. In this case, another group of 20 students guided by Brad Watt, a teacher at Prince Andrew, as well as by David Luong and Brad Miller, two grade 11 students, created all of the HTML and graphics for the page.

According to Watt, one of the most important things to do when starting a GrassRoots project is to find time to meet and coordinate everyone to keep the effort going. "Several people needed to be assigned different tasks," says Watt. "The goal is to try to maximize what they could do best to keep the team moving and to select a Web master that had time to keep it updated."

Working with 20 students to create a Web page is harder than having just two people doing it because you have to keep track of everything and no one has the same knowledge or skills. But, according to Watt, it's important to let the students do the work.

"You really want to spend a lot of time organizing the students so that they have an opportunity to lead and take charge of what is going on and what is put into the project," says Watt. "At times I felt that I could sit down and do the page myself, but that's not what it's about. It's really about having the students do the work and gain knowledge. As teachers, our job is to spend time organizing and coming up with some sort of structure to manage the projects with the students involved in every step. Staff members are advisors only. There are many opportunities for students with different interests to get involved. Let them do it and learn from it," concludes Watt.

For Brad Miller, one of the two students in charge of the project, it's all about collaborative learning. "Overall you learn a lot from working with computers, like HTML and Flash, but we also learned things on the scientists so it had another educational aspect to it. Organizing is another big thing we learned. We were in charge of managing all of the HTML. We created templates for other less experienced students to fill out. Those students that knew more helped all of the other students — it was a great learning experience for everyone."

Prince Andrew High School has come a long way from creating its first GrassRoots projects. After realizing how easy it was to do, many other teachers at the high school have taken the same initiative. Mossman had no knowledge of information and communications technology, but by working with his students and with other resources in the school, his class created a worthwhile project, which is being used by students from all grade levels.

In addition, the money the school received was used to create a new teaching environment for physics classes. "We spent the $600 GrassRoots gave us on a large screen TV for the physics class," says Mossman. "We also got some hardware that allows us to hook up a computer to it. This way we can visit Web sites in class and do experiments and so on and the whole class can see it. We wouldn't have been able to do this without funding from GrassRoots."

For more information on how you and your school can create a GrassRoots project, visit the GrassRoots site (**www.schoolnet.ca/grassroots**).

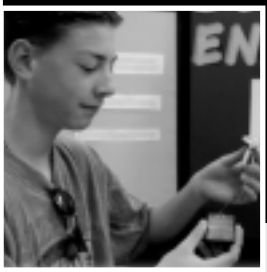
Isabelle Poitras studies public relations at Mount Saint Vincent University in Halifax. She is on special assignment with Canada's SchoolNet.

SchoolNet's GrassRoots program

Since 1996, the SchoolNet GrassRoots Program has helped Canadian schools create more than 10,000 online learning projects involving more than 2.5 million students. GrassRoots encourages young people to develop academic, employability and computer skills by working on projects that combine information and communications technology and the curriculum.

GrassRoots provides $600 funding for Web sites or individual projects teachers and students design and implement. Schools can also receive $5,000 for blocks of collaborative projects, which are usually developed around a theme, unit of work or subject area, and involve several teachers and classes in one or more schools and in one or more school boards.

For anyone with little or no experience with technology, the idea of participating in a GrassRoots project may be intimidating, but really it's easy. GrassRoots has a resource section on its Web site (**www.schoolnet.ca/grassroots**) for designing and running Internet projects that provides all the information a teacher needs to know to get started — from project planning tips to completing the project report.



YES I CAN! Learn Science!

Science and technology go hand in hand and the YES I CAN! Science project is bringing them to the tip of your finger. At the click of a mouse, educators can access a database of scientific resources with easy-to-use, easy-to-understand demonstrations and explanations.

YES I CAN! Science was developed by York University in partnership with Industry Canada's SchoolNet to provide scientific resources to Canadian educators. The goal of the project is to equip teachers with knowledge and material to teach science in a way that will engage students' interest and increase their understanding of fundamental scientific and technological principles.

The project began in 1997 with corporations and educational institutions contributing resources, such as lesson plans, lab demonstrations, classroom activities, assessment tools and performance indicators to a database. Currently, there are nearly 6,000 entries in the database and York University continues to gather more. The database is fully searchable, allowing keyword searches within a specific grade and subject area. Teachers across Canada can align these resources with their local or regional curricula. YES I CAN! emphasizes the study of science as part of a lifelong learning process, particularly among girls and young women.

Bring the excitement back to your science class by visiting **www.yesican.yorku.ca**. You will find a multitude of resources to motivate your students to explore the world of science.

WHAT'S AVAILABLE FROM YES I CAN! SCIENCE?

