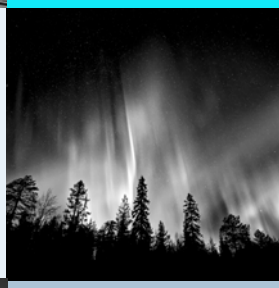
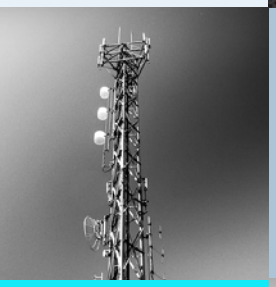
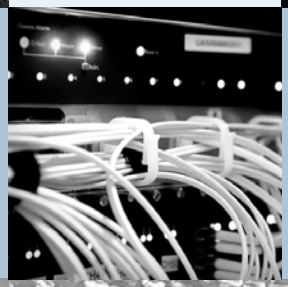
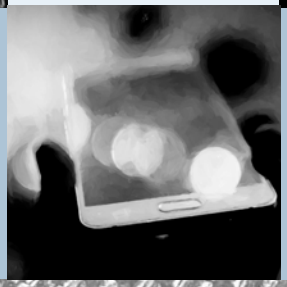
Eetsii tthak t'agwahii getr'ootanahchàh

(Learning About the Machine that Does It All)









Digital Content and Connectivity with Dinjii Zhuh Contexts

Facilitator Handbook

Acknowledgements

The University of Alberta, in partnership with the Gwich'in Tribal Council (GTC), is pleased to provide this learning resource, which was developed to accompany digital literacy pilot workshops that we facilitated and delivered in June 2017 and 2018 on the traditional territories of the Dinjii Zhuh (Gwich'in peoples) and Inuvialuit nations. We acknowledge the significance of Treaty 11 (1921), Inuvialuit Final Agreement (1984), and Gwich'in Comprehensive Land Claim Agreement (1992).

We recognize the moral, intellectual, and cultural rights of Dinjii Zhuh and Inuvialuit as the sole owners of their knowledge, including (but not limited to):

- Cultural heritage objects
- Scientific, technical, and ecological knowledge
- Documentation of local Indigenous knowledge in all forms
- Literary and artistic works

This is a joint project between the GTC and the University of Alberta's Faculties of Extension and Education. It was made possible through funding support from the Canadian Internet Registration Authority's Community Investment Program (CIRA). We also received travel support for our June 2018 workshops from the Government of the Northwest Territories Department of Education, Culture & Employment. The GTC also provided support for this project.

This learning resource was jointly developed by the project team:

Dr. Rob McMahon, Associate Professor, Master of Arts in Communications and Technology Program, Faculty of Extension, University of Alberta
Dr. Michael B. McNally, Associate Professor, School of Library and Information Studies, Faculty of Education, University of Alberta
Crystal Gail Fraser, PhD Candidate and Contract Instructor, Department of History & Classics, University of Alberta
Hanne Pearce, MLIS and MA in Communications & Technology, University of Alberta
Trish Fontaine, MA in Communications & Technology, Program Coordinator, UAlberta North

We are pleased to have worked closely with the GTC on developing this curriculum. Many thanks to Carolyn Lennie, Tony Devlin, Suraj Chhetri, and other GTC staff for your continued support and direction. The project could not have taken place without the strong support and involvement of GTC staff during the conception, planning, and implementation of our June 2017 pilot project and the follow-up workshops in 2018. Special thanks to Sharon Snowshoe, Alestine Andre, and Ingrid Kritsch. Hąį' choo to Agnes Mitchell for providing a translation of the project name and land acknowledgement into Dinjii Zhuh Ginjik (Gwich'in language). We thank UAlberta North for planning, funding, and on-site staffing support for the workshops and related activities.

A special hąį' choo to those who expressed an interest in our project. Tania Larsson, Jacey Firth-Hagen, Kristian Binder, Dennis Allen, Angela Koe, and Annie Buckle have provided new insights into the digital innovations and challenges in the North. We are honoured to share their stories in this publication. We also thank our workshop participants, who provided helpful feedback that supported the development and improvement of these resources.

We thank Dr. Ali Shiri (School of Library and Information Studies, University of Alberta) and Lyle Fabian, Katlotech Communications Ltd. for providing webinars about **digital content** and **digital connectivity** in the North during the lead-up to the June 2018 workshops. Links to recordings of these webinars are available in this workbook.

We also thank the following individuals for contributing their expertise on different aspects of digital content/connectivity:

- Sharon Farnel, University of Alberta (Metadata advice, sharing her knowledge of decolonizing description/metadata)
- Michael Wynne, Washington State University (Mukurtu Indigenous content management system)
- Dr. Jane Andersen, New York University (Local Contexts; Intellectual property and Indigenous peoples)
- Catherine Bell, University of Alberta (Intellectual property, intangible cultural heritage and Indigenous peoples)
- First Nations Information Governance Centre (OCAP® principles)
- Students of the Winter 2018 LIS 598 Information Policy Class, University of Alberta (Pilot testing 'Make the net-work' guided learning exercise)

A summary article about this project is published in Northern Public Affairs.[1]

Graphic design and layout of this handbook, including cover, is by Hanne Pearce.

ISBN 978-1-7750507-5-9

1 Link: http://www.northernpublicaffairs.ca/index/volume-6-special-issue-2-connectivity-in-northern-indigenous-communities/exploring-digital-literacy-learning-with-the-gwichin-tribal-council/
2 Link: https://creativecommons.org/licenses/by-nc/4.0/

Table of Contents

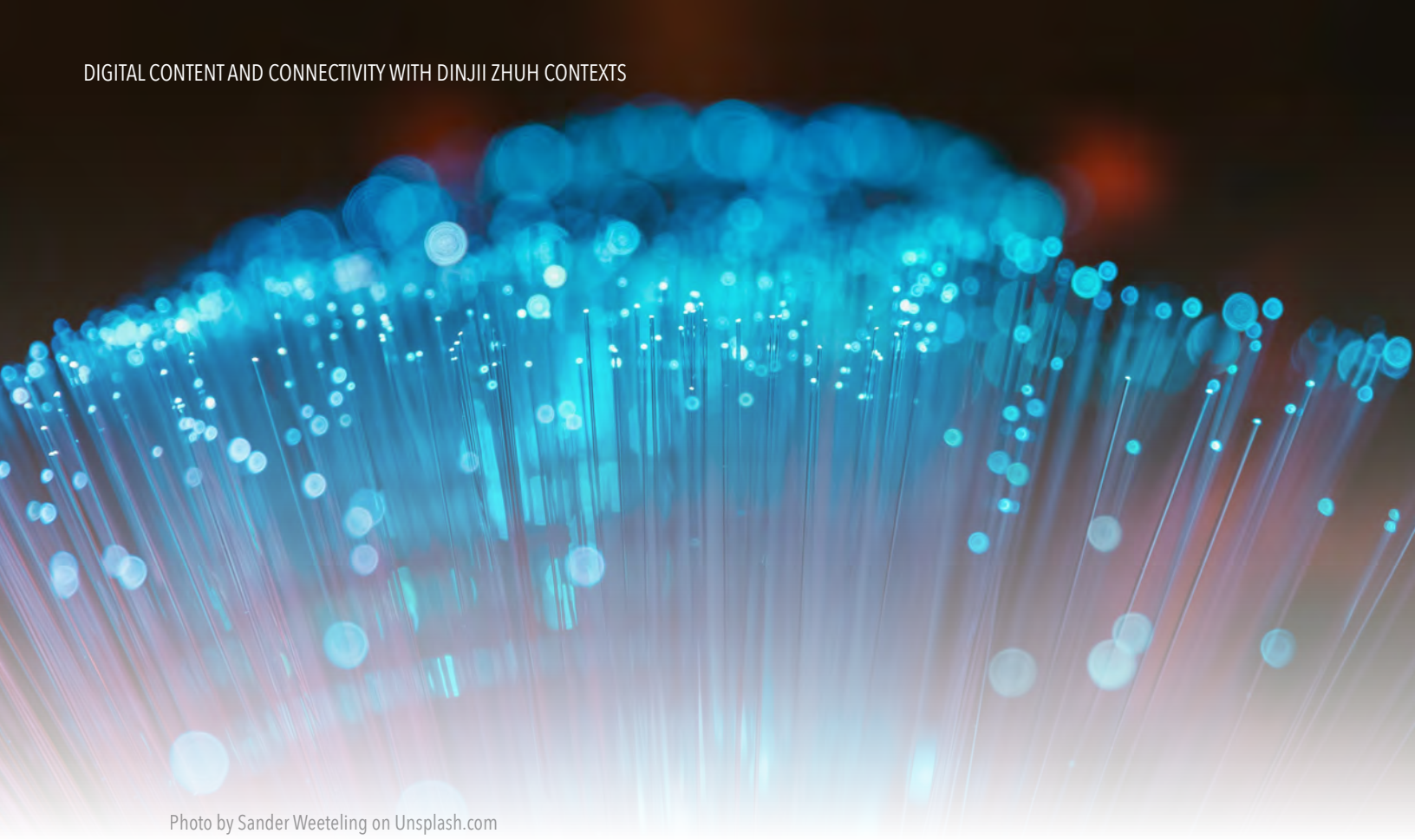


Photo by Sander Weeteling on Unsplash.com

Introduction: Instructor Handbook

This Instructor Handbook is intended to work hand-in-hand with the participant workbook as a guide for directing discussions and activities of this two-day (12-hour) Digital Literacy short course. This Handbook explains the intent of each part of the student workbook, suggests discussion points, and highlights activities and important things to note.

