

Inquiring Minds



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Lessons for Pre-service Teachers

Galileo provides practical, thought-provoking preparation for pre-service teachers, by developing strategies to bring them into the profession through an inquiry-based approach.

Experienced teachers serve as mentors in study groups, seminars and in other professional and academic activities, while university faculty share their expertise via direct and active participation in support of school improvement. Galileo mentors, teachers, university faculty, and pre-service teachers work as a team to support Kindergarten to Grade 12 student learning.



Creating Inquiry in the Classroom

Designing strong learning tasks while working alongside established educators has been of great value to pre-service teachers' learning – as well as the learning of young students who are working within a Galileo affiliated cohort project.

Dr. Michele Jacobsen worked with 16 student teachers in the Calgary Girls School and the Calgary Science School, which have both enjoyed a long research and professional development relationship with Galileo.

Dr. Jacobsen and student teachers worked collaboratively with administration, classroom teachers and experts from Galileo Educational Network to bring technologically enabled, inquiry-based learning to life for children, contribute to a strong school culture, and to honour the diversity of learners. Case tutorials were held in one of the schools on a rotating basis and partner teachers and school administrators took part on a weekly basis. Student teachers used Intelligence Online (IO)

and GoogleDocs for collaboration, communication and instructional planning. In Grade 4 to 9 classrooms, student teachers used IO to design and implement inquiry-based learning with students. Intelligence Online was used as a discussion and knowledge building space, as well as an instructional design tool, said Jacobsen.

"Intelligence Online is a really information and communication-rich way to mentor student teachers in designing strong inquiry projects for students," she said.

Every student teacher used IO to investigate and to create one or more inquiry-based studies for children. A number of student teachers co-created original inquiry-based studies with partner teachers that they implemented with students. These studies included a Grade 7 science inquiry on Seed Germination and in-home heating, a Grade 6 cross-disciplinary inquiry into Census: Our Living Data,

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Murals, Movies and Stories: The Wild and Free Project

On the surface, it's a simple mural, created by a group of Grade 6 students working on an online study of wild horses and their habitat.

But like the Wild and Free project itself, this mural of a horse is made up of much smaller pieces, which when combined together, contributes to something much more impressive.

The amount of work that has gone into this piece of art – which had 25 students at Senator Riley School in High River working on individual pictures, placed in a certain order to create one large image, was inspiring in itself, said art teacher Kim Hodder.

"The kids were very keen, and they're really proud of it – even parents and other teachers are coming into the classroom because the kids are talking about it," she says.

"Kids are the ones who will one day save these animals, it's up to them."

-Grade 6 Teacher Kim Hodder

With help from a student teacher Hannah Wight, it took about six weeks for the class to complete the mural. The Wild and Free project – which examines the past, present and future of wild horses and their habitat - has been ongoing at Senator Riley since the beginning of the school year.

Students from across Foothills School Division have been working with others from the Stoney Nation, interviewing community members and developing stories, artwork and computer animations, which can be found on an interactive website, at www.galileo.org/initiatives/wildandfree.

Invited guests, such as Bob Henderson, co-founder of WHOAS, The Wild Horses of Alberta Society, have motivated students to find out as much as they can about saving the wild horse, which is threatened throughout the province.

"Kids are the ones who will one day save these animals, it's up to them," says Hodder, who adds the finished mural will have a permanent place of honour in the school's library.

"This is definitely a project I'd do again – the kids were really proud of what they accomplished."

Christi Tims, an art teacher at Oilfields High School, had a similar experience with her students.

"They were looking at different perspectives and seeing different opinions on one issue," she says, noting the Wild and Free project tied into not only the art curriculum, but humanities and science as well.

"It's important for the students to connect to their natural surroundings, as physically, we are very close to the areas where the wild horses roam."

Galileo's Intelligence Online network (<https://www.iomembership.com/>) also played a role in the project, with teachers organizing various lesson plans and activities, while sharing their experiences with others.



Made up of individual wild horse images, this mural was completed by Grade 6 art students working on the Wild and Free project.

