Indigenous-Led E-Learning and Enabling Technologies:
A Scan of Programs in Canada

ICTC ✦ CTIC

Research by

Preface

The Information and Communications Technology Council (ICTC) is a not-for-profit national centre of expertise for strengthening Canada's digital advantage in a global economy. Through trusted research, practical policy advice, and creative capacity-building programs, ICTC fosters globally competitive industries enabled by innovative and diverse digital talent. In partnership with an extensive network of industry leaders, academic partners, and policymakers from across Canada, ICTC has empowered a robust and inclusive digital economy for over 30 years.

To cite this report:

Acknowledgements

Contents

Introduction

Education of all forms has long been offered at a distance via technology. However, it has never seemed so important to develop the infrastructure and capacity to offer online, distance, and electronic learning as it did during the last four years. During the height of the COVID-19 pandemic lockdowns, the Information and Communications Technology Council (ICTC) was working on two studies in which interviewees highlighted the extreme barriers to e-learning access faced by students living in Indigenous communities: one focused on e-learning across the country and the other on Indigenous Leadership in Technology in British Columbia.[1] Both of these reports told a story of inequities caused by gaps in affordable broadband internet in the home, as well as lack of access to hardware.

Nevertheless, there are many Indigenous learning professionals in both secondary and post-secondary education who are pursuing innovative projects to improve digital equity and Indigenize learning with technology. Many of these initiatives have been in existence since long before the COVID-19 pandemic, created to generate access to secondary education and other training programs not available in many communities or to preserve language and culture.[2] This article highlights Indigenous-led e-learning programs, outlining the need for and the significance of Indigenous-led digital learning. It provides examples of programs that managed to navigate through the pandemic and continue to offer much-needed distance education to Indigenous learners.

1   Maryna Ivus, Trevor Quan, and Nathan Snider, "Uncharted Waters: A World-Class Canadian E-Learning Paradigm" (Ottawa: Information and Communications Technology Council, October 2021), https://www.digitalthinktankictc.com/reports/uncharted-waters.; Indigenous Leadership in Technology: Understanding Access and Opportunities in British Columbia, First Nations Technology Council, Information and Communications Technology Council, Reciprocal Consulting Inc., (2022), Canada.

2   Brian Beaton and Penny Carpenter, "Digital Technology Innovations in Education in Remote First Nations," in education (2016), vol. 22, 1, p. 43.

What is E-Learning?

Electronic learning, or "e-learning" in this paper and elsewhere,[3] is an umbrella term used to include any type of learning conducted over a device such as a computer or phone. Online education is nearly synonymous with e-learning: used more commonly by secondary and post-secondary schools, online learning occurs over the internet and is intentionally designed to include features that encourage online communication and interaction. Importantly, *distance* learning has existed for much longer: correspondence courses have long been offered by mail or fax machine.[4] Radio stations have also long partnered with educators to offer remote educational services such as language immersion. Researchers in online learning and educational technology have suggested that each of these forms of learning should not be confused with "emergency remote teaching" – a situation where, as with COVID-19, emergency circumstances force educators to rapidly adapt to distance education facilitated by technology, rather than having the time to re-design course materials for their new medium.[5] An important distinction between emergency remote teaching and online learning or e-learning is that the former is inherently temporary: if educators and schools believe that eventually they will return to an in-person classroom, they are less likely to invest in sustainable and high-quality e-learning program materials and media. Emergency remote teaching remains "an attempt to project a classroom instructional model to students at a distance with limited success."[6] Nevertheless, the pandemic forced an urgent conversation on equity in access to e-learning and distance learning, and spurred institutions like post-secondaries to rapidly develop new tools to teach and assess students.