As a facilitator, you will provide student participants with a hands-on introduction to digital content and connectivity in Northern Canada. Through an interactive learning process, you will provide examples of digital innovations taking place in Gwich'in and NWT communities, and resources that can support community-based technology development projects.

The workbook aims to accomplish the following goals:

- Share knowledge about new digital technologies
- Explore links between digital content and connectivity
- Discuss digital content and connectivity in the Northwest Territories
- Highlight northern digital innovators

This material provides students with an introduction to digital technology (content and connectivity) and digital rights - all in the unique context of the Dinjii Zhuh and other NWT communities. It covers some of the benefits and challenges that arise alongside the development and use of emergent digital technologies in the North.

This material is meant to stimulate interest in digital technologies, and so ends with a section about additional resources and supports for people who want to pursue further work or study.

Course Objectives

By the end of this workbook, 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 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

Approach to the Material

This learning material takes an interactive, hands-on approach to learning about digital content and connectivity. Above all, we want it to become a way to explore appropriate and useful ways to learn about and discuss digital literacy. We want to hear about topics to cover, activities to do, and innovative projects that Dinjii Zhuh peoples are working on. We hope you enjoy this resource!

Sections in the Instructor Handbook

This handbook is organized according to the following sections:

1) Module introduction
2) Learning outcomes
3) Summary of module content
4) Discussion questions (the student handbook has spaces for participants to write answers)
5) Workshop activities (these are accompanied with Activity Materials)
6) Video summary and link

You will notice that the student workbook has quite a bit of content that is not covered here. Specifically, the interviews with and examples of Northern innovators are not included here. Please highlight these stories as you are going through this resource, and point them out to participants as activities and initiatives to celebrate!

Materials

- Digital Content and Connectivity With Dinjii Zhuh Contexts: Facilitator Handbook
- Digital Content and Connectivity With Dinjii Zhuh Contexts: Student Workbook
- Activity Materials: Lifecycles of a Digital Photograph
- Activity Materials: "Make the Net-Work" Community Broadband Guided Learning Exercise

For More Information

If you have questions or feedback about these materials, please email us at: DigitalNWT@ualberta.ca
Our website is located at: http://www.digitalNWT.ca

Two-Day Short Course: Schedule At-a-Glance

Day One: Digital Content	Topics and Activities
6 hours = 3 modules (content, examples, discussion questions, activities) Main goal: Introduction to digital content in Dinjii Zhuh contexts	
Module 1: Introduction to Digital Content	Digital content vs. analogue content How we create and use digital content Digital innovations: digital content Lifecycles of a Digital Photograph: Let's create a digital object
Module 2a: Organizing Digital Content I	Introducing Metadata Documenting and organizing digital content Lifecycles of a Digital Photograph: Apply metadata to your digital object
LUNCH BREAK	
Module 2b: Organizing Digital Content II	Supports and barriers to archiving and preserving digital content Digital innovations: Digital Libraries Lifecycles of a Digital Photograph: Add your content to a digital library
Module 3: Protecting Digital Content	Appropriation and appreciation of digital content Copyright and Indigenous cultural rights Digital innovations: OCAP Principles and TK Licenses Lifecycles of a Digital Photograph: Assign access rules to your digital object
Day Two: Digital Connectivity	
6 hours = 3 modules (content, examples, discussion questions, activities) Main goal: Introduction to broadband connectivity in Dinjii Zhuh contexts	
Module 4: Using Broadband	What are broadband benefits and challenges for your community? Identify local broadband users: anchor tenants, households, businesses Identify community assets and challenges Make the Net-Work: Intro to community broadband (assets / challenges)
Module 5a: Broadband Technologies I	Broadband technologies: wireless vs wired Local/backbone networks Make the Net-Work: Building a broadband network
LUNCH BREAK	
Module 5b: Broadband Technologies II	Demand aggregation, wholesale, open access Regional and local broadband infrastructure Make the Net-Work: Considerations for network design
Module 6: Sustaining Broadband	Indicators of broadband service: speed, data caps, affordability Testing and reporting broadband issues Make the Net-Work: Assessing speed, affordability, quality of service
Module 7: Conclusion and Resources	Educational resources Training opportunities

DAY 1 (Digital Content)

Module 1: Introduction to Digital Content

(2 hours)

Introduction
The first module provides an introduction to digital content. The first thing you should note is that students already work with digital content (and connectivity) - every day, in many different ways, at home and at work. While we hope that this course will show them some new terms, concepts and uses related to digital content and connectivity, chances are much of it will feel familiar.

Digital technologies, as we will explore here, take a range of forms. They include social media sites like Facebook and Instagram. They include mobile phones, computers, laptops and tablets. They are reflected in the websites we visit and the different types of digital data used in health care, education, culture and language, and economic development. In this workbook, we will take a closer look at these different applications, devices, and uses of digital content and connectivity.

At the same time, we want the students to take a critical view of emerging digital technologies, and how they impact our lives and communities in positive and negative ways. Much of this workbook is designed to demystify technology - to unpack how it works and what it means. Technology can be developed and used in many different ways. It is not neutral - there are many choices and decisions that go into the development and use of technology. To consider these aspects of how digital technology impacts our lives, ask students to think about:

- One thing they like about digital technology
- One of their concerns about digital technology

Now, think about the broader impacts of these positive and negative aspects of digital technology. They have brought up personal thoughts - but ask them to think about how these things affect their family, friends and colleagues, community, and the entire North. Very quickly, it becomes apparent how digital technology has deep impacts on our relationships and societies.

These kinds of questions about the uses, impacts, challenges and potential of digital technologies are the focus of digital literacy learning. When we talk about digital literacy in this workbook, we mean:

"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" (FMCC, 2016, p.9).

The following readings, activities and examples are all designed to explore digital literacy in the context of Dinjii Zhuh (Gwich'in) people. We will look at the different ways that Dinjii Zhuh and other Indigenous and non-Indigenous northerners have taken ownership and control of digital technologies. Northern and Arctic innovation is an emerging area that combines the commitment and ingenuity of Northern peoples with the development and use of emerging digital resources.

We invite the students to learn more about these projects, and to share their own stories and examples of northern digital innovation with us. We are very interested in hearing about:

- Their experiences, interests and challenges with digital technologies.
- Uses of digital technologies – for culture and language, business development, politics and governance, health care, education, and even things like event planning or information management (reports, meeting minutes, records).
- Improving these resources (workbook and workshop) – encourage them to send us ideas, challenges, and/or technical words that we should spend more time on.

Students can send us thoughts and ideas by email: DigitalNWT@ualberta.ca

Learning Outcomes

- Review the history and present contexts of Northern communications, with a focus on Dinjii Zhuh oral culture and media
- Identify digital content and describe how it is different from analogue content
- Demonstrate how analogue content can become digital
- Explain how digitizing content changes the nature of the content
- Describe the infrastructure required to create and effectively use digital content
- Create unique digital content and illustrate its many applications

Module Content

A Short History of Dinjii Zhuh Story Telling and Media - Provides students with an introduction to the long history of Dinjii Zhuh innovation in communications and media.

Digital Content in the North - Digital Innovators and Communications Organizations - Introduces students to some of the Northern-based individuals and organizations working in the area of digital media and communications today.

Digital Content vs. Analogue Content - Familiarizes participants with both digital and analogue content. Introduces how it is created.

Photo by Eric Lucatero on Unsplash.com

Photo by Anna Auza on Unsplash.com

Discussion Questions: Northern and Indigenous Innovators

Can you think of other digital innovators or digital organizations in the North?

What are some of the ways that you can use digital content at work? At home?

What are the benefits of digital content at home or at your place of employment?

What are some potential challenges or problems with digital content?

What is Digital Content? - Introduces digital content, with examples.

WORKSHOP ACTIVITY: Lifecycles of a Digital Photograph

Introduce the Day 1 Workshop activity: Lifecycles of a Digital Object

You will guide students through this activity. This workbook contains general information about this hands-on exercise, which consists of 10 steps that participants can work through to build their own digital library.

This activity is designed to familiarize participants with digital objects and how they can be uploaded to the internet and arranged in a digital library for sharing and preservation.

Along with providing a hands-on introduction to digital content, the activity will demonstrate approaches to content management and what metadata is (and why it is important). It will also cover issues about copyright and intellectual property.

Step 1: Let's Create a Digital Object

Work with participants to pick a location and subject. Ask them to think about what they might like to take a picture of. Talk through some ideas.

Tell participants to ensure their mobile device has enough space for a few photos.

Go out and capture a few photos.

Step 2: Saving Your Digital Object to Your Computer

Once participants have finished taking photos, ask them to email their digital photo to your email address, so that they can be added to the practise computers here.

When you have received the email, save their photos to a folder on your computer, which you can easily access later to add the photo file to the Mukurtu digital library.

Formats:
Types of Digital Content - Covers two main types of digital content: content 'born digital' and content created from non-digital content through the use of a special device like a scanner.

