connecting *canadians*

Fall 2001

SchoolNet

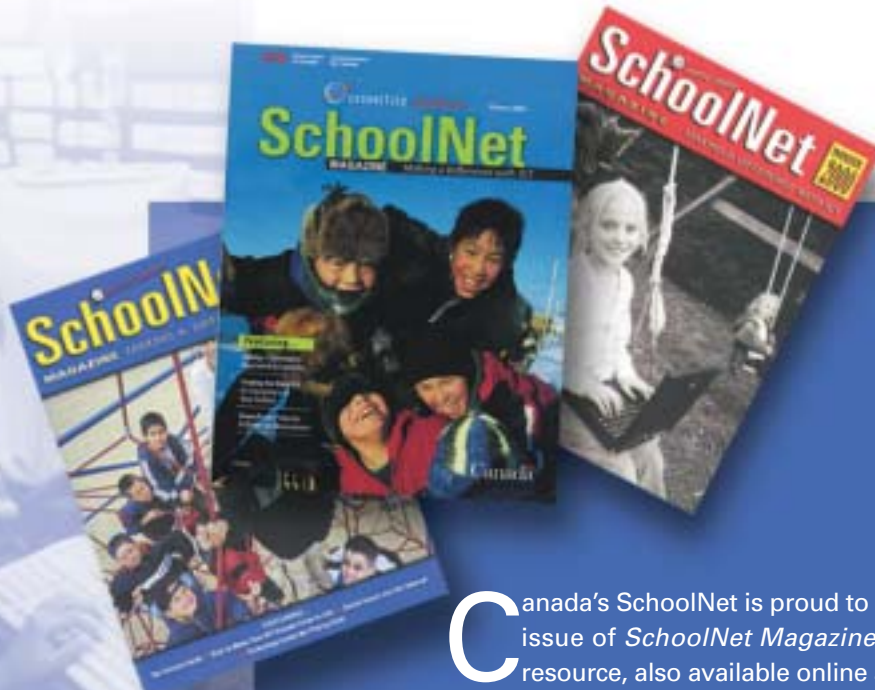**MAGAZINE** *Making a Difference with ICT*

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Canada

It's Here!

SchoolNet

MAGAZINE   *Making a Difference with ICT*

Canada's SchoolNet is proud to introduce the fall 2001 issue of *SchoolNet Magazine*. This great Canadian resource, 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 technologies for learning, *SchoolNet Magazine* will help you start and complete exciting, creative and collaborative Internet-based classroom projects.

To complement the feature articles, you will find in each issue new and interesting pieces on five distinct themes 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*

SchoolNet Magazine was designed to fit your needs. 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 Fall 2001

Features

Cover photo: David Trattles

Editor's Note

Welcome to the Fall issue of *SchoolNet Magazine*. As I wish you all the best for the coming school year, I realize that one thing you won't be short of during the coming months is change. Just as the power of the computer doubles every 18 months, so does its impact on education.

For instance, have you noticed how having Internet-connected computers around has changed the basic way we think about teaching?

Look how computers have empowered our students to achieve results previously thought to be way beyond their age capabilities. Today's computer software enables students to ask themselves "What if?" questions and to try things out under virtual conditions. The computer these days encourages students to dream and imagine.

Certainly the fear of making mistakes is no longer the stumbling block to progress in learning it once was. In the classroom, freedom from the tyranny of the red pencil came with the spelling checker, the thesaurus and the word processor. With a mouse click, students suddenly could rearrange their ideas as much as they liked until they were happy with their essay, story or assignment.

Today's multimedia software is a powerful thinking tool, too. When students look at their photographs and artwork using graphics software, they can rearrange the composition, resolution, lighting and many other aspects. When they edit their own music using audio software, they get to hear it as it would sound in different rooms, with different instruments, and even in different playing styles. The computer enables students to gain all kinds of thinking experience *virtually*. How much pre-computer schools would have loved to have empowered their students with such hands-on experience! Our reality was their science fiction.

And what about the revolution in relevance brought to learning by the Web? These days, students quickly and intuitively find information that's current. Being well informed, they listen more critically to their teachers. They find themselves now able to contribute ideas and Web resources to help shape what their class is learning.
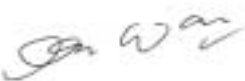
Today's students are also more media-sophisticated about the information they come across. They understand about bias and rhetoric. This is another far cry from not too distant days when one rarely questioned information that was enshrined in a textbook or encyclopedia article. In itself, that's quite a breakthrough in learning!

Consider, too, how information and communications technologies have made us creatively impatient with impediments to student learning. Once we contented ourselves with merely telling our students stories about the world outside the concrete walls of our classroom. Now we bring that world into our classroom, and make it part of our class, first, with the Web, and more recently, with broadband technology.

This issue brings you articles about the liberating impact of the new technologies. You will enjoy reading how schools are taking learning to new heights in Sheri Brink's article about imaginative uses of information and communications technologies. Larry Danielson reflects from long experience on delivering online learning, and Jocelyne Voisin fills us in on Canada's wired future.

It's going to be an exciting school year. With all the breakthroughs in connectivity, networking, broadband and online learning software, we can expect to be further empowered to reach our students better.

And now, enjoy.

Doug Walker
walker.doug.ic.gc.ca

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The Digital Dance:
Learning New Steps for the Online Classroom

by Larry Danielson

"**T**he hardest thing is to stay there and dance, when you don't know how to do it and you're just jumping around. It would be very easy to walk out, but you don't."

Those are the words of a Canadian teenager describing his first school dance.

We've all been there. The school gym is transformed with special lights and decorations. The music is playing loudly. You cluster together with friends, waiting to be asked to dance or working up the nerve to ask someone. Then, you take the plunge and head out onto the floor, hoping no one is watching. You don't want to be seen to be a klutz. It's a slow dance and you try not to step on your partner's toes.

Such experiences seem a far cry from performance dancing, when skilled artists glide through space—running, skipping and leaping—mesmerizing viewers with their elegance. We marvel at what their bodies can accomplish.

With its talk of computers and software, online learning may seem to have little connection with the world of dance. Yet certainly it does. As technology innovators, teachers have known moments every bit as awkward as the first school dance. As with the teenager quoted above, teachers know how hard it is to "stay there" when you "don't know how to do it." And they know how tempting it is to just "walk out." Many of us working as online teachers have not yet reached the proficiency of performance artists, but we are no longer just "jumping around." We have begun to learn the steps and relax with the music. We have joined the "digital dance"— a celebration of electronic life and of the educational opportunities it affords.