ENABLING TECHNOLOGIES

Distance Education, Radio, and Broadcasting

Distance education enabled by technology is nothing new, including in Indigenous nations. Today, we think immediately of the internet when considering distance education, but many other types of information and communications technologies have been used (and are still used) to deliver educational content and facilitate interaction across long distances. Like internet infrastructure, radio and television broadcasting also took some time to disseminate across rural and remote areas in Canada. Community radio (run by local volunteers, involving a small transmitter and premises) was offered by CBC to communities of 500 or more across Canada starting in the 1950s.[7] Local operators produced their own programming, sometimes including language preservation and education. An example is a radio station in Yellowknife with Dene languages programming and a station in Puvirnituq that used "phone ins" to facilitate Inuit language games.[8]

---

3   Lutfiyya Dhalla, "elearning," ecampus Ontario, May 20, 2019, https://www.ecampusontario.ca/knowledge-base/elearning/

4   Peter Burpee and Brenda Wilson, "Distance Education in the Faculty of Education," McGill Journal of Education, 1999, https://eric.ed.gov/?id=ED337161

5   Charles Hodges et al., "The Difference Between Emergency Remote Teaching and Online Learning," Educause Review, March 27, 2020, https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning

6   Michael Barbour and Randy LaBonte, "State of the Nation: K-12 E-learning in Canada 2022 Edition," Canadian eLearning Network, https://k12sotn.ca/wp-content/uploads/2023/03/state-of-the-nation-2022.pdf.

7   Robert Rupert, "Northern Broadcasting in Canada," Anthropologica 25, no. 1 (1983): 53-61.

8   Ibid.

According to the Aboriginal Peoples Television Network (APTN) history of Aboriginal-language broadcasting in Canada, initiatives like Kenomodiwin Radio, a travelling radio van, brought regional Indigenous language programming to communities in northwestern Ontario in 1967. The Anik satellite system, launched in 1972, enabled "the widespread distribution of radio and television signals to remote northern communities."[9] Soon, organizations like Wawatay Native Communications Society (1973), The Inukshuk Project (1978), The Inuit Broadcasting Corporation (1981), and Northern Native Broadcasting, Yukon, were founded, supported by funding from the Native Communications Program (1973), the Northern Native Broadcast Access Program, and the Northern Broadcasting Policy (1983)—all of this prior to the founding of APTN in 1999 and Aboriginal Voices Radio in 2002.[10] The APTN history article details the peaks and valleys in policy support and funding for Indigenous-language broadcast programming while Indigenous language speakers and educators produced local, regional, and national materials to preserve and revitalize their languages through a form of distance education.

In many ways, contemporary Indigenous-led e-learning echoes this same history: early adopters of technologies like radio, broadcast television, and internet in Indigenous communities are piloting content built for distance education, but decisions made about funding and infrastructure will impact their ability to operationalize and formalize each program. Similarly, reports like APTN's highlight the ability of media technologies like radio, broadcast television, and the internet to both reduce the use of Indigenous languages and cultures while re-introducing them when these media programs are created or curated by Indigenous educators.

ENABLING TECHNOLOGIES

Broadband Internet

Many Indigenous nations still lack access to the minimum broadband connectivity set by the Government of Canada at 50/10 Mbps (download/upload speeds). A 2021 Auditor General of Canada report that aimed to measure progress on internet affordability and quality found that 99.3% of urban households in Canada had access to minimum broadband speeds. However, only 59.5% of rural and remote households had access to the internet at target speeds. This percentage dropped to 42.9% for households on First Nations reserves in Canada.[11] The report concluded that household internet was "not a luxury" – thinking back to the "emergency remote teaching" that occurred during the COVID-19 pandemic, this meant that if students on First Nations reserves were sent home to study, over half were not able to use the internet to do so. In the 2022 study Indigenous Leadership in Technology, which involved a survey of Indigenous peoples in BC, survey respondents and interviewees noted that a lack of affordable, reliable high-speed home internet was a barrier to Indigenous students accessing education.

9   Jennifer David and Debwe Communications Inc. Aboriginal Language Broadcasting in Canada: An overview and recommendations to the Task Force on Aboriginal Languages and Cultures. Aboriginal Peoples Television Network, November 26, 2004, p. 11.