How Do We Make Content Digital? - Introduces how we can use devices to create digital content.

Digitizing Techniques - Explains some of the different ways that the digitization process takes place.

VIDEO: Optical scan technology
Optical scan technology is helping researchers at the University of California (UC), Berkeley, preserve audio of 78 Indigenous languages in California, most of which were recorded more than a century ago.
LINK: https://www.youtube.com/watch?v=H6AqEppqUDA

What is Needed to Support Digital Content? - Introduces the infrastructure of devices, people, and networks that are involved in creating, sharing and storing digital content.

Discussion Questions: Making Content Digital

How is digital content different from non-digital content?

What are some of the benefits of digitizing content in your home at your place of employment?

How about on the land? At fish or whale camp?

What are some of the devices (resources, tools or supports) that you need to digitize content?

What are some of the challenges or problems with using these devices to digitize content?

WORKSHOP ACTIVITY: Lifecycles of a Digital Photograph

Step 3: Viewing Device-Driven Metadata

Along with capturing and storing digital content, our devices can tell us a lot about that data. In fact, our devices capture a lot of information about our digital content - as well as other activities. It is important to be aware of the kind of information that our devices are collecting.

This activity is designed to introduce metadata - which we discuss later as 'information about information'. Metadata is very useful in organizing and managing your digital content.

As an introduction to this concept, let's take a look at the information that is stored on a device about the digital content that users create. This 'device-driven metadata' is automatically captured or embedded in digital objects such as photographs.

Most technology designed to capture content in digital formats will automatically save information called "metadata". This type of metadata is embedded within the digital object. Anyone can find it if they have the object (or a copy of it) saved on their computer.

Now that you have taken your digital photo and moved it to a computer, you can easily view this device-driven metadata. Follow the steps in the activity worksheet to demonstrate how to view this kind of metadata.

Image Metadata from Mac Computer

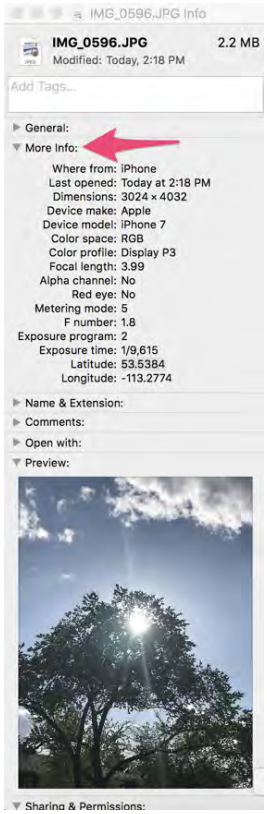


Image Metadata from PC Computer

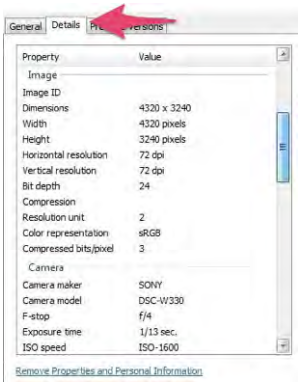


Photo By galymzhan-abdugalimov on Unsplash.com

Discussion Questions: Device-Driven Metadata

What kind of information is 'embedded' in your digital object?

What are some of the benefits of knowing this information about your digital object?

What might be a negative result of the device collecting this information?

Module 2: Organizing Digital Content

(1 hour + lunch break + 1 hour)

Introduction
In Module 1 we introduced digital content. Through the activity steps, students created and saved a digital object (photograph). Once physical and analog artefacts are digitized, the next step is to consider how they will be organized, accessed and used.

As covered earlier, digital content requires the use of some form of technology to access and make use of it; for example a digital photo must be viewed on a monitor or tablet screen.

Digital content also needs to be organized so it can be easily found. This second module looks at how students can organize digital content using resources such as website access rules and metadata.

This work requires careful planning and consideration of how digital content will be organized and accessed. One way to think through this planning is through website access rules. We will cover some of the 'back-end' and 'front-end' considerations that people and organizations think about when they are building a website, which illustrate different ways to protect and share digital content.

The device-driven metadata activity provided an introduction to metadata. In this module, we go into more detail. When used effectively, metadata can be a powerful way to organize, share and apply digital content in a range of contexts.

After an introduction of how digitizing content changes it, we consider some of the ways that people and organizations have figured out ways to control and share the digital content they have created.

Learning Outcomes

- Describe how digital content is organized
- Discuss what 'metadata' and 'website access rules' are and why they are important
- Identify useful forms of metadata (name, subject, descriptive, geographic tags)
- Apply useful metadata to your digital content
- Explain the value of documenting, organizing, archiving and preserving digital content
- Describe the infrastructure required to effectively organize, archive and preserve digital content
- Discuss barriers to archiving and preservation

Module Content

Digitizing Content Changes the Content - Demonstrate how digitizing content changes it in many ways. Provide an introduction to different things people can do with digital content (create; remix; mash-up; share; search/retrieve; store; organize; preserve; destroy/delete). Point out how digitizing content can have both positive and negative effects.

VIDEO: The Machine is Us/ing Us
A short video explaining some of the ways that digital content helps us create and connect with one another. The video was created by Dr. Michael Wesch, an Associate Professor at Kansas State University:

The Machine is Us/ing Us
https://www.youtube.com/watch?v=NLlGopyXT_g

How is Digital Content Organized? - Once physical and analog objects are digitized, the next step is to consider how they will be accessed and used. Discuss how digital content needs to be organized so it can be easily found - and how this process involves careful planning and consideration.

Website Access Rules: Front-end and Back-end of Websites - Use the concept of stores to discuss websites. Like stores, websites house and organize things, and present different perspectives to view those things. The front-end of both websites and stores is the public-facing side of these organizations. It is carefully organized and presented for a broad audience.

The back-end of websites are like the warehouses storing the things that will later be arranged at the storefront. This part of a store is not designed for the public, and often houses many more things than are available at a store. Importantly, the owners of a store will think carefully about the content at the back-end before it is placed in the front-end - they have control over how and why they want to display it to the public.

Think about how different tools help us manage and organize digital content in ways that separate public from private information. Specifically, think about three key elements in the back-end (private) part of a website: Object; Record; and Database/Catalogue.

Mukurtu Digital Library: Plateau Peoples Web Portal - Use the Plateau Peoples Web Portal as an example of the front-end (public) part of a website. This Portal was created using Mukurtu, a freely available and open-source digital library system designed by and for Indigenous communities. We are using Mukurtu in this workshop as a tool to demonstrate and learn about how digital content can be organized, shared, and preserved in a digital library.

Introducing Metadata: Why Should I Care? - Examine metadata as another resource we can use to organize our digital objects. Digital objects have a number of helpful design features; one is the ability to embed them with information. This metadata allows for much easier ways to organize and search for the digital objects we need. Metadata applies to the record (information about objects).

Discussion Question: Metadata

> What kind of metadata might be important to record for digital content at home or at Work?

Types of Metadata - There are many different types of metadata to help us organize our digital objects. Introduce two main types: Subject and Objective metadata.

Discussion Questions: Types of Metadata

> What might be some of the problems with using just one type of metadata?
>
> Can you think of an example from TV, radio or online media that included incorrect information about something?

WORKSHOP ACTIVITY: Let's do a subject metadata activity.

Ask participants to look at the photos below, and write down what each photo is about.

Then ask them to show the photos to a friend and ask them to do the same (without looking at answers).




Photos Keith Billington-GTC-DCH

Did everyone get the same results?

This activity demonstrates that subject metadata is, indeed, a very subjective perception that means different things for different people. For this reason, most digital libraries adopt standards to make their metadata consistent.

WORKSHOP ACTIVITY: Lifecycles of a Digital Photograph

Step 4: Uploading the digital object into Murkurtu

At this point, we have captured and created digital objects, uploaded our images to a computer, and added them to the Mukurtu digital library. We will now start building a public record that will describe this image in our digital library.

This activity allows you to add more information about your photo for the archive. Metadata consists of more than the technical information associated with your digital object. It also tells us important details. These include:

- A title or name for the image
- The protocol category this image belongs to
- Identifying any people in the image
- Adding some keywords that can help locate the image in the image bank

Now that you know a little about metadata and differences between descriptive metadata and subject metadata, you are ready to start applying public metadata in Mukurtu. Mukurtu allows you to add different types of metadata:

Title	Creator	Type	Subject
Category	Original Date	Language	People

Note: The user can set this information so it is only viewable/accessible to him/her (ie. not publicly viewable).

The Gwich'in Tribal Council's Management of Metadata - Introduce GTC's Department of Cultural Heritage, and the process it developed to guide collaborations between Gwich'in communities, Gwich'in institutions, and qualified research teams.

Discussion Questions: Subjective and Objective Metadata

What kinds of metadata are important to record for digital content at work?

What are some problems with using just one type of standard for metadata?

How can we solve them?

***** LUNCH BREAK *****

Presenting, Archiving and Preserving Content - Introduction to these three key elements of digital

content management.

Digital Innovations: Digital Libraries - Introduction to digital libraries and issues related to the archiving and preservation of digital content. With reference to our website access rules diagram, this discussion relates to the 'database / catalogue' aspects.

Examples of Digital Libraries - Provide examples of digital libraries, which are collections of digital content online.