My particular engagement with the digital dance relates to the development and delivery of online high school courses. I began teaching online at Garden Valley Collegiate in Manitoba (**http://gvc.gvsd.mb.ca**) in the fall of 1995, delivering lessons to students via computer at school or at home.

One of our goals was to demonstrate that the existing staff and resources in public schools could contribute effectively to the development and delivery of distance education courses. That goal is now being realized, but we discovered along the way that the process also flows in the opposite direction. The experience and expertise of distance educators greatly enriches the delivery of learning to and the development of on-site students.

At a time when digital technologies are converging, it is fitting that the traditional boundaries between educators are disappearing. Just as students can use online technologies to study any place and any time, so, too, can teachers with very different backgrounds work together electronically to provide learning wherever and whenever it is needed.

What are the attractions of the digital dance? Online learning is often used when time, space or both separates teacher and learner. Many adult learners cannot easily fit their lives into the schedule of an institution. Online delivery helps people whose schedules keep changing, whose work necessitates travel, or whose family commitments require them to remain at home.

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

Online learning also benefits traditional school-based learners. In recent years, "bankers' hours" have expanded to "24/7"—ATMs provide service 24 hours a day, 7 days a week. Yet how many of our schools and adult education centres offer the new bankers' hours? If we in the education system hope to be relevant in the years ahead, we dare not remain "full-service only" in a self-service world.

At Garden Valley Collegiate, we use online delivery with many of our on-site students and we believe it offers them many self-service advantages. It gives students more flexibility in their schedules and where they learn. It allows them to collaborate with students in other schools and to learn from distant experts. Most importantly, it affords students more control over the pace and direction of their learning; it enables them to become more independent learners. As they organize their schedules for productive course work, they learn self-discipline and time management skills that improve their prospects for success as lifelong learners.

Online learning also brings significant benefits to teachers. As with students, a teacher can now work any time and any place. Canada has many excellent teachers who live in areas where the student population is dwindling. If your spouse is a farmer or a small-town doctor, you cannot just pack your bags and move to an urban centre. But, electronically, you can congregate a class from among several small schools. Or you can teach for a distant school division. If you are a young parent, you can work from home and teach during hours when your child does not need attention. If you are a retired teacher, you can serve as the mediator for one course and still enjoy leisure time at home.

Some teachers are intimidated by the technology needed for online delivery, but it is not so complicated. You can learn most of the vital skills in advance—by reading online news stories, participating in online discussions, writing Web articles, and presenting yourself electronically with a Web page. It is like learning a dance at home, standing in front of the mirror or practising with a friend. It pays off beautifully once the dance is real.

Martha Graham, perhaps the greatest teacher of modern dance, wrote the following in her autobiography, *Blood Memory*:

I believe that we learn by practice. Whether it means to learn to dance by practicing dancing or to learn to live by practicing living, the principles are the same. In each it is the performance of a dedicated precise set of acts, physical or intellectual, from which comes shape of achievement, a sense of one's being, a satisfaction of spirit. One becomes in some area an athlete of God.

I am convinced that Canadian teachers can be such athletes and that, if we are willing to learn through online practice, we can find our shape of achievement, our sense of being, and our satisfaction of spirit in the digital dance.

Larry Danielson is an English teacher at Garden Valley Collegiate in Winkler, Manitoba, and is also a columnist for ISTE Magazine.

THE WIRED FUTURE:

Keeping Canada on the Leading Edge

by Jocelyne Voisin

The Internet—it's likely become an integral part of your teaching and learning. Maybe it's become a fundamental part of your life. But you can't help but wonder… is it ever going to get any faster?

You know that the Internet has the potential to change the way people find information, communicate with each other, do business and, most critically, learn. In short, it can mean a revolution for your community, particularly if you live in a rural or remote area. You could benefit from distance learning, or even from telemedicine services such as remote diagnosis and monitoring.

The federal government has recognized the critical role that the Internet will play in the future and quality of life of Canadians. It wants to propel Canada into the networked age as a matter of national priority. In fact, in the most recent Speech from the Throne, the government committed to making high-speed broadband Internet access widely available in every Canadian community, no matter how remote, by 2004. It's a vision for digital inclusion.

As a first step, Industry Minister Brian Tobin assembled the National Broadband Task Force. Chaired by Dr. David Johnston, President of the University of Waterloo, the 35-member task force includes experts from every region of Canada, representing industry stakeholders, digital content producers, rural communities and Aboriginal groups, as well as users in the education, library and health communities.

The task force consulted with all provincial and territorial governments to learn from existing models for broadband service and to discuss possible intergovernmental collaboration. In addition, Canadians across the country made their voices heard through online submissions and consultations conducted by Agriculture and Agri-Food Canada's Rural Secretariat and some task force members.

These consultations confirmed that many Canadians are anxious for high-speed access. For example, here is a submission from Mark Wylie, a school principal in the Prairie Rose School Division in Alberta:

As an educational leader, and IT researcher, I am quite pleased to hear of this recent development and can wholeheartedly say that the education sector will require high speed Internet access to continue to meet the needs of students, staffs, parents, and the business community. We look forward to hearing about implementation details.

Achieving this goal is much more than an engineering challenge. It is a nation-building challenge that will require innovative partnerships between public and private sectors, with the active involvement of Canadian communities.

The task force recently made its recommendations to the federal government on how to achieve the goal of broadband access for all communities. *SchoolNet Magazine* will look at the recommendations and resulting activities by governments across Canada in upcoming issues.

You can find out more about the task force's recommendations and access research studies commissioned by the task force at **http://broadband.gc.ca**.

Jocelyne Voisin is Assistant Manager of the National Broadband Task Force Secretariat.

Certificate Recognizes ICT Skills of Canadian Youth

Educators and instructors: take a look at the Canconnect Skills Certificate.

This Internet-based motivational tool helps Canadian youth from kindergarten to grade 12 acquire and demonstrate industry-recognized "soft" and "technical" information and communications technologies (ICT) skills.

The initiative includes a generic ICT skills matrix comprising three skill sets and four levels of performance. Youth can gain their skills using any computer operating system or application. Participation is free, implementation is flexible and this valuable resource suits both school- and community-based learning settings.

For more information, visit **http://canconnect.ic.gc.ca/certificate**.