- **Lesson plans** provide teachers with ideas on how to teach a particular science concept.
- **Labs, demos and classroom activities** allow students to get hands-on experience, and are included in many of the lesson plans.
- **Assessment tools**, or tests, allow teachers to measure student progress.
- **Performance indicators** are based on the *Canadian Common Framework of Science Learning Outcomes* and have been approved by the Council of Ministers of Education, Canada.
- **Background resources**, written for college students or university undergraduates, give teachers relevant background material beyond that which is required to teach a lesson. These resources allow teachers to enhance their delivery and interpretation of science lessons.

Canada's SchoolNet
GRASSROOTS PROGRAM

Interactive Learning Projects for the Internet

contact us | about us | site map | français

Link your school to the world using our interactive network of Canadian schools connected to the Internet!

(Quick Search) GO

Home | Project Centre | Schools OnLine | Program Partners | Program Sponsors | Teacher ToolKit | Theme Projects

GRASSROOTS
Canadian Schools
OnLine Directory

LINK YOUR SCHOOL TO THE WORLD!
(Click on a province or territory to see a list of connected schools.)

Register or Update your Info

and you could be chosen as Connected School of the Week

Welcome to GrassRoots' Canadian Schools OnLine Directory, an interactive directory of Canadian schools connected to the Internet.

Schools OnLine is a unique network that provides educators with the school contacts they need to run successful, collaborative, Internet-based classroom projects.

The SchoolNet GrassRoots Program encourages Canadian youth to develop academic employability and computer skills by integrating information and communications technology into learning.

CHECK OUT www.schoolnet.ca/grassroots

connecting.canadians
un canada branché

Canada's SchoolNet

for a look at the many resources on the GrassRoots Web site

Around the World with Education

by Arden Redfern

Imagine an educational environment where students ages 5 to 17 can communicate with children from more than 182 countries without language barriers.

ePALS Classroom Exchange (**www.epals.com**) makes this dream a reality. It began as a vision in 1996 when the creators developed a safe and friendly online learning community to connect just 10 classrooms. Four years later, 2.6 million students and teachers are online with ePALS and experiencing a whole new kind of pen pal relationship.

Perhaps the most exciting thing about the ePALS experience is the opportunity for Canadian students to communicate with children from around the world. ePALS is accessible in English, French, Spanish, German and Portuguese, and has also integrated a 15-language-pair instant translation service into its Web-based e-mail and discussion boards.

COLLABORATIVE PROJECTS AT ePALS

The success of ePALS is based on the communication tools it provides to empower and support students and teachers. In addition, ePALS' education material developers have responded to the demand by teachers for collaborative projects and ideas that integrate ePALS into their curriculum.

The Digital Divide Project, for example, is an online collaborative project in which students worldwide explore and share their ideas of what the term "digital divide" means to them. Students take the role of youth media reporters and work with their partner class to create a 20- to 35-word Digital Divide Declaration and share it with the ePALS community.

During Netd@ys Europe in November, ePALS enabled children, students and teachers from around the world to submit questions to a Canadian expert on a range of subjects related to education and training for improving digital literacy. In partnership with Industry Canada and Canada's SchoolNet, ePALS provided access to experts in technology, digital design, pedagogy, integrating technology into learning and literacy. For more, see page 18.

Interested teachers can register online at **www.epals.com**. The Web site also offers online support for newcomers.

The teacher- and parent-monitored features available include instant language translation, free Web-based e-mail, world news, maps and weather, private chat rooms and moderated discussion boards. The site's developers are looking at adding such features as video conferencing and real-time messaging.

Arden Redfern is Media Relations Manager for ePALS Classroom Exchange.

by Jason Gadoury

SchoolNet and the Canadian Space Agency Help You GET INTO SPACE!

Marc Garneau

A new millennium is upon us. Big ideas are in vogue again, such as globalization, world peace and the environment. Progress in science and technology and, in particular, space science is remarkable, with the International Space Station (ISS) under construction and the possibility of permanent human installations on the moon and visits to Mars within a few generations.

While many countries work together to brave new space frontiers, organizations all over Canada are joining up to bring all the excitement of space science to Canadian young people. SchoolNet works with provincial and federal government organizations, education and library associations, the private sector and First Nations communities to bring teachers and students a world of pedagogical resources and multimedia learning opportunities.

In 2000, SchoolNet established an official partnership with the Canadian Space Agency (CSA) to bring educational, on-demand multimedia Web content to connected schools across the country. The online presence for the partnership is SchoolNet and The CSA's SPACE at **www.schoolnet.ca/space**. This site invites students to participate in educational space events and to access live and archived educational webcasts hosted by Canadian astronauts and space experts. The site is also a gateway to the great volume of information available to students and teachers on Kidspace, the Canadian Space Agency's learning resources Web site at **www.space.gc.ca/kidspace**.