Archiving and Preservation - Discuss how digital content continues to evolve as new technologies and methods of encoding information are discovered. The storage devices and file types we used 10-15 years ago are already obsolete.

Thunder in Our Voices: An Example of an Online Archive - Provide an example of an older media that has been digitized and made available online.

Barriers to Archiving and Preservation - Despite the many benefits of using tools to capture, store and organize digital content, there are several barriers to this archiving and preservation activities. Introduce examples of these barriers: Obsolescence, Redundancy, and Lack of (or expensive), bandwidth.

Discussion Questions: Archiving and Preservation

What might be some challenges for preserving digital content for the future?

What kinds of digital content might communities want to preserve?

How can Gwich'in knowledge be housed and protected appropriately online?

Module 3: Protecting Digital Content

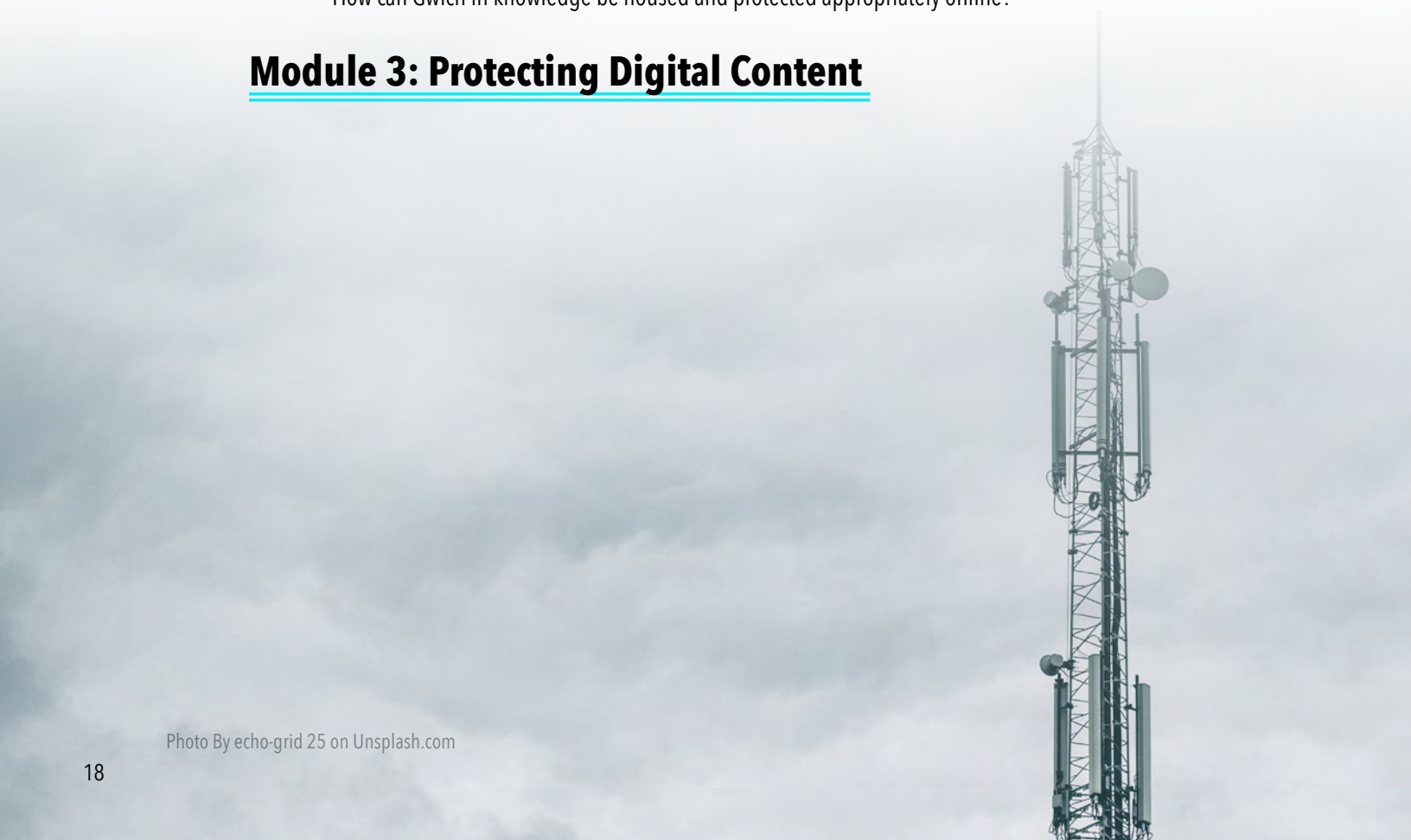


Photo By echo-grid 25 on Unsplash.com

Photo by ashirova0 on Pixabay

(2 hours)

Introduction

When creating stories based in Indigenous cultures, there is a risk of appropriation. Cultural appropriation is when one culture takes material from another culture for their own purposes or benefit, frequently losing the cultural materials' context or significance in the process. When using cultural material from another culture there is a risk of disregarding sacredness and meaning, such as wearing a headdress to a concert. Other cultural appropriation may reinforce stereotypes, as seen in halloween costumes.

Often there is a power imbalance where the culture being appropriated is at risk of exploitation. With cultural appropriation, persons with greater privilege may benefit from cultural elements that are or were prohibited or penalized for persons in more marginalized cultures. Non-Indigenous people may profit from making and selling dream catchers or other other cultural items without the right context or teachings, and Indigenous people may be discriminated against for practicing their own cultures. Co-creating stories with storytellers, knowledge keepers and Elders will help ensure cultural material is not shared inappropriately or without consent.
Cultural appropriation is a complex and controversial topic. Take time to consider where your own opinions lie on using materials from other cultures, and why you have those beliefs or opinions.

Learning outcomes

- Discuss the differences between appropriation and appreciation of digital content
- Describe how copyright, Indigenous cultural rights, privacy, and preservation can help you manage digital content
- Identify different ways to manage and protect digital content (cultural / technical / legal / educational / commercial)
- Introduce Indigenous knowledge-sharing protocols
- Identify technical supports to content management and protection: access rules
- Introduce Creative Commons and Traditional Knowledge Licenses

Module Content

VIDEO: Cultural Appropriation v.s. Cultural Appreciation

Rosanna Deerchild with CBC's Unreserved talks about halloween costumes and the difference between cultural appropriation and cultural appreciation.

LINK: https://www.facebook.com/%20cbcunreserved/videos/1302918419732348/

Who owns digital content? - Introduction to issues of ownership and control of digital content.

Tools to Manage and Protect Digital Content - Overview of key tools that can be used to protect digital content, including: legal rules; cultural rules and knowledge-sharing protocols; technical rules; educational rules; and commercial rules.

Legal Rules: Copyright (and its Alternatives) - Covers copyright and its limitations, and some of the alternatives that have been developed, such as Creative Commons.

WORKSHOP ACTIVITY: Can you use it?

You will need a small store of objects and physical artefacts. They should clearly be marked with either copyright dates, the dates of an author's death or CC markings.

Form groups of 2-3 participants.

Provide participants with materials and allow them to explore them. Encourage them to decide whether they fall in the copyrighted, public or open access domain.

Authors, Publishers, Employers, and "Rights Holders" - Overview of the distinctions between different types of copyright holders, and their rights with respect to ownership and access.

Discussion Questions: Copyright (and its Alternatives)

How do authors benefit from copyright?

How is copyright problematic in terms of community content? For example, cultural/ Indigenous knowledge?

How can we address this challenge?

How might copyright of Dinjii Zhuh or local digital content support local jobs?

What might be the benefit of making some Dinjii Zhuh content available by Creative Commons?

Copyright and Indigenous Cultural Rights - Discussion of the limitations of copyright in the context of Indigenous societies.

Dr. Marie Battiste in Indigenous Knowledge: Foundations for First Nations - quote from Dr. Battiste regarding the limitations of copyright, and things to consider with respect to ownership of and access to Indigenous Knowledge.

Cultural rules and knowledge-sharing protocols - Introduction to Indigenous forms of protection of cultural content, and links to digital content. Introduce students to Indigenous Data Sovereignty and OCAP™ principles.

VIDEO: Understanding the First Nations Principles of OCAP™: Our Road Map to Information Governance

First Nation peoples have always understood the need to protect our natural resources, and increasingly one of our most important resources today is information.

Information is about more than numbers and surveys: it's also about identity, heritage, and the right to self-determination. That's why the First Nations Information Governance Center (FNIGC) was created nearly 20 years ago.

FNIGC's mission is to uphold the First Nations principles of OCAP™ a set of guidelines that ensure First Nations people are the stewards of their own information -- and that they have the power to own, protect and control how their information is used.