GrassRoots Projects:

by Doug Walker

The SchoolNet GrassRoots Program is a Canadian success story. In just three years, teachers have conceived, built and tested 20,000 classroom-based Internet projects.

All those projects represent a lot of learning and a lot of teaching skill and imagination. It's quite a resource for the world!

The GrassRoots online database (**www.schoolnet.ca/grassroots/e/ project.centre/search-projects.asp**) is a gold mine of great ideas and down-to-earth tips for teachers. To see what I mean, just do a search on any of the core subjects, such as science, social studies or language arts. You will be overwhelmed by hundreds of imaginative projects.

Here's another reason why it's so worthwhile to explore the treasure trove in the database: GrassRoots projects so often let you see all the stages of the learning process. Here are three good examples.

HERITAGE HOMES—PAST, PRESENT AND FUTURE

Fifty-six students from two grade 2/3 multiage classes at Dr. Morris Gibson Elementary School in Okotoks, Alberta, built this project (**http://136.159.139.169/ schools/gibson/community/**). The children explore their community's past by visiting old buildings and then sharing anecdotes about what they saw and how it felt being there. Next, they compare these old buildings to their modern counterparts and also design what they imagine houses will look like in the future.

The project site shows multimedia at its best, simply and effectively drawing you in. Site visitors participate in the learning while experiencing the excitement of discovery. It's quite magical, particularly when you realize that your teachers are seven-to-nine-year-olds.

BACKPACKS BREAK BACKS

This is a grade 4 to 6 mathematics project from Sargent Park School in Winnipeg (**www.wsd1.org/sargentpark/ backpack.htm**). It probes an issue concerning many schools: whether students can hurt themselves by routinely carrying too much in their backpacks. One of the key objectives of the project is to hit home to students how they can use ordinary thinking tools such as math to find out.

"Come and see what we did next!" the students say to site visitors at every step. With statistical methods and graphs, the students document backpack weights among their schoolmates in a number of classrooms. It is interesting to note how students compare their estimates of the weights to the actual measurements. They look at both figures because the literature on the topic of backpack weight (which is linked to the site) suggests that children underestimate the real weight of their backpacks.

The students make the multimedia presentation of their findings deeply involving. The intense drama of figuring out the answer to the backpack question comes across very clearly!

BOILUPS AND BITS

This is a fascinating family science project (**www.hsh.k12.nf.ca/~michkelly/boil ups/**) designed by senior high school students to celebrate the traditional cuisine of Newfoundland. The project Web site is visually stunning, for the class makes meticulous use of a digital camera to illustrate the preparation of authentic recipes. The images capture the colour and texture of the traditional food so well that site visitors can almost taste it. A delightful dry humour is everywhere in evidence, besides.

You get the impression that not all the students were familiar with the traditional fare, but it's clear they were won over by the spirit of adventure that was so much a part of the project.

DON'T TAKE JUST MY WORD FOR IT

Dr. Ron Owston and Herb Wideman of York University's Centre for the Study of Computers in Education are studying GrassRoots projects to learn more about

Learning You Can See

"the contexts and factors within schools that contribute to the successful and sustained use of ICT-based pedagogical practices." Owston and Wideman are working in collaboration with research teams in faculties of education at Memorial University, Université Laval, McGill University and the University of Calgary.

"It is expected," they say, "that the findings from this research study will provide a lot of insight regarding how using GrassRoots projects can play a part in effective teacher training at the pre-service level. As well, looking at some of the most innovative projects is expected to contribute new ideas on improving classroom practice and professional development."

Recently, the Conference Board of Canada conducted case studies of four GrassRoots projects to see how well they help students develop skills for tomorrow's workplace. Researcher Kurtis Kitagawa says that the projects are enormously powerful vehicles for engaging and focussing teachers and students. They participate in a shared learning experience that uses information and communications

technologies to meet curriculum objectives. "This has begun to effect a 'paradigm shift' for participating students and teachers," Kitagawa notes in his report.

Teachers enjoy GrassRoots projects because they bring out the relevance of learning. According to a long-time practitioner of innovative science teaching, London, Ontario's Jon McGoey, "schools are supposed to prepare children for the 'real world'—a place that is intensely problematic by nature—but we do so by transmitting to them answers to unproblematic questions. But given the problematic nature of the world, should we not be teaching students how to question instead of how to answer? The GrassRoots program not only encourages this, it demands it."

Ottawa teacher and GrassRoots booster Dalia Naujokaitis puts it this way: "Through the Internet style of learning, achieved through the GrassRoots Program, my students have become creators and not only consumers of knowledge. Working on a common goal with students electronically linked across the world encourages participation,

resource building and above all communication and sharing of ideas. The wave of the future is here: teamwork, telecommunications and transformation."

Provincial partners involved with the GrassRoots Program point out how GrassRoots projects provide practical follow-up to teacher training.

Wayne Hamilton, with the Nova Scotia Department of Education, is enthusiastic about the impact of GrassRoots projects on teachers' professional development. "GrassRoots has supported the professional development that Nova Scotia has initiated with the Information Economy Initiative. Additionally, it has seen teachers who have participated in development sessions with specific information technology [IT] focus, such as Web quests or Web page development, move on to use GrassRoots as the incentive to apply their newly acquired skills."

Hamilton goes on to say that "the program is really a classroom application of all the previous joint provincial and board efforts to advance IT integration in Nova Scotia classrooms. GrassRoots allowed the teachers to apply their learning with their classes. It also provided direct funds to advance IT projects at a school level, which the Information Economy Initiative could only address with more global board and provincial efforts."

GIVE IT A TRY!

Now that you've had a taste of what GrassRoots projects can do, why not join the fun? There are countless ongoing projects that you hook up with and many more that you could rerun with your students. Once you get the hang of it, you could even develop and share your own program with the world. For more information go to **www.schoolnet. ca/grassroots**.

Doug Walker is a teacher and the editor of SchoolNet Magazine.

New Technologies
Take Learning to
New Heights

by Sheri Brink

New technologies are revolutionizing the way we work, live and learn. But, when it comes to investing time and money into making them efficient and effective, the stakes can be high. With help from SchoolNet's Network of Innovative Schools (**www.schoolnet.ca/ nis-rei**), schools and teachers are getting the training they need to step out on the edge and integrate technologies such as online learning, computer simulation and wireless technology.

SchoolNet Network of Innovative Schools

ALTERNATIVE LEARNING OPTIONS

It's hard for parents and teachers to keep up with student schedules these days. Online learning presents a learning alternative that meets the needs of busy students.