Drop in to SchoolNet and The CSA's SPACE any time. You and your students can watch a number of webcasts, such one featuring astronaut Chris Hadfield hosting a highly informative lecture about mission STS-97 from the Johnson Space Centre in Houston, Texas. This December 2000 mission saw Marc Garneau, Canada's first man in space, install massive solar panels on the International Space Station from the space shuttle *Endeavour*. Or, capture your students' imagination by watching the webcast of a downlink directly from *Endeavour*, featuring Marc Garneau speaking to young people about space during the mission. Most of the webcasts showcased on the site include questions from students across the country.

Multimedia Web content represents an increasingly viable pedagogical tool. With resources such as quality educational videos online, it becomes easier to spark students' interest in subjects such as space, science, technology and even mathematics. Although young people have always wondered at the marvel of space travel, with the right kind of teacher encouragement and some helpful resources along the way, this curiosity can transform into lifelong goals and ambitions.

Jason Gadoury is a Communications Officer with Canada's SchoolNet.

GENERATIONS CANCONNECT:

From the CLASSROOM into the COMMUNITY

by Kirstan Gagnon

"Mr. Bourgeois was 17 years of age when he enlisted in the Royal Canadian Navy. He made his parents very proud following in the footsteps of his older brother... He recalled that it was a lonesome time in his life, especially when he engaged in his first action in the North Atlantic..."

So begins the story of Mr. Bourgeois, a navy veteran who served in World War II. This profile was written by a student at Bridgeport School in Glace Bay, Nova Scotia, and is one of many stories on the Generations CanConnect (GCC) Web site at **http://generations-canconnect.ic.gc.ca**, an Industry Canada initiative that connects youth and seniors through technology. The site hosts more than 110 projects created by schools and voluntary organizations nationwide. GCC encourages youth to interview seniors and create profiles (stories with images) about their life experiences or on a specific theme. Each completed project comprising a homepage, an introduction and a minimum of 15 profiles receives incentive funding of $300.

Bridgeport School created a theme-based project on World War II. Students in grades 7 to 9 interviewed 25 veterans from various branches of the Royal Canadian Legion and wrote a collection of stories on their experiences encountered during the war using the GCC template. The school recently launched its site, inviting veterans that participated in the project, teachers and members of the school board. According to Reg Johnston, school principal, "GCC was an excellent opportunity to pay tribute to the valiant sacrifices made by these extraordinary men and women. The project unites schools and communities, and allows us to post the results on the Internet for all Canadians to share." At the celebration, one of the veterans said that the GCC program will help educate children about history.

École Pavillon Wilbrod Dufour in Alma, Quebec, is another GCC participant. Martha Richards, English teacher of the school's language and society program, is focussing on themes such as world destinations, treasured objects and important accomplishments in the lives of seniors. As part of her curriculum, students must interact with the community. The program she teaches also gives Francophone students the opportunity to learn advanced English and Spanish while participating in project-based learning.

Richards says that when the seniors came into the school to be interviewed, students taught them basic Spanish vocabulary and gave them a chance to work on the computers. According to Richards, "One senior, age 75, would not even take a coffee break. She was mesmerized by the Internet and was ecstatic to have the opportunity to learn about technology. The project will soon be complete and we are looking forward to celebrating with the seniors and the local media."

Martine Charbonneau, technology teacher at École Séraphin-Marion, in Gloucester, Ontario, launched a GCC site last spring. In her opinion, project-based teaching creates a partnership between the teacher and the students. "Projects like GCC help teachers extend the walls of their classroom into the community. I am glad that my students in the grade 7 enriched program had an amazing chance to learn and record the experiences of older Canadians first-hand." Breakfast was served at the launch and the seniors were given the opportunity to use the Internet to create their own e-mail address to communicate some more with the students.

Older Canadians have important stories to tell. Give your students the chance to engage in an Internet-based intergenerational experience. Generations CanConnect is also an excellent way to participate in the International Year of Volunteers. Get linked to the past through the medium of the future.

To register for a Generations CanConnect project, visit **http://generations-canconnect.ic.gc.ca**. For more information, contact the GCC team by e-mail (**generations.canconnect@ic.gc.ca**) or telephone (1 800 575-9200).

Kirstan Gagnon is the Communications Officer with the Generations CanConnect Program.

INNOVATION

by Denis Tardif

L'Escale High School in Rockland, Ontario, has been part of the SchoolNet Network of Innovative Schools since its introduction two years ago. The Network includes approximately 50 schools in all regions of Canada, including five Francophone schools.