This six-minute video explains FNIGC's mission, provides an overview of its work and explores the

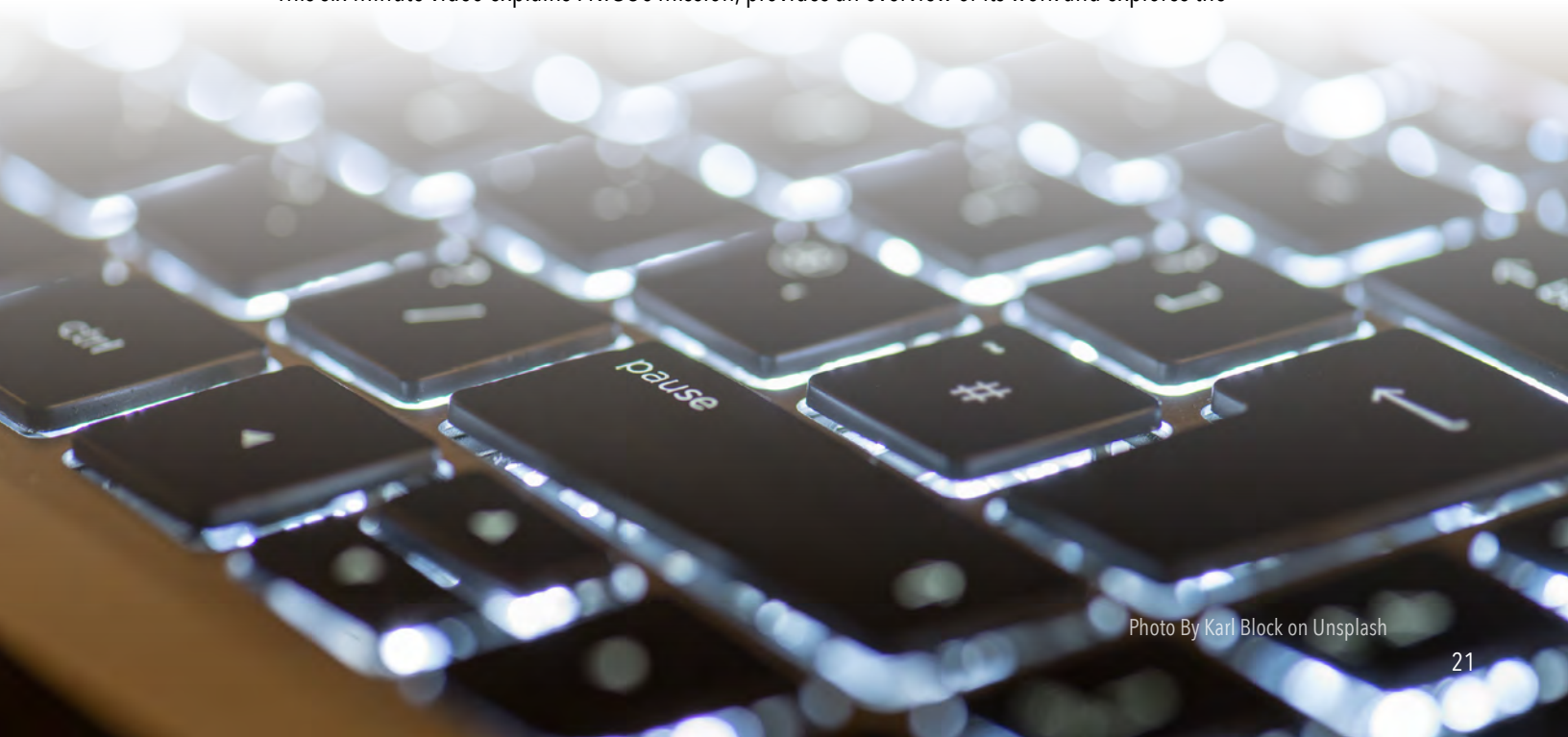


Photo By Karl Block on Unsplash

importance of OCAP™ for First Nations people and communities.

LINK: https://www.youtube.com/watch?v=y32aUFVfCM0

Technical rules: Mukurtu - Overview of Mukurtu, a content management system designed to support Indigenous control over access rights to digital content.

WORKSHOP ACTIVITY: Lifecycles of a Digital Photograph

Step 6: Communities and Protocols in Mukurtu (Step 6)

Digital Libraries and archives typically group items in special ways to make digital items easier to search and discover. Mukurtu uses special groups called COMMUNITIES to organize content into categories in cultural or geographical communities. Your workshop facilitator will create groups for the Dinjii Zhuh communities.

Mukurtu also has a unique feature that other digital libraries do not - PROTOCOLS. PROTOCOLS enable communities building a digital library to put controls on who can see certain items. They can set these viewing protocols based on rules like traditions or beliefs. For example, traditional knowledge in some nations restricts certain knowledge to just one gender or to just a family or community. For the purposes of the workshop we will only use an OPEN and a CLOSED protocol.

Community - Mukurtu allows you to select which community collection your image belongs to. You can add it to several communities or restrict it to just one.

Protocol - Once you have selected a community, the protocol menu will update to provide more options - you can set rules to determine who can find it and view it in the image bank.

If you were building a public digital library, you would have to consider carefully what protocols to use. You might ask questions like:

Who do I want to be able to see this image (gender, age, community, etc.)?

What time of day, week, month or year should this image be able to be viewed?

Should I apply any cultural protocols to control how people may view the image?

A unique feature of Mukurtu is that it provides the ability to write rich metadata records. Rich metadata describes community and cultural narratives associated with a digital object - Murkurtu calls this 'digital

Photo By Hanne Pearce

heritage'. This can include: what the image depicts, stories or information about the author of the item.

The Traditional Knowledge field in Mukurtu is designed to present information about the traditional information depicted or tied to the digital heritage item. For example, if the digital heritage item is a photograph of a place of traditional significance users can describe in detail why this place is significant for the community and how that relates to the item being presented.

Discussion Questions: Technical Rules

Why do you think it is important to organize digital objects into groups?

Why do you think it is important to use protocol to organize digital content?

Educational Rules: Local Contexts and TK licenses - Introduction to guidelines for users, such as Traditional Knowledge labels developed by Local Contexts, which were developed to help communities manage their digital heritage.

Discussion Questions: Digital Rights

When thinking about sharing the kinds of stories like the one that Elder Persis
Gruben told the high school students about her survival experiences, it is important to ask the following kinds of questions:

Who does this material belong to?

Are there cultural, intellectual, and ethical guidelines that need to be considered?

Which individuals, communities and/or nations need to be consulted?

Is all information appropriate to collect or are special considerations around sensitive records/ materials required?

What is nature of the proposed usage of materials?

Do cultural rules around offensive, secret, or sacred materials apply?

How will we ensure that the right nations, communities, and peoples have unlimited access to their own materials?

DAY 2 (Digital Connectivity)

Module 4: Using Broadband

(2 hours)

Introduction

With so much digital content being used in our lives and societies today, connectivity to the internet has become a critical resource. In 2016 the Canadian Radio-television and Telecommunications (CRTC), the government agency that regulates Canadian broadcasting and communications activity, ruled that broadband internet is a basic telecommunications service.

The ruling means that all communities in Canada – no matter their size or location – must be able to access high-speed Internet services. However, in many regions, including Dinjii Zhuh territories, the underlying networks that can deliver these services still need to be built, and will need to be operated and maintained over the long term.

In fact, local connectivity remains limited and unreliable in most NWT communities, with high prices charged for services and data overage (when a user exceeds their data plan).
Ask students to consider:

- How is the internet connectivity is your community?
- Is it reliable?
- High-speed?
- Affordable?

These are the kinds of questions we will explore in this part of the workbook and workshop.

We will also examine solutions to challenges of limited, expensive connectivity.

There are many ways that participants can become involved in decisions about internet connectivity - as a user and as a provider of internet services.

Participants may not be aware of these opportunities, but ask them to consider:

- Government regulators and internet service providers need to hear from you about the quality, reliability, speed, and cost of services.
- Your neighbours, colleagues at work, business partners, and service providers in areas like health and education can work with you to ensure that your whole community receives the connectivity you require.
- If you are interested in a career in technology, there are many local and regional jobs focused on building, operating and maintaining connectivity services.

Tell participants that in this course, they will learn about your rights as a user of broadband services. This includes learning how to test the speed of their internet service, find out how much their data services cost (and how to plan for lowering those costs), and file complaints with internet service providers and government regulators to ensure that they are getting what they pay for.

Photo By Hugo Costa on Unsplash

Participants will also learn about how they can contribute to the development of broadband networks in your community. There are many different ways that broadband services can be developed – including by local and regional organizations. Broadband networks can be set up as businesses, as non-profits, as cooperatives, or even as government services (as is the case for Tamaani Network in the Nunavik region of Quebec).

The recent development of the Mackenzie Valley Fibre Link and the planned Dempster Highway project provides new options for NWT residents to review these options and choose the most effective solution. In some cases, local communities may be interested in owning and operating their own internet systems, called community networks. As noted in the 2018 Global Information Society Watch report, community networks are "communication networks built, owned, operated, and used by citizens in a participatory and open manner" (p.5).

The below sections cover what broadband is, how broadband is being developed in the NWT, the benefits and potential negative impacts and some information about how some communities in the North are building and operating their own community networks. As we will discuss, Indigenous communities have led local and regional community networking initiatives since the early days of the Internet. However, gaps and challenges remain today - and participants can play an important role in working through these issues.

Our goal for this section is to provide resources and information to support Gwich'in community members in choosing the broadband development option that best meets their needs, and ensure that they are aware of their rights as users of broadband services. We hope that this information is useful in thinking through some of the benefits and challenges of digital connectivity in the NWT.