The need for increased flexibility is what led Vincent Massey Collegiate in Winnipeg (**www.fgsd.winnipeg.mb.ca/ vmc/index.htm**) to explore online course delivery. Vincent Massey created a consortium called InFormNet with the school division and several other schools to develop and deliver online courses.

Teachers at Vincent Massey receive release time and a lighter teaching load to create the online courses, which they then deliver as part of their regular schedule. These teachers have to be specialists in online teaching, WebCT and multimedia, and have a solid understanding of the course content. Common timetables allow online teachers to meet to discuss issues and receive training in their subjects.

Students who pilot tested the first online course attended an in-person orientation session that provided tips on how to progress through the course. Even parents were able to get involved, as password access to the course Web site allowed them to work through the material themselves.

The first year of online course delivery was a success, and, in year two, students can now register any time using an open registration system and complete the course at their own pace.

Online learning also provides alternative learning arrangements for students who choose to opt out of the formal education system. Agnes L. Mathers School in Sandspit on British Columbia's Queen Charlotte Islands (**www.alm.sd50.bc.ca**) launched the electronic school program to do just that. The program is ideal for students who are having difficulty fitting in to the regular school program, who do not wish to be part of a formal school, or who are sensitive to outside distractions.

Teachers develop online curriculum using a variety of software and create additional assignments that meet curriculum outcomes. The school provides each student in the program with a multimedia computer, home access to the Internet and a variety of supporting software and textbooks. Teacher Laura Sample directs student learning with study plans and assignments along with communication via e-mail and telephone and home visits with parents and students every two weeks. (You can view online video of Sample visiting students in B.C.'s coastal rain forests at **www.schoolnet.ca/ nis-rei/e/inth news/profiles.asp**.)

While supported by the provincial ministry of education, the program can only accommodate so many students. As a result, the school has been limited in its ability to expand, innovate and develop course materials. And, as with many schools, Agnes L. Mathers School has found that it is not always easy to keep up with new technologies. Nevertheless, if it were not for the electronic school, some young people in Sandspit would not be getting a formal education.

LEARNING IN NEW PLACES AND SPACES

Over the years, technology has taken people many places, even outer space. At Ralph McCall School in Airdrie, Alberta, (**http://rocky-main.rockyview.ab.ca/mccall**), computer simulation is taking students to a whole new world. Students are new recruits of the Cultural Research Team of the Order of Arcadia. They arrive at the virtual Fort Archamedus, and are invited to embark on a mission during which they make decisions about real-life situations and determine the fate of the city facing a natural disaster.

This model allows for participation of students, pre-service teachers, graduate students, classroom teachers and administrators from various institutions. Ralph McCall School hopes to develop and program a series of preliminary activities that grade 7 and 8 students can test and evaluate.

At Eastview Middle School in Red Deer, Alberta (**www.rdpsd.ab.ca/ev**), a stock market simulation is providing a real take on the ups and downs of financial investing. Grade 8 students buy and sell stock at current market value. Students are given $100,000 in virtual capital in a team portfolio and they must spend at least 80 percent of it on stock.

(**www.durham.edu.on.ca/s_links/schools/westcreek**) seem to think so.

The laptop program at Westcreek gives each teacher the freedom to log on to the school network any place, any time and download electronic instructional resources. "The best way to improve student learning is through the continued development of teachers' skills. They must be provided with appropriate resources and opportunities to develop their own skills," says principal Kevin Lowe. And it seems this philosophy is working, as the school's step into the wireless world has led to phenomenal growth in skills and interest in technology among staff and students.

Lisa Gust and Jim Boyce, students at Ralph McCall School, work together on Project Rescue— an interactive, scenario-based computer simulation.

This exciting opportunity for role playing and problem solving is part of Project Rescue—an interactive computer simulation. Staff began the project with reading, discussion and journal-writing sessions on scenario-based learning and constructivist education philosophy. The project follows an action research approach featuring the following:

- planning: discussing current realities associated with particular practices, and searching out what they should be
- acting: implementing the plan
- observing: collecting data for subsequent reflection and action
- reflecting: reflecting on what is happening, and revising action plans based on the planning, acting and observing.

Students learn research, problem solving, record keeping and estimation skills as they assess their weekly losses or gains. The project also fits with the mathematics curriculum, covering rational numbers, graph reading and percentages.

Students enjoy this alternative learning method, as seen in their excitement at checking their portfolios and turning a profit. In addition, members of the community have donated actual stocks as prizes for Eastview's top portfolio managers.

WIRELESS LEARNING: ANY PLACE, ANY TIME

Is wireless technology a viable option for schools? Is it a worthwhile investment? The administration and staff at Westcreek Public School in Pickering, Ontario,

Another worthwhile investment has been Palm technology, which offers many interesting applications for teaching and learning. For example, teachers can load the expectations from the Ontario curriculum, rubrics, subtasks and other assessments onto a Palm Pilot. Teachers can then evaluate students on the go, transferring their data to a PC and then their report cards.

With support from school administrations, teachers at Network of Innovative Schools member schools have taken brave steps to provide students with real-life experiences that build their skills for the future and take learning to new heights.

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

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All Aboard for Safety and Online Learning!

by Jason Gadoury

One of the great things about a SchoolNet GrassRoots project is that teachers and students designing it get to choose the subject. But learners can also take part in a variety of ongoing Canadian online projects that relate to a specific theme, resource or area of study. Such projects include Writers In Electronic Residence, the RCMP's Delivering Education and Awareness for Life and GrassRoots Communities@ca.

Through these theme projects, teachers and students have the opportunity to contribute to a collection of GrassRoots projects on a common topic. Of the approximately 20,000 SchoolNet GrassRoots projects created to date, about one quarter fall under a theme. SchoolNet GrassRoots theme projects are generally managed through partnerships with federal government departments, such as Statistics Canada (the Profiling Canada project) or with non-profit organizations (the Kids from KA-NA-TA project).

Earlier this year, SchoolNet GrassRoots also partnered with Canadian private sector organizations on theme projects. CN is the first GrassRoots Program Sponsor to participate, with its All Aboard for SAFETY theme project (**www.schoolnet.ca/grassroots/e/showcase/cn/index.asp**). CN has made a serious commitment to safety as an organization, in its programs and daily work methods, in its compliance with standards and in the way it does business. CN's commitment also includes raising awareness of safety issues among Canadian youth. This is what the All Aboard for SAFETY theme project is all about.

