

Partnering for Northern Digital Literacy

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Digital Need and Opportunity in the NWT

Communities in the western Arctic can now connect to high-speed digital infrastructure – a situation that provides both opportunities and challenges for residents of the Northwest Territories (NWT).

The completion of the long-anticipated Mackenzie Valley Fibre Link (MVFL) in June 2017 and forthcoming plans to build a redundant fibre link along the Dempster Highway (estimated to be operational in 2021) will improve backhaul connectivity between these regions and Internet exchanges in the south.

But despite these improvements, local connectivity remains limited and unreliable in most NWT communities, with high prices charged for services and data coverage. As noted by the Canadian Radio-television and Telecommunications Commission (CRTC), almost half of households in NWT lack access to broadband (as defined by the Commission as 50Mbps download/10 Mbps upload), pricing and quality of service do not match standards in southern Canada (CRTC 2017: 284).

These challenges reflect what O'Donnell and Beaton (2018) call the paradox of

telecommunications for service delivery – northern communities have the greatest need for telecommunication services, but have the greatest barriers to delivering these services.

Recognizing that digital technologies are being deployed rapidly throughout the NWT, including the Gwich'in Settlement Area, our project takes a critical and participatory approach to explore how digital literacy resources are developed and used by communities.

Digital literacy is defined as:

The range of knowledge, skills, and behaviours used with digital devices such as smartphones, tablets, laptops and desktop computers. This term includes the ability to locate, organize, understand, evaluate, and analyze information using digital technology. It involves a working knowledge of current digital technologies and an understanding of how they can be used effectively (Beaton et al., 2016, p.9).

Through a collaborative development process that began in spring 2017, our team has worked to explore innovation in Gwich'in contexts through workshops and the creation of open educational resources that focus on the development, sustainability, and use of digital technologies.

The 2017 Pilot

We developed and hosted a day-long pilot workshop in Inuvik that involved Gwich'in community members in the co-development of appropriate digital literacy resources.

A total of 19 people participated in the workshop, including youth who travelled by road and plane from four Gwich'in communities: Teet'lit Zheh (Fort McPherson), Tsiigehtchic, Aklavik and Inuvik. Participants from Inuvialuit and non-Indigenous communities also joined as delegates.

Content included:

- Ways to archive, share, preserve, digitized Indigenous Knowledge
- Introduction to digital content and GTC activities
- Introduction to broadband in the North, Mackenzie Fibre Link
- What are the benefits and challenges associated with digital content and connectivity?

Need was expressed for more workshops and more content in the GSA.

The 2018 Workshops

Building on the 2017 Pilot, we returned in June of 2018 for a series of three 2-day workshops held in three of four of the Gwich'in communities: Teet'lit Zheh (Fort McPherson), Aklavik and Inuvik.

The goals for the project were:

- Share knowledge about new digital technologies
- Explore links between digital content and digital connectivity
- Discuss digital content and digital connectivity in the Northwest Territories (NWT)
- Highlight northern digital innovators
- Expanding on the 2017 pilot curriculum a new set of learning objectives was created for participants

By the end of this course participants should be able to:

- Identify key elements of digital content and digital connectivity and how they work together to form northern broadband systems
- Identify supports and barriers to digital content and digital connectivity in northern communities
- Discuss the role of community engagement in digital innovations
- Create unique digital content and illustrate its many applications
- Build a tabletop model for a community broadband network

- Recognize your digital rights and know how to employ them
- Identify resources for further learning and possible career paths
- Learn about and participate in a community of Indigenous digital innovators

Active learning approaches were central throughout the workshops with content on a variety of subjects from testing one's internet speed, examining how and where to make complaints about service or extracting metadata from pictures.

Two activities in particular were designed to explore the key concepts of content and connectivity.

For content a "Lifecycles of a Digital Photograph" exercise was employed that saw participants take images, load them into a content management system Murkurtu, explore copyright and open licensing ideas and discuss how traditional knowledge labels from Local Contexts could be applied.

For connectivity the team developed a 3D peg board game ("Make the Net-Work") using 3D printed pieces and walking participants through the considerations in both wireless and wired networks. Specifically, participants had the opportunity to build their own network linking the 3D printed pieces on maps of their community with yarn serving as the 'wired' infrastructure. Several examples of local Gwich'in digital innovators were also highlighted throughout the two day workshops.

The GTC Workbook

Recognizing the need for more than just the workshops, the team undertook the creation of a now nearly finalized set of student and facilitator workbooks. The student workbook contains numerous vignettes highlighting local innovators from the NWT, exercises for self-directed learning, and a wealth of content and resources from the workshop. The workbook text was also made available under an open licence to permit further adaptation either within our outside of the GSA.

Future work will aim to expand and revise both the workshops and workbooks, hopefully with the ability to reach more communities in the NWT.

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