Learning Outcomes

- Define broadband as a form of digital networking
- Discuss community engagement and consultation in broadband development
- Discuss 'effective use' of broadband: what are the benefits for your community?
- Identify local broadband users: anchor tenants, households, businesses
- Define demand aggregation and recognize the benefits of the 'whole community'
- Discuss future use and demand
- Identify community assets and challenges

Module Content

What is Broadband? - Introduction to broadband as an always-on, digital data transfer service. Notes distinction between 'broadband' and 'internet' through the concept of 'connectivity'.

Discussion Questions: What is Broadband

Take a moment to think about broadband services and applications that you use every day. Why is broadband important to:

You?

Your friends and family?

Your community?

The Gwich'in Settlement Area?

Broadband Development in the NWT - Overview of the existing state of broadband infrastructure and services in the NWT. Includes comparative discussion of other regions of Canada. Introduces several resources regarding broadband.

Broadband Benefits (and Challenges) for Communities - Overview of some of the benefits and challenges that broadband holds for communities, with a focus on Northern and NWT communities.

WORKSHOP ACTIVITY: Make the Net-Work

This hands-on exercise consists of 10 steps that participants can work through to build their own tabletop community broadband network.

The activity is designed to familiarize participants with different aspects of digital connectivity. It provides an introduction to considerations that communities may think about when building or negotiating a local broadband network. It is designed to be a starting point for discussion, as well as a way to illustrate technical and social considerations.

Along with providing a hands-on introduction to digital connectivity, the activity will demonstrate issues such as speed, cost and quality of service. Participants will learn how to collect data about these aspects of internet connectivity, and how to file complaints (if required).

Step 1: Let's Consider the Benefits and Consequences of Improved Connectivity

Before we start building the net-work, the facilitator will lead a discussion focused on these questions:

> What are the benefits of broadband Internet at home, at work or in communities?
>
> What may be any negative impacts of broadband Internet at home, work or in the community?
>
> Do any barriers or challenges limit your use of broadband (access, affordability, data caps)?
>
> What supports do you need to use broadband effectively?
>
> How can we ensure effective or appropriate use of broadband?

Broadband in Canada: Geographical Digital Divides - Overview of the past and existing state of digital divides in Canada, with a focus on the North.

Geographic Paradox of Telecom Development - Discussion of how telecommunications development - including for broadband connectivity - plays out differently in urban versus rural regions.

WORKSHOP ACTIVITY: Make the Net-Work

Step 2: Broadband and the Environment

This activity is designed to draw attention to some of the geographic, cultural and environmental considerations that are involved in planning broadband development in your community. Show a printed map of a community during this activity.

Participants will look at the map and discuss the following questions:

> What elements of the community map (geography) impact broadband development (construction)?
>
> What pieces of nature need to be considered when planning for broadband infrastructure?
>
> Can you think of areas of cultural importance that might impact broadband planning?
>
> Can you think of environmental considerations (water, land, trees, wildlife, etc.) that might impact broadband planning?

The 'Whole Community' Approach - Illustrates how community engagement is central to decision-making around local broadband initiatives. By working together to identify development goals through structured planning and dialogue, Northern residents can shape community broadband projects to enable widespread adoption and effective use of this important resource.

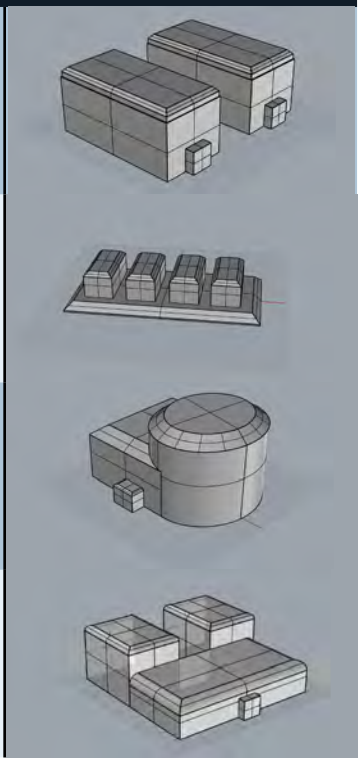
Identifying Community Assets - Community assets are broadly defined, and illustrate the strengths that will guide the development of community networks and broadband connectivity. They refer to the many strengths that make up a community - people, organizations, buildings, equipment, technical infrastructure, natural features, and so on.

WORKSHOP ACTIVITY: Make the Net-Work

Step 3: Let's Find and Place Our Community Assets

This activity is designed to draw attention to community assets that participants can draw on when discussing and planning broadband development. The facilitator will have 3D-printed pieces that illustrate different community assets.

IMAGE 1: Community Assets for Broadband Development

Piece Name	Type of Infrastructure	Sample Image
Businesses	Premise (End User)	
Homes	Premise (End User)	
Hospital	Community Anchor (major users)	
School	Community Anchor (major users)	

Images: Hanne Pearce | Gwich'in Digital Literacy Team.

Participants will discuss the following questions, and then place some of the 3D-printed pieces to demonstrate assets in their community:

> What are the major community anchor institutions in your community?
>
> Why are community anchor institutions important when it comes to broadband planning?
>
> Are there any other types of organizations that need to have a broadband connection? What are they and why is broadband important to them?

Module 5: Broadband Technologies

(1 hour + lunch break + 1 hour)

Introduction

We began our discussion of broadband connectivity by focusing on social considerations - how it affects our communities, and what role ourselves and our communities can play in broadband development and effective use. Broadband development ideally involves a whole community approach, where neighbours and colleagues come together to review and discuss their options. We also reviewed some of the challenges of broadband connectivity in the North, as well as the many assets located inside Northern communities. We discussed some planning considerations to guide broadband development.

In this Module we turn to some of the technologies that make up broadband systems. While focused on technical elements, this material is designed for non-experts - it provides an introduction to the different ways that broadband systems can be developed. While social elements are key to broadband development, it is also important to be aware of technical considerations.

Learning Outcomes

- Describe the differences between fixed/wireless broadband technologies
- Identify types of broadband connection technology: fixed wireless, mesh networks, DSL, cable, fibre
- Identify key technical elements of broadband systems (local and 'backbone' networks)
- Define a 'Point of Presence' and its role in building community networks
- Discuss technology planning considerations: redundancy, demand aggregation, privacy, security
- Explore examples of regional and local Indigenous broadband community networks

Module Content

Types of Broadband Connection Technology & Speed Comparison - Introduction to different types of broadband technology, including some of their benefits and drawbacks.

Wired Versus Wireless Networks - Discussion of these two main types of broadband technologies, and how they can work together to form robust connectivity systems.

Photo By Hanne Pearce

WORKSHOP ACTIVITY: Make the Net-Work

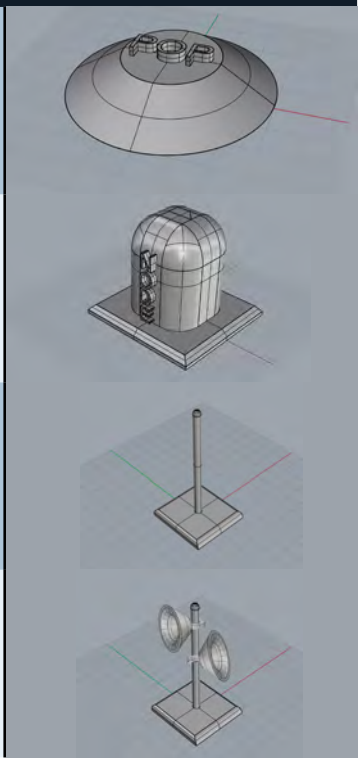
Step 4: Let's Find and Place Our Wired and Wireless Network Pieces

This activity is designed to review wired and wireless elements of a broadband network. Participants can draw on this material when discussing and planning broadband development.

The facilitator will have 3D printed pieces that illustrate different parts of wired and wireless networks.

Participants will begin by reviewing the descriptions of wired and wireless broadband technologies noted above, and match them to the 3D printed pieces.

IMAGE 2: Wired and Wireless Pieces of a Broadband Network

Piece Name	Type of Infrastructure	Sample Image
PoP (Point of Presence)	Network Infrastructure	
Node	Network Infrastructure	
Wireless Tower	Network Infrastructure	
Satellite Farm	Network Infrastructure	

Images: Hanne Pearce | Gwich'in Digital Literacy Team.

The second step in this activity involves participants building a simple wired network.

The facilitator will give participants a limited amount of string (representing DSL, fibre or cable lines), and ask them to "connect your community".

Once the participants have finished connecting their community (building a network), the facilitator will ask about a few things to consider:

> Do you have enough string to connect all the homes, businesses and anchor tenants?
>
> If not, how will you decide whom to connect?
>
> What challenges exist with connecting remote buildings with wired connections?
>
> What if there was a new building erected on the outskirts of your community that needed broadband. How might you connect it?
>
> What if there was no more fibre (string) available, or it was too expensive; what other options exist?
>
> Finally, what is missing from this network after you're done building the local broadband system?

Local/Backbone Networks - Discussion of different elements of broadband networks. Considers how local networks operate, and how they connect to other communities and regions.

Demand aggregation and benefits of the 'whole community' approach - Introduces how individual communities can work together for mutual benefit in broadband development.

Regional Broadband Infrastructure: Connecting Communities - Overview of transport or backhaul infrastructure that provide the backbone of broadband connectivity. These transport links consist of networks of submarine fibre optic cables, satellite transmissions, and wireless and terrestrial telecommunications.