The GrassRoots/CN project Web site features the safety-related Resource Centre, Fun Zone and GrassRoots Safety Project Gallery. The site also explains how to build a SchoolNet GrassRoots project and offers online links to a variety of safety resources, including the Block Parent Program of Canada, The Canadian Safe School Network and Operation Lifesaver. All Aboard for SAFETY provides everything a teacher needs to begin planning a safety-related SchoolNet GrassRoots project in the classroom and to get students thinking and collaborating on this important subject.

Imperial Oil launched another SchoolNet GrassRoots theme project called THE RIGHT CHEMISTRY (**www.schoolnet.ca/grassroots/e/showcase/Imperial/index.asp**) shortly after the CN launch. As sponsors of the SchoolNet GrassRoots Program and by supporting the integration of information and communications technologies in education, CN and Imperial Oil have demonstrated a shared national vision with Canada's SchoolNet GrassRoots. Through All Aboard for SAFETY and THE RIGHT CHEMISTRY, CN and Imperial Oil are creating an opportunity for Canadian teachers and students to combine technology and creativity to stimulate learning and broaden awareness.

To learn more about GrassRoots theme projects and the SchoolNet GrassRoots Program, visit **www.schoolnet.ca/grassroots**.

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

INTERNS

Enhancing Learning in Manitoba!

by Michelle Laing

With technology advancing at such a fast pace, it's hard to keep up, and nobody runs this race like our schools; there is always new technology to learn. Now, with the help of SchoolNet's Youth Employment Initiative (YEI), things may get a little easier.

Through SchoolNet YEI, schools can hire youth interns to help with the integration of information and communications technologies. The interns not only develop skills for the future, but also provide professional development to staff and students.

One board that has already taken advantage of this program is the Swan Valley School Division in Swan River, Manitoba. "We have had SchoolNet employees for three years," says vice-principal Cam Mateika, "and have had tremendous success in working with various projects."

Swan Valley School Division comprises 10 schools, six of which are connected using wireless technology, and the other four with satellite dishes from Industry Canada. The division has 700 computers (each with an Internet connection through a T1 line), as well as printers, scanners and digital cameras.

Swan Valley Regional Secondary School has a Geographical Information System lab, in partnership with the Environmental Systems Research Institute. Each classroom contains one computer for The Grade Machine Program and a television for live broad-

casts and announcements. There is a technical communications English class with a computer lab so students can develop portfolios and work on real-life proposals for the school and community. In the information technology area, the school simultaneously offers up to 12 credits for four grade levels. Courses include multimedia, computer-assisted design and desktop publishing. As well, the school uses technology in the marketing, foods, power mechanics and visual communications areas.

Swan Valley School Division filled four positions through SchoolNet YEI in the most recent school year, and took advantage of the interns' time and knowledge. The interns have helped students and staff get used to the computer systems, built and maintained Web sites for the schools and taught teachers how to put their information on the sites. The tasks the interns have been performing have helped teachers learn new software programs and integrate them into their curriculum. The teachers learned the hardware components of the networks, which has reduced downtime in the classroom. Swan Valley is a Cisco Regional Academy that teaches online courses on networking, and its environmental management program uses technology to deliver 10 full courses in environmental studies. It's easy to see that the professional development in Swan Valley School Division is very high. Not only are the staff and students learning but also the interns themselves are learning new things.

Visit the Swan Valley School Division at **www.svsd35.mb.ca**. To learn more about SchoolNet YEI, visit **www.schoolnet.ca/YEI**.

Michelle Laing is Program Manager for SchoolNet YEI in Manitoba.

Swan Valley students working in the information technology area.

Coordinated Effort Needed to Accelerate Online Learning

by David Johnston

I n February 2001, the Advisory Committee for Online Learning released its report, *The E-Learning E-volution in Colleges and Universities: A Pan-Canadian Challenge*.

The Committee was created jointly by Industry Canada and the Council of Ministers of Education, Canada to develop a strategy to accelerate and coordinate efforts by governments, colleges, universities and businesses to offer online learning. Although the report is intended for an audience of post-secondary educators, its challenging vision of the future directly concerns our high school graduates.

EMPOWERING ONLINE LEARNERS

Kindergarten to grade 12 educators have been playing an important role in ensuring that Canadian learners will have the knowledge, skills and experience in using the Internet for learning purposes. Now their cooperation in adopting online learning within the classroom will help to equip students to take full advantage of online lifelong learning. Developing these new skills will contribute to diminishing the digital divide and provide more opportunity for Canadian learners to enjoy quality post-secondary education, any time and any place.

Universities and colleges are beginning to face a demand for online learning from two growing demographics: recent high school graduates and adult learners seeking retraining. Both sets of learners have experienced the global culture of the Internet in elementary and secondary school, at home and at work, and expect the same convenience, speed and easy accessibility from their post-secondary education.

A VISION OF LEARNING FOR 2005

The Advisory Committee for Online Learning has a vision of what post-secondary education will look like in the next five years. By 2005, there will be virtual classrooms that offer a high-quality learning experience, using technology easy for anyone to use. Tomorrow's high school graduates, as well as lifelong learners seeking post-secondary education, will be able to find the learning opportunity most suited to their needs, situation, income, language and learning style, whether online at home, work or a public access site, or face-to-face in a traditional campus classroom. Online learning will allow tomorrow's learners to choose from among an unprecedented range of courses and programs offered by various colleges and universities and find the precise mix that meets their needs.

A PAN-CANADIAN ACTION PLAN

The Committee believes that high-quality online learning will only become widely available to Canadian learners as new forms of collaboration emerge to create synergies and greater critical mass within the Canadian post-secondary community. The pan-Canadian action plan that addresses the needs of students, faculty and institutions recommends the following:
- making the Internet more accessible and affordable
- training faculty to make better use of educational technology in teaching
- creating a comprehensive source of information on all Canadian online learning resources
- developing more quality online Canadian learning content
- increasing research in learning, both traditional and online.

IT'S UP TO US

Of course, the extent to which Canada benefits will, to a considerable degree, be determined by how quickly and effectively our schools, institutions and faculties embrace online learning. However, if we do nothing, online learning will still come to post-secondary learners in Canada, but it will be increasingly provided by non-Canadian institutions and corporations.

On the other hand, if Canadian K-12 educators continue to expand their existing initiatives and build on their successes in fostering information and communication skills among our young learners, tomorrow's learners will be able to take full advantage of post-secondary online learning opportunities. Most importantly, they will be prepared to succeed in the knowledge-based economy.