L'Escale became an "innovative school" in response to an invitation extended to all Canadian schools during the Network's first year. We were asked to explain the role of information and communications technology (ICT) in our school environment and its impact on student learning, and to describe the technological integration activities we were planning to undertake. Since L'Escale was regularly using ICT in the classroom, its application was accepted. The school received a grant of $10,000 for the 1999–2000 and 2000–2001 school years to pursue its innovative work.

We have a large number of activities under way at L'Escale. For example, our Web site includes lecture notes as well as complete tutorials for certain computer courses. Online tutorials allow students to take charge of their training. They are able to learn at their own pace and continue their work at home by visiting the Web site.

At L'Escale, we also opted to install a few computers in several classrooms instead of putting them all in a laboratory (see "Finding the Right Fit for Computers at Your School," page 6, for more discussion of this issue). We have also emphasized professional

is ALIVE AND WELL at L'Escale!

development by acquiring some laptops to enable teachers to continue their training at home. In addition, we have hired tutors to provide training for individual teachers and to help them in the classroom during their first attempts to integrate ICT. This training program has proven to be extremely productive.

Our teachers are also encouraged to participate in the SchoolNet GrassRoots Program.

Visit the L'Escale High School Web site (**www.lescale.com**) to learn more.

Denis Tardif teaches computer science and mathematics at L'Escale High School in Rockland, Ontario.

SCHOOLNET NETWORK OF INNOVATIVE SCHOOLS

The principal goal of the SchoolNet Network of Innovative Schools is to create links among Canadian educators who are using information and communications technology (ICT) to foster innovation in education.

Without question, the outstanding aspect of the Network's first two years has been the organization of an annual conference bringing together two representatives from each member school and a representative of their school board. These conferences took place in November 1999 in Montreal and in September 2000 in Ottawa. The discussions and workshops, such as the one led by Alan November in Ottawa, gave participants the opportunity to engage in more in-depth thinking about the role ICT plays in learning in the school. An overview of Network activities reveals that each member school has its specialty and that there is no lack of good ideas!

To learn more about the SchoolNet Network of Innovative Schools, visit the NIS Web site (**www.schoolnet.ca/nis-rei**).

BEST PRACTICES FOR ICT INTEGRATION

Design Your Own Innovation in Co-operative Education

by Sheri Brink

For many people, technology is part of the daily routine. When we have a problem, we turn to technology to fix it.

That's just what a school in rural Manitoba did when it fell short of employers for its co-operative education program. The result was an online co-op placement. This innovation is creating new opportunities for schools in remote areas and opening the door to virtual student employment.

THE IDEA

Crocus Plains Regional Secondary School is located in Brandon, a small city of 40,000 in southwestern Manitoba. This innovative school has been recognized nationally for integrating information and communications technology (ICT) into its curriculum. It comes as no surprise, then, that the teachers turned to technology when faced with a shortage of co-op employers for their senior drafting and design course. "We had thought of doing an online co-op placement before, but never really had the need for it. Technology became the obvious solution when we ran short of placements," says teacher Miro Gawinski.

With this idea in mind, Gawinski approached a Winnipeg-based construction company, A&S Homes, to find out if it would be willing to employ a student at a distance using a computer. The response was positive since company designers always used traditional pencil and paper for all drawings. A&S Homes had considered computerized drawings; hiring a senior drafting and design student gave the company a chance to test it out. While A&S went about its everyday business, the student created samples of computerized three-dimensional drawings of some of A&S's building projects.

Three-dimensional building drafts designed by Matthew Fleming

THE CANDIDATE

The student for the job was Matthew Fleming. Matthew went up against two of his classmates, interviewed for the position and proved himself an independent thinker and worker — the sort of person best suited for working remotely and virtually. His extensive portfolio and determined attitude made him the best candidate for the job. Matthew worked out of office space at the local school division building, making his virtual co-op experience seem more like "going to work." He had access to the Internet, a telephone and a fax machine to communicate with A&S's Winnipeg office. Several of the company's building projects are in Brandon, making weekly visits with his employer possible.

Matthew spent two months developing three-dimensional, animated drawings using drafting technology called AUTOCAD. He took pencil drawings of two structures A&S Homes often builds and produced computerized working drawings, which architects and builders use, and presentation drawings, which A&S shows to prospective customers. Matthew was also able to visit some of the building projects in Brandon.

