Knowledge and Experience With Project-Based Teaching and Learning

The integration of ICTs has been interwoven throughout my entire career as an educator.

I have been drawn to and completely engaged by the creative, purposeful use of ICTs from the first day that I was exposed to their tremendous potential. From very early on it has been equally clear to me that a constructivist, project/inquiry-based learning approach to integrating ICTs into teaching and learning is the best way to maximize the teaching and learning potential for both students and teachers.

As early as 1980 during my first year of teaching in the community of Eskimo Point, Nunavut I was engaged with my students in collaborative problem-based learning through the exploration of the Logo programming language. During this time, I saw my young Inuit students, whom others had said could not learn basic math facts, let alone relate to mathematics deeply and with meaning as they did through Logo.

In 1983 I began to see the potential of networking computers over phone lines when we linked my computer in Eskimo Point with another computer in Rankin Inlet. In 1984 I connected to an early online educational database called BRS After Dark. This resource allowed me to find pertinent and invaluable educational information from sources such as ERIC.

A few years later I discovered the Internet and the related tools: newsgroups, gophers, lynx browsers and pine e-mail programs.

A few more years later yet, I learned about HTML and something called the World Wide Web with a beta .001 version of a program called Netscape. I immediately saw that this would be an avenue through which my students in a small, geographically isolated Inuit community on the West coast of Hudson Bay, more than a thousand miles away from a largely populated city, could communicate with the world.

On October 23rd, 1993 the Leo Ussak Elementary School Web site went online and saw 50,000 hits in its first year. In fact, at that time, if someone did a Web search for broad terms such as “Arctic”, “Eskimo”, “Inuit”, etc. they would be directed to the Leo Ussak School Web site.

In 1994, I ensured that if our students were able to read and write their names, then they would have their own e-mail accounts through the First Class conferencing system. Later that year, I required all students who could read and write to create their own personal Web pages.

In 1995 I brought in Lego Robotics resources and challenged my students to work in teams to create robots that would solve simple, real-world problems.

My students contributed to The Journey North – Caribou Migration Project from the Annenburg Science Foundation with the help of Keewatin Regional Biologist Robert Mulders. They also completed a Web site for the Northern chapter of the Canadian Cancer Society.

My students wrote the script for, acted in, and filmed a video for the Missouri Botanical Gardens video series that examines the major biomes of the world called “What’s It Like Where You Live?”

That same year, we participated in the Hansen expedition, and our students were fortunate enough to meet Arctic explorer Julie Hansen and her partner Martin Hignall as they traveled from Churchill, Manitoba on their way to Paulatuk, Northwest Territories by dog team.

We also participated in many videoconference projects using a 5 fps black and white Connectix QuickCam and free CU-SeeMe software. One of the most memorable of these events was a live videoconference that we participated in via NASA’s Web TV with Canadian astronaut Dave Williams as he and his astronaut colleagues circled the Earth in the Space Shuttle. This event took our students study of space and their related projects and investigations to a level that would not have been possible without such a real learning experience.

In 1996 my students and I participated in an international project that studied circumpolar pollution. My students were sent snow sampling tools and strict instructions as to how they should complete the
required experiments. As a result of their professional participation in this project, their contributions were duly noted when the project’s research findings were published.

In 1997 my students and I created the “Countdown to Nunavut” project that challenged other students and teachers across Canada and around the world to learn more about the pending creation of Canada’s newest territory and then submit their findings with their solutions to potential problems to the (then) Nunavut Planning Commission.

In 1998 I was asked by Industry Canada to create the "Timecapsule2000 Project", which was recognized by Prime Minster Jean Chretien as one of Canada’s National Millennium projects in front the Canada’s national media at the National Museum of Civilization.

In 1999 I conceived of and my students at Banded Peak School in Bragg Creek, Alberta piloted a new project called "Generations Can Connect" for Canada’s SchoolNet in honour of the United Nations Declaration of 1999 as the "International Year of the Older Persons." This project now has over 10,000 contributions from schools across Canada.

Another of my projects, www.bullying.org, was honoured with the Cable and Wireless ChildNet Award, which goes to projects that make the Internet a better and safer place for children. This project has also been chosen as a finalist in the Stockholm Challenge Awards, an award that goes to outstanding international information technology projects. This project was recently featured on the CTV National News. Peter Mansbridge, national news anchor for CBC Television’s “The National” referred to www.bullying.org as "One of the best Web sites in the world for children". www.bullying.org has typically receives between 500,000 and one million visitors per month and is listed as the number one bullying-referenced Web site in the world by many major search engines.

I have worked on other online projects; www.communitynetworkers.org which challenges online schools to build Web sites with and for local community non-profit groups in honour of the UN's International Year of Volunteers in 2001. I have also created www.netizenship.org, which is a Web site that looks at developing citizenship among the "NET-Generation".

www.childsoldiers.org is another project that I have created in collaboration with iEARN-Sierra Leone that is addressing the issue of the child soldier. This project was given a Childnet International Award in April 0f 2003. Mr. Belsey is working with educators and young people in Sierra Leone on a project to help establish that country’s very first community access centre that will be modeled after Mr. Belsey’s pioneering work in creating the “Igalaaq” CAP site in Rankin Inlet.

I recently launched a new project, www.cyberbullying.ca that is addressing the issue of cyberbullying across Canada and around the world. This is the first Web site in the world to specifically address cyberbullying.

I am the volunteer Executive Director for iEARN-Canada, the International Education and Resource Network (iEARN). iEARN is the world’s largest and most-experienced K-12 network in the world, with over 500,000 teacher and student members in over 100 countries who share iEARN’s vision of “Connecting Youth, Making a Difference!” iEARN has been supporting online collaborative, project/inquiry-based learning through its global network since 1988. I have created a Web page called “The Guide on The Side” In support of other Canadian educators who are also wanting to engage in project/inquiry-based learning, this resource can be found at: http://www.iearn-canada.org/guideontheside.html.

I have also delivered a major presentation called “We’re Wired, Now What?” about project/inquiry-based learning to educators at conferences across Canada and around the world.

I am currently working with the Faculty of Education at the University of Calgary to establish the very first iEARN-Canada Centre for Global Learning. This new centre will help provide leadership and support for Canadian educators who wish to have their schools join iEARN and have their students participate in online, global, collaborative projects that address important issue that make our world a better place in which to live.