David Johnston is Chair of the Advisory Committee for Online Learning and President of the University of Waterloo.

What is Online Learning?

The Advisory Committee for Online Learning defines online learning as what occurs when education and training (typically credit but also non-credit) are delivered and supported by networks such as the Internet or intranets. Learners are able to learn any time and any place. Online learning refers to both distance learning and the provision of technology-enhanced learning within a traditional classroom, lecture hall or lab.

TOOLS and TECHNIQUES Help Kids Surf Safely

by Elliot Campbell

For teachers and parents, ensuring that kids use the Internet responsibly and surf safely is an ongoing job. Fortunately, as educators, governments, Internet providers and other groups gain experience with the Internet in education, many tools and techniques are emerging to help.

For example, the federal government has developed the Canadian Strategy to Promote Safe, Wise, and Responsible Internet Use (**www.connect.gc.ca/cyberwise/**).

The 36-page report lists initiatives that educate and empower users, promotes self-regulation as key to keeping kids safe on the Internet, and discusses local and global government and law enforcement efforts to keep offensive content off the Internet.

Teachers and parents will find the strategy useful because it lists tools to help keep students away from Internet content that might be considered offensive or illegal. The federal government sees awareness, education and knowledge as the foundations of effective solutions, and these are the basis behind its approach.

Internet safety and awareness organizations, such as the Media Awareness Network (MNet), are featured in the report. MNet's Internet education program, Web Awareness: Knowing the Issues (**www.media-awareness.ca/eng/webaware/home.htm**), is designed for parents, teachers, librarians and community leaders. It shows them how to help youth develop skills to become safe, wise and responsible Internet users.
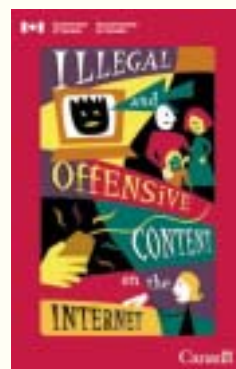
Schools can also encourage their students to view only safe content. At Canso Academy, a small high school in Canso, Nova Scotia, each student has access through an account to school computers. Mary LeBlanc, Canso's principal, has students sign a school board-sponsored contract, which states that the student will only view "appropriate" Web content. According to LeBlanc, the contract has worked well, with only "very few" incidents.

In Moose Jaw, Saskatchewan, education is seen as the best way to prevent students from viewing inappropriate content. Ramona Stillar, a resource-based learning consultant with Moose Jaw School Division # 1 (MJSD), says that students in her board are also required to sign a contract. Neither Canso Academy nor MJSD schools uses filters as a solution. Filters block access to certain Web sites, often by searching for key words within the site, indicating it might contain offensive or illegal content.

"If we felt filters were effective, we might employ them," says Stillar. While filters can be helpful, they are meant to support, not take the place of, human involvement. Teachers and parents are still needed to monitor online activity, and play a role in developing young people's surfing habits.

Industry self-regulation is also an important way in which students can be kept away from offensive and illegal content. This refers to industry-led, standardized measures that help establish good practices. Many Internet service providers (ISPs) are members of the Canadian Association of Internet Providers (CAIP), which has a code of conduct to reduce the amount of offensive and illegal content on sites hosted by its members. "ISPs should have some role" in controlling what content is viewed online, says principal LeBlanc. "[They] have an obligation to provide information on what could be offensive content." CAIP members also pledge to work with the government to stop illegal content from being posted at all.

Elliot Campbell studies communications at Simon Fraser University in Burnaby, B.C. He is on special assignment with Canada's SchoolNet.

COMPUTERS FOR SCHOOLS OFFERS COMPUTERS AND TECHNICAL SKILLS

Did you know that in addition to providing free computers to Canadian schools, the Computers for Schools (CFS) program helps students gain technical skills?

High schools and community colleges work with CFS to establish a repair centre or computer club. Students gain skills in computer assembly, troubleshooting and repair, while improving the quality of computers. Workshops can be incorporated into the curriculum, and, in some cases, young co-op students receive training.

For more information on this exciting aspect of the Computers for Schools program, call 1-800-575-9200 or visit **www.schoolnet.ca/cfs-ope**.

Canadian Information

by Mansoor Ahmad

A young student portrays Jean Talon, the first census-taker, before a group of grade 7 students in Kars, Ontario. The teacher, Nora McEwen, found the lesson plan on the Statistics Canada Learning Resources site and feels it is a good practical application that has involved her students in learning about Canadian history. Statistics Canada knows that teachers will need help as they work more and more outside the textbook in today's dynamic curriculum.

The student's traditional classroom tools—pencil, notebook and textbook—are still vital. But for students to collect and modify their ideas, access and study information, they have become only part of a larger repertoire. A case in point—students collect data to construct a "built-to-order" robot principal to replace their current one. All the directions, background information and survey forms are housed on the Statistics Canada Learning Resources site. This activity is a truly fun way to introduce measurement and survey skills to an intermediate class. Younger students might like to draw the perfect principal and scan their images onto a Web site to be shared with other classes across Canada. Technology has transformed education and made the instant exchange of information between classrooms and students a reality.

In Quebec, a class accessed ∑-**STAT** to look at the health of 13-year-old people around the world, relating it to their lifestyles and time use. Students were surprised to learn that in France, for example, over 70 percent of males and 60 percent of females had tasted an alcoholic beverage by age 13. Through this type of hands-on application a subject becomes relevant and plausible. Another illustration of this occurred recently in British Columbia where an independent studies high school student working from home researched an assignment on changes to immigration patterns in her province over a period of 20 years. She could access information by theme then copy, manipulate and incorporate exactly what she needed into her research project. ∑-**STAT** is an online education-based tool of census and socio-economic information consisting of current and historical information. ∑-**STAT** comes complete with a host of activities developed by professional educators.

In Prince Edward Island, students at Three Oaks High School had an idea. Using data from the Statistics Canada Web site, they created a quiz that tests a person's knowledge of their province. They then displayed the quiz on their school Web site. Students got the idea of creating their own quiz from the Canada Quiz at **www.statcan.ca**. Here, the Internet inspired students to look for solutions while improving their critical thinking skills.

Over 4,000 students and teachers access the Statistics Canada Internet site daily looking for information to support their studies in every subject. Learning Resources at **www.statcan.ca/english/edu** offers data, downloadable publications, teachers' kits, lesson plans, expert advice in data skills, an educator's discussion forum and a bi-monthly online newsletter.