THE RESULTS

An evaluation of the co-op placement showed that it was a positive experience for everyone involved. It provided Matthew with work experience that will be valuable as he pursues design and drafting at a community college in Winnipeg. As for A&S Homes, Matthew's work has changed the way the company does business. "Technology is required for this industry as we are faced with more sophisticated buyers that want to be able to compare the work of different companies online," says Vince Spezzano, Manager of Residential and Commercial Development. "The work Matthew did for us confirmed that computerized drawings are the way we should go." The company's draftsman is taking ongoing training and has begun creating computerized drawings with drafting software.

THE FUTURE

Crocus Plains Secondary continues to pioneer online co-op placements as an effective solution to the small design industry and lack of placements in Brandon. This technological advance falls directly in line with the school's goal of breaking physical boundaries and making school resources accessible to outlying communities. The model for online co-operative education is adaptable and will broaden opportunities for students in rural or urban areas.

A&S Homes has agreed to hire another student in 2001 and Mr. Gawinski is searching out new distance employers. As technology makes the world a smaller place, perhaps the next employer will be in another province, or even another country.

Crocus Plains Regional Secondary School is a pioneer member of SchoolNet's Network of Innovative Schools. The school was recognized in 1999 for its innovative use of technology across the curriculum. For more information on this project, visit the school's Web site at **www.brandonsd.mb.ca/crocus** or call (204) 729-3900. For more information on SchoolNet's Network of Innovative Schools, visit **www.schoolnet.ca/nis-rei**.

Sheri Brink is a Communications Officer with SchoolNet's Network of Innovative Schools.

Capitalizing on Computers for Schools

Resources for Student Learning

by Tanya Sewell

Computers for Schools is known across Canada for providing good quality, refurbished computers to schools and libraries. Now, schools are capitalizing on the program's success and resources to provide innovative hands-on learning experiences for students.

At Simonds High School in Saint John, New Brunswick, for example, students in a technology support course assembled an entire computer lab for the school in the Computers for Schools workshop on site, one of 10 in the province.

The Saint John Pioneers, a group of telecommunications retirees that works with Computers for Schools, supplied the cables, ends and other equipment for the project. With the help of a local cabling company, Controls and Equipment Ltd., the students planned the job, and installed the equipment. The cabling professionals instructed the students on how to do the work and checked it when they were done. The students also designed the school network, and use the workshop to assemble computers for other schools in the district.

According to technician Scott Moore, "It was a very good hands-on learning experience. From the layout and design of the network to the final testing, it closely approximated a real work experience."

For the students, the project provided an excellent opportunity to sample the working conditions of a network technician. "It was a good learning experience because we got to do the work ourselves. It was good that the Controls and Equipment people were there to check our work afterwards. We really learned a lot from the project and we also got to learn about careers in the industry," says Allan Shepherd, a grade 12 student who worked on the project.

The technology students were not the only winners, as Simonds High received a new lab of Computers for Schools computers. Jill Eckstone, the teacher in charge of the new lab, said, "Our students are thrilled. Now they have easy access to the Internet for research, and the quality of the work that they are able to produce has improved immensely."

Younger students also benefit from Computers for Schools. The free computers are also widely used in elementary classrooms. This helps these students develop an interest in technology, and gives them a head start for becoming involved in projects such as creating refurbished computers or building a network.

To learn more about the Computer for Schools program and how to apply to receive refurbished computers at your school or library go to **www.schoolnet.ca/cfs-ope/**.

To find out more about the Simonds Tech Support Workshop, contact Ronald Badger, Supervisor of Technology, District 6 & 8, New Brunswick Department of Education, at (506) 658-5627 or by e-mail (**Ron.Badger@gov.nb.ca**).

Tanya Sewell is a freelance journalist on assignment with Canada's SchoolNet.

CANADIAN EXPERTS

Answer the World's Online Questions

Have you ever wondered about the benefits of integrating technology in the classroom? What about how to develop a technology plan for your school? Have your students ever asked what the first steps are in creating a Web page or designing an online game?

These were just a few of the questions that teachers, students and others from 24 countries asked during Ask a Canadian Expert from November 20–27, 2000. This online event was Canada's feature project for Netd@ys Europe 2000 and was developed by SchoolNet in collaboration with ePALS Classroom Exchange.

Ask a Canadian Expert provided a unique opportunity for teachers and students to find out more about the future of technology in education. More than 55 leading Canadian experts, from corporate executives to members of SchoolNet's Network of Innovative Schools, answered more than 150 questions. The experts' areas of specialty ranged from digital design and digital music recording to pedagogy and the integration of technology into learning and much more. And, with the use of ePALS' instant translation tool, participants could ask their questions and get answers in French, English, Spanish and German.

Prime Minister Jean Chrétien even got involved during an event organized by ePALS.com. He and a student from Dolphin Senior Public School in Mississauga, Ontario, sent a question on the use of technology in remote locations to Bruce Kirkby, an adventurer who recently crossed Arabia's Empty Quarter by camel.