Example: KO-KNET (NW Ontario) - Summary of this First Nations owned and operated regional broadband network.

Regional Broadband Projects in the NWT: Mackenzie Valley Fibre Link - Discussion of regional broadband projects in the NWT.

WORKSHOP ACTIVITY: Make the Net-Work

Step 5: Local and Backbone Networks

This activity is designed to review the distinction between backbone and local networks. It provides participants an opportunity to learn about these two types of networks, and the kind of technical infrastructure that they use.

Participants will discuss the following questions:

> Where does the MVFL go?
>
> Why might it be important to think about where the 'backbone' connection to the internet goes?

Photo By Hanne Pearce

Next, the facilitator will show participants the 3D printed piece illustrating the 'Point of Presence' (PoP). Participants will place the PoP and discuss the following questions:

What considerations did you think through in adding the PoP?

How might your community's PoP relate to other PoPs?

Local Broadband Infrastructure: Making Connections Inside Communities - Discussion of how individual households and businesses inside a community are connected with one another, as well as with the regional transport networks. These local access systems link homes, businesses, organizations and individuals inside communities.

Local Broadband Projects in the NWT: K'atl'odeeche First Nation Fibre Optic Network - Example of local First Nations network in NWT.

VIDEO: Henry Tambour Tours the K'atl'odeeche First Nation Network
Henry Tambour, a member of the K'atl'odeeche First Nation and the band's network technician, helped replace the copper infrastructure that had been in place since the early 1980s with fibre. He worked with project manager Lyle Fabian (now at Katlotech Communications). Lyle and Henry set up local wireless connections and software and a local system that broadcasts over a community radio signal and records proceedings so people outside the community could participate in community meetings. Anyone who was hard of hearing had access to special headsets. Let's watch a short video about Henry's work.

LINK: https://www.youtube.com/watch?v=st4H7l9wtdo&

WORKSHOP ACTIVITY: Make the Net-Work

Step 6: Considerations for Network Design

This activity is designed to review some design considerations that apply to both local and regional networks. It illustrates the concept of redundancy and access to adequate bandwidth, both of which are important issues for broadband development in the North.

Regardless of the deployment approach used for connectivity infrastructure, it is important for network managers to determine adequate minimum bandwidth; otherwise local networks can be overwhelmed. This happened in Canada in August 2009 during Operation Nanook, a military exercise that overloaded cell phone and internet networks in Iqaluit, impacting the ability of groups to communicate and share data.

This issue also highlights the need for redundant backup connections, which can address such system overloads or network breaks due to cut cable or fibre optic lines – which sometimes happens in the North. Participants will discuss the following questions:

> Have you ever experienced a 'cut' in the line? What was it like? How long did it last?
>
> What happens when either the local network or backbone network gets 'cut'?
>
> What might be some good solutions for ensuring a network doesn't get cut?

Next, participants are asked to build a redundant network. They can use string to build a loop, so that even if the line is cut in one place, everyone still has access.

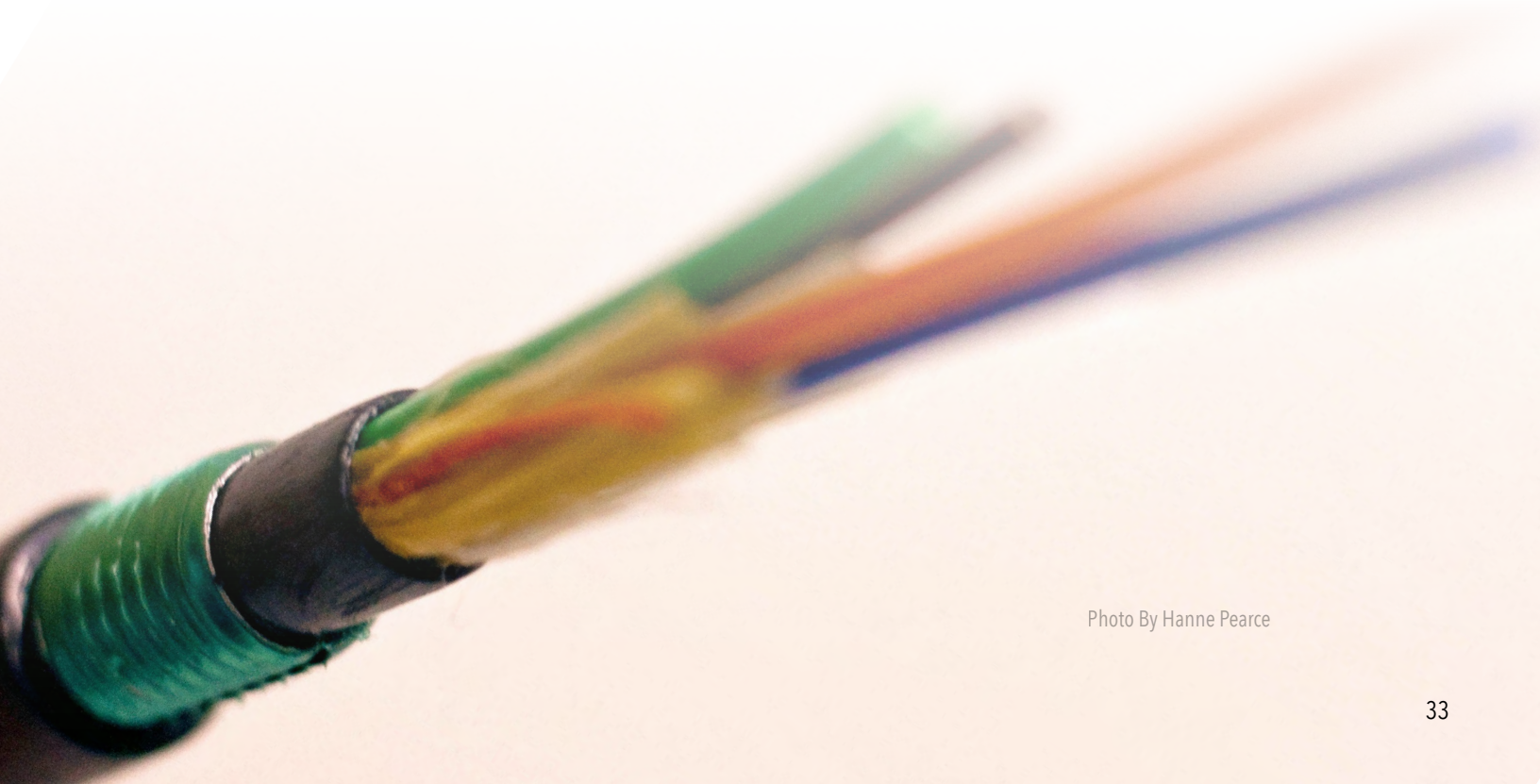


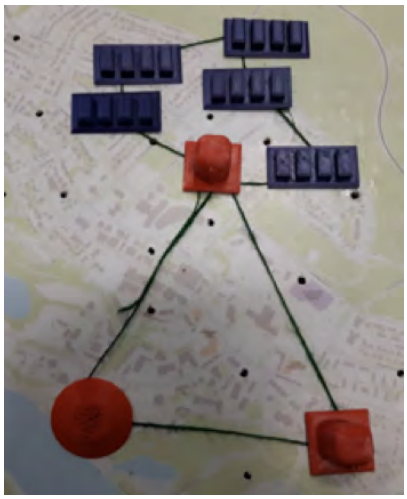
Photo By Hanne Pearce

Participants discuss the following questions:

Does building a redundant network take more string?

Why is it important to carefully plan a route to make an effective loop?

The facilitator will then use the community network map and materials to demonstrate nodal network design in two situations: a simple nodal design; and nodal design on a fully built board (illustrated below).



Simple nodal design
PoP and two nodes (red) connected.
Node connects a loop of homes (blue).

Nodal design on fully built board
Node (red) connected to primary local network (green string).
Node connects a loop of premises (blue and white string).

The facilitator will end this activity by asking participants to 'clean the board' and combine what they have learned to build a community network. They will be asked to include considerations of redundancy, nodal design, and wireless and wired infrastructures.

The facilitator will include some discussion prompts to guide this exercise:

Try to be as effective as possible in using the string.

Afterwards, let's consider how much string this took.

Are you surprised by how complex your final network is?

Photo by HMario Caruso on Unsplash

Module 6: Assessing Broadband

(2 hours)

Introduction

This module focuses on broadband user experience. After a broadband system has been built, there are still many things to consider. These include questions around affordability, access, quality of service, long-term operations and management, and the potential for broadband development to support local organizations and jobs.

When assessing broadband it is important to think beyond current uses and consider future use and demand. Over the last two decades demand for broadband capacity has grown steadily as more devices and uses have become available. Think about your own use of broadband - which has probably changed over the past few years from sending email and visiting simple web pages to demands for multiparty video-conferencing and high definition streaming video.

Learning Outcomes

- Recognize key indicators of broadband service: speed, data caps, affordability,
- Explain the difference between Actual/Advertised Speeds
- Test internet speed and measure data caps using free online tools
- Describe the CRTC and the CCTS, and their role supporting broadband consumers
- Recognize your broadband rights: monitoring and reporting speed, affordability, and quality of service

Module Content

Broadband in Canada: Speed and Cost Issues - NWT communities - despite having clear interests in the benefits of connectivity, such as for access to health and education - pay some of the highest prices for, and have the lowest quality and speed of, broadband connectivity services in Canada. This section introduces resources regarding internet speed, quality of service, and cost.