Students and teachers are also taking advantage of a new resource, "Ask an expert." By e-mailing their queries to Statistics Canada experts, they are getting quick and helpful answers, usually within 24 hours. Every day more and more students and teachers come to the Statistics Canada Web site because they have discovered information on almost everything under the Canadian sun.

One more important component of the Learning Resources site is Profiling Canada. Using text, images and information compiled from the Statistics Canada Web site, classrooms can develop a Web page that could earn them a grant ranging from $300 to $5,500 from the Profiling Canada GrassRoots fund.

Statistics Canada is actively engaged in an education outreach program to encourage the use of Canadian data and information in Canadian classrooms. Statistics Canada is dedicated to promoting numeric literacy and committed to providing support and training to Canadian teachers. Five education representatives provide teachers with front-line assistance from coast to coast when using Statistics Canada's Learning Resources. They are reaching out doing workshops with teachers and bringing their math, technology and subject matter expertise to hundreds of schools all over the nation, so that more and more students can learn with Canadian information.

Mansoor Ahmad is a Marketing Officer with Statistics Canada.

Statistics Canada
Statistique Canada

Canada

Bringing the Internet to Students Faster

As the Internet has enjoyed a period of rapid growth, it has also begun to show some cracks in terms of the response time to individual requests for information from Web sites. It has been argued that a simple increase in the backbone speed will not solve this problem by itself, because there are many bottlenecks in the network that can slow down the delivery of data. It has also been argued that strategically placed caching systems are one of the best solutions to counteract this problem. Caching, in theory, will supply another means to provide fast responses to user requests, especially if a high success or "hit" rate can be achieved.

Working with Rebel.com and IDC, Telesat is conducting an Internet caching trial with two Canadian school boards: the Hastings and Prince Edward School Board in Ontario and the Lewisporte and Gander School Board in Newfoundland. These SchoolNet trials minimize network bandwidth and provide Web-surfing students with fast response time.

The trial assumes that if one student wants a particular Web page, chances are that others will want the same content as well. Rather than sending two or more identical Web pages through the network, which slows performance and increases costs, the schools cache Web content and share it locally.

When a student calls up a Web page, the request is sent to the cache, which acts as a proxy server for the school. If the cache contains the desired content, it immediately delivers the Web page to the student's computer. If the cache does not have the desired content, it requests the page from the Internet. When the Web page arrives, it is added to the cache, expanding the information database.

Once a day, the system sends records of each school district's daily cache activity to Telesat's Ottawa gateway. The system analyzes the records and filters out the most popular Web pages. It then retrieves these pages from the Internet and sends them at night to all satellite receivers in the school district. From the receivers, the pages are pushed into the cache at every school, where they wait for the next student request. Moreover, the records contain valuable traffic information, which Telesat uses to monitor system performance.

"Teachers are used to reserving a slate of library books for a class project," says Fred Markhauser, engineering specialist with Telesat. "With this system, teachers can jump on the Net the day before the project starts, easily download relevant Web pages to the cache, and allow students to research the topic more efficiently."

By experimenting with innovative satellite applications and technologies such as these, Telesat and its partners are laying the foundation for a new world of advanced services. Modern experience has taught us that the future will be here sooner than we think. When it arrives, Telesat and its partners will be ready.

www.telesat.ca/satcache
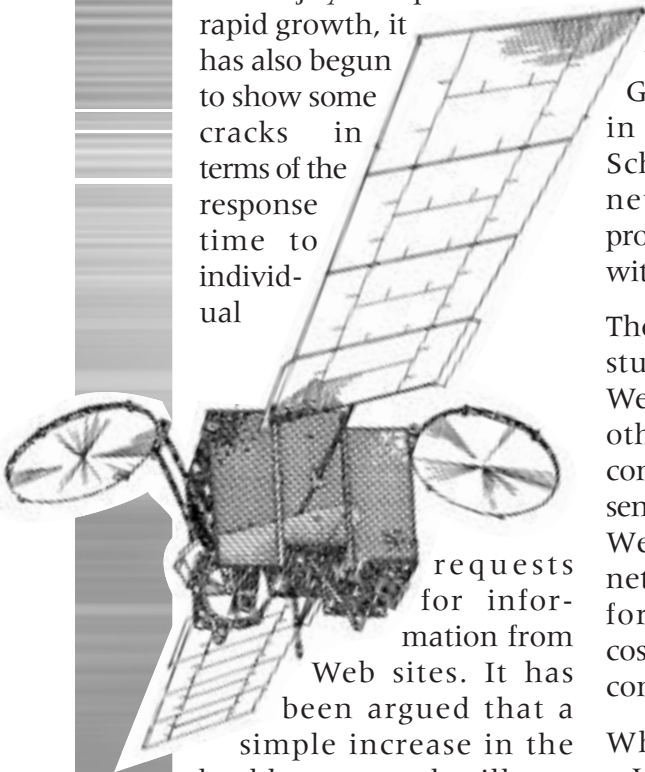
SkillNet.ca:
The Career and Recruitment Network

Have you ever looked at the recruitment sites on the Internet and wondered "Why isn't there something specifically for me and the career I want to go into?" Or, "Why can't I just go to a recruitment site specific to my sector to hire my employees?" Well, stop right there! SkillNet.ca has the solution you've been looking for and it's right at your fingertips, 24 hours a day, seven days a week.

SkillNet.ca, an initiative of the Government of Canada's Connecting Canadians Strategy, has developed a powerful matching technology and, using this, has built a number of industry-specific career and recruitment sites that help job seekers and employers with their recruitment needs. Whether you're a job seeker attending university or college, entering the labour market or an employer looking to hire that perfect candidate, SkillNet.ca can help.

Users must register for each site within the SkillNet.ca network. Job seekers complete a résumé and employers complete a profile. Okay, so now you're probably asking "How do I know which part of the network to register with?" It's easy. Just go to the site relevant to your career path or, for employers, from where you want to hire candidates. Once registered, job seekers and employers have access to a wide range of tools and services. SkillNet.ca currently has sites serving the following markets, and plans are under way to add additional sites:

- Campus WorkLink for university and college students (**www.campusworklink.com**)

- Apply to Teach Network for teachers (**www.attn.org**)

- Nurses@Work for the nursing sector (**www.nursesatwork.com**)

- JobMart for careers in aviation maintenance (**http://jobmart.camc.ca**)

- Volunteer Opportunities Exchange for the volunteer sector (**www.voe-reb.org**)

- Talent Gallery for the arts and culture sector (**http://talent.culturalhrc.ca**)

- Tourism Work Web for the tourism sector (**http://tourismworkweb.com**)

- CareerPLACE for the Aboriginal community (**www.careerplace.com**)

- MedConnexions for the medical sector (**www.medconnexions.ca**).