Connecting Canadians Online

In the age of Twitter and Facebook, how do young people communicate with relatives from other countries and how do recent immigrants connect with others in their situation? The question is a timely one - gone are the days when newspapers written in the native tongue were the sole means of communication. Today, social networking and other technologies are changing how today's immigrant communities evolve and how they're able to

meld old traditions with their new way of life.

The Connecting Canadians website - <http://galileonetwork.ca/connecting/> - was developed by Galileo, in partnership with the Department of Canadian Heritage through the Canada Culture Online Strategy.

Galileo is working directly with students and teachers to not only create the website itself but more importantly, to combine what's already known about Canada's immigrant populations with new

knowledge and understandings, as it relates to social networking technologies.

Teacher planning resources on the site include how to conduct inquiry-based studies on this topic, as well as tasks and activities for students that tie to the curriculum. Assessment resources to monitor classroom progress can also be found and can be used by educators across Canada.

Suggested activities include having students find old family pictures and digitally superimposing their own image into the old one, presenting an opportunity to tell a new story about their family. Students can also examine their own family histories to gain an appreciation of where they come from and determine where they're going.

An interactive component allows students to post their own comments and ideas, to share with others.



Old pictures and family stories come to life in Connecting Canadians, a new website developed by Galileo Educational Network and the Department of Canadian Heritage.

-photos courtesy
Glenbow Museum.



Technology in the Classroom

Placing a bank of computers in a classroom is only a small step towards accomplishing what education should look like in the 21st Century.

Understanding how to use that technology effectively, by designing learning tasks that are authentic and academically rigorous, is the key. The ability to effectively integrate technology from Kindergarten through Grade 12 is the challenge being posed to the teachers of today and those who will be in front of the classrooms of tomorrow. And it all starts with future educators being equipped with the tools to make it happen.

The Infusing ICT in Core Curricula site, at <http://www.galileo.org/preservice/index.htm>, is designed to address the question of how university faculty and pre-service teachers can have easy access to those on the forefront of integrating Information and Communication Technology (ICT) in classrooms everywhere. The resource is based on the research findings and recommendations of Coming to Teaching in the 21st Century, a research study conducted by Galileo. Findings in that report include:

- The effective integration of ICT is primarily a pedagogical, not a technological issue.

"The ICT curriculum is not intended to stand alone, but rather to be infused with core courses and programs."

-Alberta Education

- Fluency with technology does not automatically translate into the ability to effectively teach with it.
 - Disconnects between campus and practicum experiences with technology impedes the effectiveness of teacher preparation but new approaches to professional development can change this.
 - Changes to conventional teaching approaches and presentational pedagogy yield significant results.
 - There are considerable challenges in terms of technology, its infrastructure and support.
- Keeping these findings in mind, visitors to the site can see for themselves how experienced teachers successfully integrate technology into core courses and programs. Students experience things they've never done before, and it's a learning environment where thought, investigation and exploration is applauded and encouraged. Technology is used to make decisions, solve problems, and collaborate to create new understandings. Other tools on the site include a template for creating a classroom floorplan that achieves ICT goals and assessment tools to improve learning.

Pre-service Teachers Learn with Students

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and a grade 8 humanities inquiry into the Origins of a Western Worldview: Renaissance Europe.

In online discussions about inquiry and technology, student teachers explored many rich ideas.

"It is the sense of having the students fall in love with a topic or making the topic their own," said Tanya McCallum.

"By making it their own, I mean that they are taking ownership, relating the subject to their own life. Heather Miller, a second-year student teacher, said there was a real connection to discipline made throughout the project.

"I believe what really matters about a topic is how that topic lives in the world outside the classroom," she said.

-Submitted by Dr. Michele Jacobsen. In addition to her role as an associate professor at the University of Calgary's Faculty of Education, Dr. Jacobsen was also awarded Galileo's first research fellowship in 1997.

Contact Us:

Galileo Educational Network
Education Tower 602R
2500 University Dr. N.W.
Calgary, AB T2N 1N4
Tel: 403-220-8942
galileo@ucalgary.ca



galileo.org
educational network