WORKSHOP ACTIVITY: Make the Net-Work

Step 7: Ensuring Network Quality

The quality of an internet connection is dependent on many factors including speed, affordability and limitations on use such as data caps. The following sections provide information on how to assess the overall quality of network, starting first with testing internet speeds.

Testing Speed and Quality of Service - Explains these two aspects of assessing broadband and introduces CIRA's internet performance test.

VIDEO: CIRA Internet Performance Test
This short video provides an introduction to how CIRA tests internet performance. CIRA provides a number of resources to support internet users and community networking initiatives. CIRA is also one of the funders that supported the development of this short course.

LINK: https://cira.ca/how-internet-performance-test-works

ACTIVITY: Let's Do a CIRA Test

This activity illustrates one way to test internet speed and quality of service. It utilizes CIRA's online performance monitoring tool. It also illustrates the difference between advertised and actual internet speeds - a common issue with retail internet services, particularly in the North.

Participants should first go to: https://performance.cira.ca/ and follow the steps to perform a speed test.

Next participants will consider the following questions:

What are the two speeds listed?

Why is download speed important?

Why is upload speed important?

What kinds of things might impact your speeds?

What is important to test your speeds?

Data Caps and Affordability - Introduces these two aspects of assessing broadband.

VIDEO: What's the problem with data caps?
This short video provides an introduction to data caps. It was created by a non-profit organization based in the U.S. called Public Knowledge. According to the organization's website: "Public Knowledge promotes freedom of expression, an open internet, and access to affordable communications tools and creative works. We work to shape policy on behalf of the public interest".

LINK: https://www.youtube.com/watch?v=xSSO4gf79IQ

Photo by Hassan Ouajbir on Unsplash

ACTIVITY: How Quickly Will the Cap be Met?

This activity illustrates data caps. It utilizes an online tool developed by Northwestel to help people plan their internet usage.

Participants should visit the Northwestel Usage Estimator at:
http://nwtel.ca/shop/internet/usage-tools/usage-estimator

Ask them to start by adjusting the settings to reflect their personal internet usage. How much data do they estimate they will use?

Now ask them to think of all the members in their household. Add estimates of their use of the internet. How much data will their household use?

Then ask the participants the following questions:

Do/would you use this tool to plan your internet use?

Do you think it is reasonable to plan out your data usage in this way?

Do the rates for various uses surprise you?

If you have to use less, what do you decide to do less of?

What would you like to do more of but can't because of data caps?

Making a Complaint About your Internet Services - Introduces different ways to file a formal complaint about internet service, speed and cost. Discusses the role of organizations including internet service providers (e.g. Northwestel), the CRTC, and the CCTS.

If you are a Northwestel customer and want to make a complaint about their services, you can learn how at this website: http://www.nwtel.ca/legal/complaints-process

Northwestel suggests that all complaints about its services should be directed to the Northwestel Customer Care Centre at 1 888 423-2333, where you can speak to one of its Customer Service Representatives.

If your concern is not addressed, you can escalate to the Customer Service Manager or Associate Director, and ultimately to the Office of the President Form (http://www.nwtel.ca/about-us/contact-us/office-president-form).

You can also reach out to the CRTC to raise complaints about speed, quality of service, or cost of your internet.

CRTC Support Centre - https://crtc.gc.ca/eng/contact/

There are several ways to contact the CRTC with regards to your quality of service:

- on-line form: Ask a question or make a complaint
- mail: Secretary General, CRTC, Ottawa, Ontario K1A 0N2
- fax: 819-994-0218
- toll free telephone: 1-877-249-CRTC (2782)
- toll free TTY: 1-877-909-CRTC (2782)

Canada also has a specific Commission for Complaints for Telecom-Televisions Services (CCTS) that is an independent organization that handles complaints about most telecommunication services.

Visit the CCTS website here: https://www.ccts-cprst.ca/

Consultation Requirements for Indigenous Communities, and Aboriginal and Treaty Rights with Respect to Digital Connectivity - Indigenous governments, through Aboriginal and treaty rights, and land-claim agreements, may also have certain powers regarding broadband development.

In government funding programs, such as the CRTC's $750 million Broadband Fund, applicants are expected to identify any established or asserted Aboriginal or treaty rights that might be affected by the proposed project. As well, applicants are expected to commit to undertaking any further consultations that may be necessary. The CRTC further notes that it may give special consideration to proposed projects that would serve Indigenous communities.

These are important issues for Indigenous governments and their citizens to be aware of - and to monitor to ensure that these recommendations are undertaken in an appropriate, effective manner.

Participants can contact the CRTC directly for more information at: https://crtc.gc.ca/eng/contact/

Questions for Discussion: Reporting Broadband, Know Your Rights!

What is the connectivity situation in your community now?

Where can you file complaints in Canada about internet service?

What kind of information should you have ready to make a complaint?

Did you participate in consultations about broadband (such as the Mackenzie Valley Fibre Link or the Internet Code of Conduct)? If so, what was it like?

What should government know about your broadband services?

ACTIVITY: File a Report with the CCTS

This activity provides a walk-through for participants to file a report about their internet services with the Commission for Complaints for Telecom-Televisions Services (CCTS). It utilizes an online complaint form provided on the CCTS website.

The goal of this activity is to provide participants with information about how to present the data they have collected about quality of service, speed, and cost in a formal complaints process.

Participants should first visit the CCTS Complaints Form at: https://www.ccts-cprst.ca/for-consumers/complaints/complaint-form/

The facilitator should guide participants through the interactive questionnaire, and encourage them to draw on data collected through earlier activities.

Note: unless participants want to file an actual complaint, they should not move past the 80% mark (where the CCTS asks for personal information and contact information).

Once participants have prepared - or filed - a complaint, the facilitator should ask the participants the following questions:

Are there certain types of complaints the CCTS won't investigate?

What might you want to do before filing a complaint with the CCTS?

Module 7: Conclusion and Resources

Introduction

In this final module, we review some resources that you can access to learn more about digital content and connectivity in Dinjii Zhuh contexts. We hope that this workbook and workshop has provided you with a good introduction to some benefits, challenges and considerations related to the development and use of these emerging digital technologies. For readers interested in learning more, we have put together some resources to explore.

Learning Outcomes

- Identify resources for further learning
- Identify future training opportunities
- Concluding discussion with participants

Module Content

First Nations Information Governance Centre - Introduces this national organization, which focuses on data collection and analysis with First Nations. Introduces the First Nations principles of OCAP®.

VIDEO: Data by First Nations for First Nations

The First Nations Information Governance Centre (FNIGC) is a national organization focused on data collection and analysis with First Nations. It is the home of the First Nations principles of OCAP®, which the website notes are a set of principles that guide how research with First Nations people should be conducted and how that information should be stored. This short video introduces FNIGC's work.

LINK: https://www.youtube.com/watch?v=XAiwn0tKCIM

Indigenous Connectivity Summit - Introduces this annual event, which focuses on including Indigenous voices in the decisions and solutions that shape the Internet.

FirstMile.ca - Introduces this website, which is an online hub focused on Indigenous-led technology development. The website was set up by a national association of First Nations and Inuit technology organizations that operate in rural, remote and Northern regions of the country.

Understanding Community Broadband: The Alberta Broadband Toolkit - Introduces this toolkit, which was designed for use by Alberta communities to assist in developing broadband solutions. The toolkit

Photo by Paul Hanaoka on Unsplash

is organized into three general sections - learning about broadband, thinking about broadband, and planning broadband.

Continuing and Professional Education - Provides a short overview of formal training programs that participants can access to learn more about digital content and connectivity.

Questions for Final Discussion

How can we ensure digital technology meets the needs of Dinjii Zhuh people?

What is the best way to explain digital technologies to everyday local people?

What supports are required for northern communities?

What barriers do you face?

What do you need to keep learning? What other technology learning projects/training opportunities would you like to see?

How do you think you could interest friends and family in these issues?

What would help you stay motivated in learning about and participating in digital content and connectivity projects?

Máhsí' Choo! Thank You!

For additional information, please contact:

Rob McMahon, PhD
Associate Professor
Faculty of Extension, University of Alberta
rob.mcmahon@ualberta.ca 780-248-1110

Michael B. McNally, PhD
Associate Professor
School of Library and Information Studies, University of Alberta
mmcnally@ualberta.ca 780-492-3934

www.digitalNWT.ca

Land Acknowledgement:

Jii University of Alberta Treaty 6 guuk'iigeh' jii nanhkak guu' ęįh. Jii dinjii zhuh ttak Cree, Métis, Saulteaux, Niisitapi, ts'at Nakota Sioux niizhet gwits'at. Jii nanhkak łatr'idàł guulùt zhidąh gwì'àn guugweech'ìn.

The University of Alberta is located in ᐊᒥᐢᑲᐧᑲᒋᐧᐢᑲᐤᐃᑲᐣ (amiskwacîwâskahikan) on Treaty 6 territory, traditional lands of First Nations and Métis people.