Together, these sites and the network have 60,000 employers and more than 300,000 job seekers using the services for recruitment and career needs. Combined, they receive more than 2.8 million page hits each month.

Next time you visit the SkillNet.ca Web site, make sure to bookmark SkillNet.ca Today—SkillNet's exclusive labour market news page. The site features new and informative articles on current trends in the Canadian job market, plus a digest of past articles and features. SkillNet.ca Today posts new articles and information every day as well as longer, in-depth features each week. SkillNet.ca Today is becoming one of the Internet's most popular resources for online information and intelligence on finding a job in Canada.

Be part of the growing number of satisfied job seekers and employers SkillNet.ca has assisted. Check out SkillNet.ca at **http://skillnet.ca**

SKILLNET.CA today
Daily Labour Market News

BROADBAND TECHNOLOGY

Bringing high-speed connectivity to Canadian schools

The Communication Research Centre's latest Virtual Classroom project recently brought new dimensions to the topic of landmines—three dimensions, that is.

With the use of broadband technology, students at three participating schools in Ontario, Newfoundland, and Quebec were able to see each other simultaneously on one screen during several online meetings in the spring 2001 semester.

The first online meeting of participants in the Virtual Classroom landmines project on March 1, 2001, marked the second anniversary of the signing of the Ottawa Convention banning anti-personnel mines. Student participants asked questions of Minister of Foreign Affairs John Manley and other panelists on the role of youth in banning landmines. A teenage Cambodian landmine survivor also participated in the event, providing personal insight into what action should be taken to ban landmines.

Students used this virtual forum several times over the semester to continue discussions on the topic of landmines, to meet with landmine experts from international organizations, and to develop a webzine addressing related issues.

Projects such as these are showing the potential for new technologies in the classroom. The landmines project is part of ongoing research to create broadband-enabled learning environments and applications that help develop collaborative learning skills. In addition, Virtual Classroom projects promote a new, multi-age, multigrade approach to learning, featuring discussions between high school and elementary school students.

For more information on the Virtual Classroom, log on to **www.virtualclassroom.crc.ca**.

How Government Works

K to 12 teachers have a new tool to help them introduce their students to the vast and complex world of Canadian government.

The core of the elementary unit is a series of activities that will enable young students to learn about Canada's system of government. These include research exercises, role playing, databases and time line activities, crosswords and quizzes.

The high school unit gives students the opportunity to learn all about the role of the Prime Minister in Canadian government, the history of the office and the Canadians who have occupied it, and by extension, the functioning of the federal government in Canada.

Discover these great tools and more by visiting the Prime Minister's Web site at **www.pm.gc.ca**.

Winning school sites showcase Canadian communities

Congratulations to the following schools who are winners in the 2000–2001 GrassRoots Communities@ca national competition.

CATEGORY 1: THE WORLD AROUND US

1st place: Willoughby Elementary School, BC
2nd place: Vedder Middle School, BC
3rd place: Barnwell School, AB
Honourable mention: Selkirk Elementary, YU

CATEGORY 2: OUR LIVING PAST

1st place: Calvin Park Public School, ON
2nd place: Crichton Park School, NS
3rd place: Deseronto Public School, ON
Honourable mention: Carcross Community School, YU

CATEGORY 3: OUR CREATIVE SPIRIT

1st place: Laval High School, NF
2nd place: St. Bernard's Primary, NF

CATEGORY 4: THE WAY WE LIVE

1st place: École La Villa des Amis, NB
2nd place: Pinecrest Elementary School, ON
3rd place: Glovertown Academy, NF
Honourable mention:
Discovery Collegiate, NF

Visit the GrassRoots Communities@ca Web site (**www.communities.ca**) to view all of the entries.

Share your ICT success!

There are thousands of ICT success stories in Canada's schools and classrooms… and we want to share them with the rest of the world!

Submit your story to Canada's SchoolNet by filling out the online template at **www.schoolnet.ca/home/e/feedback/success.asp**.

SchoolNet may use your story on its Success Story Page on its Web site, in press releases or in other promotional materials.

To view our latest stories, visit **www.schoolnet.ca/home/e/success_stories**.

Correction

Aileen McIntyre of Courtice Secondary School was incorrectly identified, as was her school, in the article "BADLAB: Expanding the Learning Spectrum" in the fall 2000 issue of *SchoolNet Magazine*.

We sincerely apologize for this error.

Canada's Digital Collections:
The ARTS Unveiled

by Aleksandra Jankovic

Where do you go to find out what *verdigris* or a *frieze* is for an art lesson? What if one of your students needs an image of an Emily Carr painting or a totem pole from British Columbia for a project, but searching the Net is proving difficult?

Canada's Digital Collections has for years now provided teachers, students, researchers and avid arts followers with a vast database of images and information about arts trends, techniques and the history of Canadian art.

- There is a simple and quick way to learn technique and terminology at **http://collections.ic.gc.ca/brault/lexicon.html**.

- For a look at the arts and gender issues, go to Women Artists in Canada (**http://collections.ic.gc.ca/waic**). More than 150 artworks are available in this collection, in addition to sites offering works by Anne Savage and Emily Carr.

- The achievements of the Group of Seven and the glory of the northern landscape are vividly displayed at **http://collections.ic.gc.ca/tom_thomson/g7room.htm**.

- The Oscar Peterson site (**www.nlc-bnc.ca/oscarpeterson**) reveals a life's worth of musical accomplishments and a Canadian's contributions to the world of jazz.

- Finally, if you are planning a trip to Canadian galleries and museums, go to **http://collections.ic.gc.ca/canadiana/Enhigh/content/page4.htm** for information about some of Canada's best known, and smaller, institutions.

Besides these, Canada's Digital Collections offers another 50 sites that are arts-oriented, including ones on the architecture of Moshe Safdie, theatrical costumes from French plays, Inuit carvings and the history of music, all in one of the most successful educational and research-oriented programs. It is a wonderful way to expose your students to the arts in Canada without having to travel anywhere.

Aleksandra Jankovic is a Project Officer with Canada's Digital Collections.