To view the Ask a Canadian Expert question and answer archive, or to find out more about Canada's participation in Netd@ys Europe 2000, visit **www.schoolnet.ca/netdays/**.

Student SAFETY on the Web

by Doug Walker

Believe me, I've been there! The Web has suddenly descended on your school's computer lab. And there you are, with a sinking feeling in your stomach.

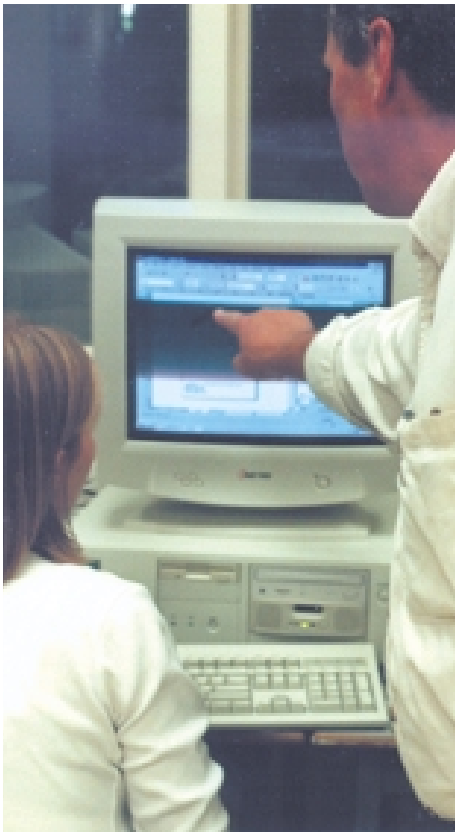
Yes, you are well aware of all the wonderful learning resources the Web offers, but what about the dark side to this new knowledge tool? What about the dangers of predatory chat rooms, of porn sites, of hate sites, of commercial exploitation? What about the ethical problems?

Well, you're absolutely right to be worried! Fortunately, you're not alone in your fears. In fact, in order to let children enjoy the wealth of new learning resources that the Web offers, educators worldwide have been hard at work dealing with these problems, dangers and ethical concerns. Here are four suggestions.

KNOW YOUR ENEMY

Know exactly what your students are up against. Fortunately, the Web has a number of excellent resources specifically dedicated to making the Web safe for children.

An excellent place to start is Canada's Media Awareness Network (**www.media-awareness.ca**), which is a world leader in keeping a close watch on the dangers our children face on the Web.



CONSIDER SITE-BLOCKING SOFTWARE

Kids are kids. What's to stop them from surfing in a split second to the worst places on the Web? Besides, with a computer lab over-filled with students, it's impossible to keep your eye on everyone every minute.

That's where Web site-blocking software comes in handy. There are a number of excellent software programs that filter out objectionable sites preventing students from straying. Go to **www.zen.org/~brendan/kids-safe.html** for a list of the best of these. Get to know the features of these programs. Choose the right one for your school.

CHOOSE CERTIFIED CHILD-SAFE ENVIRONMENTS

Not surprisingly, many educational Web sites are just as concerned as you are that they provide safe interactive environments for students such as chat rooms and personal e-mail.

Here are two Canadian examples: Newfoundland's STEM-Net has developed a safe e-mail environment for students in Newfoundland's schools to use called Class Act (**www.stemnet.nf.ca/**); and ePALS Classroom Exchange (**www.epals.com**) offers a multilingual safe environment with a whole set of monitoring tools for teachers. For more on ePALS, see page 11.

TEACH THE RULES

Bringing up kids safely on the Web is not that different from ensuring their safety in other potentially dangerous situations, such as playgrounds and chemistry labs. Make sure your students use common sense: be wary of strangers, don't share personal information, know where not to go and why.

Does your school (or your class) have an acceptable use policy, which sets out what's okay and not okay to do on the Net? If so, make sure your students fully understand it. And stick to it! If not, the Web has lots of excellent examples you can use as a model to create your own. Here's a site with lots of examples: **http://chico.rice.edu/armadillo/Rice/Resources/acceptable.html**.

Yes, there are dangerous parts to the Web. But with the right tools, the right training and the right smarts, your students won't go there.

Doug Walker, a teacher himself, is the editor of SchoolNet Magazine.

Online Forums:

Hooking Up With Fellow Teachers

by Tanya Sewell

So, you're considering trying something new in the classroom. This activity or tool appears to offer what you want but it also involves a considerable investment of time and money and you can't afford to waste either. What you really would like to do is talk to another teacher who has already tried this, but you can't find anyone in your school district who has.

Imagine a place where you can go and shout out, "Has anyone here tried this?" and be pretty certain that someone will answer "yes." Online forums work a bit like that, and they are an effective way to reach hundreds of teachers across Canada with one message. Whether it be a call for participation in a classroom project, or a call for help with a difficult student or situation, forums will help you make contact with other educators just like you.

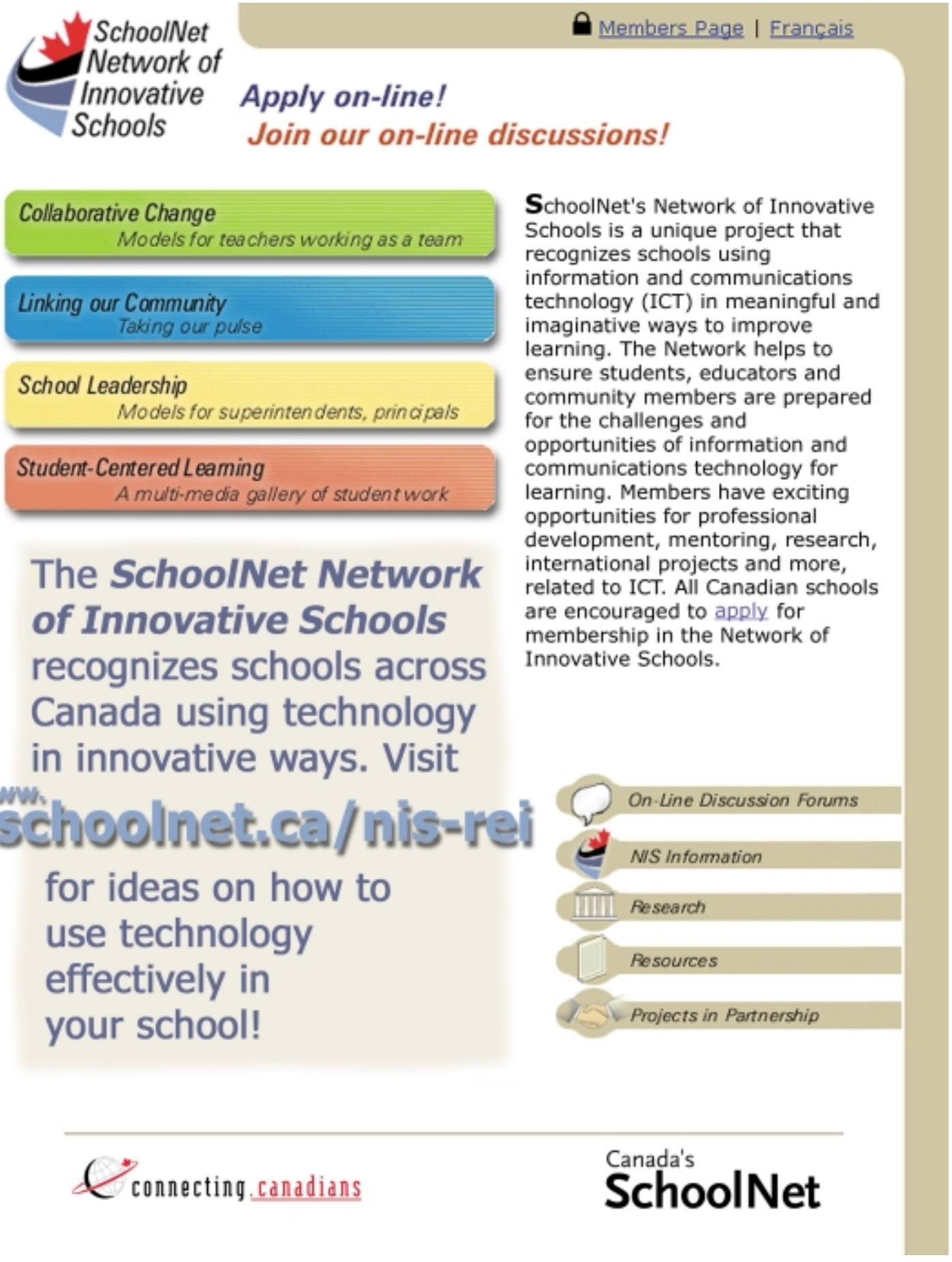
Forums are organized by subject so that people can be certain before entering what sort of discussions they will find. SchoolNet's Online Educators' Forums are hosted by the Education Network of Ontario, and are designed just for teachers. There are forums in areas ranging from integrating technology and virtual learning to curriculum and continuing education for teachers. There are currently 29 forums, 16 are in English, two are bilingual and 11 are in French and more can be created as the need arises.

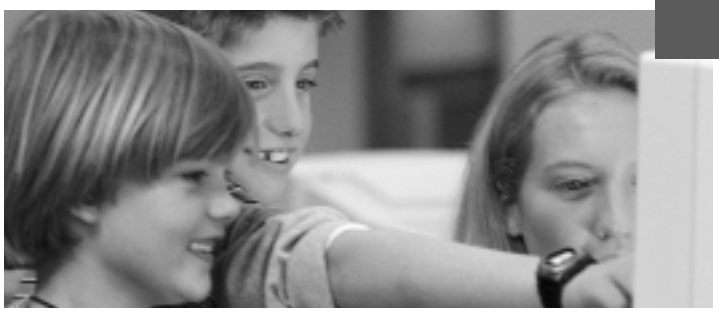
Because the forums are organized by topic, you can be certain that you are using your time effectively. And participating in forums doesn't have to take much of your time. It is easy to keep up with discussions even if you check in only once a week. One half-hour visit to an educational forum can give you some great ideas to use in your classroom for the next week!

It isn't all serious stuff. There is a "staffroom" forum, for example, where informal discussions much like what you might have at your own school take place. The difference is you get to interact with teachers you don't see every day, and share experiences and ideas from your part of the country. Forums are a great way to make friends in the educational world. Who knows... you may find a mentor, or maybe even become one to a teacher just starting out!

Visit the Online Educators' Forum Web site (**www.enoreo.on.ca/schoolnet/forum/e/index.html**) to start making contacts and sharing your experiences on forums such as Innovation in Canadian Schools, Teachers as Learners and Aboriginal Link. Its free and will create a wealth of opportunities for you and your students!

Tanya Sewell is a freelance journalist on assignment with Canada's SchoolNet.


SchoolNet Network of Innovative Schools
Members Page | Français
Apply on-line!
Join our on-line discussions!
Collaborative Change
Models for teachers working as a team
Linking our Community
Taking our pulse
School Leadership
Models for superintendents, principals
Student-Centered Learning
A multi-media gallery of student work
SchoolNet's Network of Innovative Schools is a unique project that recognizes schools using information and communications technology (ICT) in meaningful and imaginative ways to improve learning. The Network helps to ensure students, educators and community members are prepared for the challenges and opportunities of information and communications technology for learning. Members have exciting opportunities for professional development, mentoring, research, international projects and more, related to ICT. All Canadian schools are encouraged to apply for membership in the Network of Innovative Schools.
The SchoolNet Network of Innovative Schools recognizes schools across Canada using technology in innovative ways. Visit
www.schoolnet.ca/nis-rei
for ideas on how to use technology effectively in your school!
On-Line Discussion Forums
NIS Information
Research
Resources
Projects in Partnership
connecting.canadians
Canada's SchoolNet



Microsoft® School Agreement

Control costs and give your students the technological edge

Microsoft® School Agreement makes software compliance easy

Microsoft is changing the face of institutional software licensing. The revolutionary **School Agreement** licensing program addresses the specific needs of K-12 education at a cost that's lower than ever. Microsoft School Agreement is a subscription that gives you the rights to run the licensed software for a 12-month period and licenses all upgrades and downgrades of the software throughout the term of the agreement. Microsoft School Agreement requires you to meet a minimum of 100 machines, and then, depending on the number of total machines, the pricing is tiered. School Agreement delivers the Microsoft products that help students and teachers be productive.

Sign a new School Agreement and get $2,000 worth of training tools free!*

Sign a Microsoft School Agreement by February 28, 2001 and you'll get a complimentary training kit for your teachers and staff, while supplies last. Your kit will include:

- 20 copies of Windows® 2000 Professional Step-by-Step Interactive
- 20 copies of Web Publishing Step-by-Step Interactive
- 2 copies of the Office 2000 Professional Step-by-Step book.

Plus, you'll also get a copy of Visio® 2000 drawing and diagramming software to evaluate. And two copies of Microsoft Project work management software.

Microsoft School Agreement includes licenses for the following products:

- Microsoft Office 2000 Professional, including Word 2000, Excel 2000, PowerPoint® 2000, Access 2000, Publisher 2000 and Outlook® 2000
- Microsoft Windows Upgrades, including Windows 2000 Professional Upgrades
- Encarta® Reference Suite and Encarta Online Deluxe
- Visual Studio® 6.0 Professional Edition
- Microsoft Works
- Microsoft Office 2000 Professional Step-by-Step Interactive by Microsoft Press®
- BackOffice® Client Access Licenses.

Contact your Authorized Education Reseller to purchase School Agreement.
Or visit **www.microsoft.com/education/license/promo2k.asp.**