10   Ibid.

11   Office of the Auditor General of Canada, "Connectivity in Rural and Remote Areas," Report 2, 2023, https://www.oag-bvg.gc.ca/internet/English/att__e_44225.html

For example, respondents with an internet connection they had to share with five or more people (often in a band office in rural and remote nations) were significantly less likely to be able to use the internet to participate in online education than those who had an internet connection to themselves.[12]

Unlike the history of remote and rural radio and television (where radio infrastructure designed for local control was provided by a combination of public organizations like CBC and then-crown corporation Telesat Canada), broadband connectivity infrastructure is primarily the responsibility of private, large internet service providers (ISPs), who face minimal competition in rural communities (and therefore are able to charge high fees for low-connectivity services) and are not financially incentivized to build infrastructure in areas with relatively few customers.[13] Attempts to bridge this gap have included incentivizing large ISPs to build "last-mile" infrastructure to remote communities through public funding and policy mechanisms.[14] New satellite technologies like Starlink have promised to deliver high-speed internet in rural and remote communities across Canada, beginning in 2020 with the "Starlink Better Than Nothing Beta Program," a change that has already improved access for many. However, some caution that Starlink is not a panacea, primarily because of the up-front hardware cost (currently over $800), periodic outages,[15] and the fear that its current price structure will continue to change based on satellite capacity (the service, for example, introduced a data cap for North American users in December 2022).[16] An interviewee who had worked in Indigenous-led broadband for many years told ICTC, "It's vulnerable to rate increases: no regulatory oversight in Canada. It's not just about getting infrastructure in there but making sure you know who is behind it and if it's sustainable."

An alternative, complementary approach to last-mile incentivization is "first-mile" thinking: a "first-mile approach to broadband policy re-frames the decision-making process to emerge from rural and remote communities."[17] First-mile projects include, for example, First Nations-developed ISPs such as Keewaytinook Mobile and K-Net in Fort Severn and the Northern Indigenous Community Satellite Network.[18] Other first-mile approaches, like Connected Coast in BC, involve regional partnerships between Indigenous and non-Indigenous organizations.[19]

12   Indigenous Leadership in Technology: Understanding Access and Opportunities in British Columbia, First Nations Technology Council, Information and Communications Technology Council, Reciprocal Consulting Inc., (2022), Canada, p. 61.

13   Indigenous Leadership in Technology: Understanding Access and Opportunities in British Columbia, First Nations Technology Council, Information and Communications Technology Council, Reciprocal Consulting Inc., (2022), Canada, p. 58.

14   Innovation Science and Economic Development Canada (ISED), "High-Speed Access for All: Canada's Connectivity Strategy," Government of Canada, 2018, https://ised-isde.canada.ca/site/high-speed-internet-canada/en/canadas-connectivity-strategy/high-speed-access-all-canadas-connectivity-strategy.

15   Thomas Daigle, "Elon Musk's Starlink offers fast internet connections to rural Canadians. But it's not cheap." CBC News, Dec 8, 2020, https://www.cbc.ca/news/science/starlink-internet-beta-testing-in-canada-1.5831765

16   Tom Li, "Starlink to introduce a data cap in Canada and the US," IT World Canada, November 7, 2022, https://www.itworldcanada.com/article/starlink-to-introduce-a-data-cap-in-canada-and-the-u-s/511905

17   Rob McMahon et al., "Digital Divides and the 'First Mile': Framing First Nations Broadband Development in Canada," The International Indigenous Policy Journal (2021): vol. 2, no. 2, https://ojs.lib.uwo.ca/index.php/iipj/article/view/7346/5990, p. 1

18   Rob McMahon et al., "Digital Divides and the 'First Mile': Framing First Nations Broadband Development in Canada," The International Indigenous Policy Journal (2021): vol. 2, no. 2, https://ojs.lib.uwo.ca/index.php/iipj/article/view/7346/5990, p. 3.

19   Connected Coast, "Bringing high-speed Internet accessibility to rural & remote communities along coastal BC, Haida Gwaii & Vancouver Island." https://connectedcoast.ca

First Nations-controlled projects have sometimes emerged because of a need to offer Indigenous-led education. K-Net was developed in part because of Fort Severn's priority of delivering "network services, education, and health,"[20] and the Keewaytinook Internet High School (KiHS) now provides secondary education across communities to students who would otherwise need to leave their homes to finish high school, as well as lifelong learning.[21] Two researchers working with the KiHS report,

> *Lifelong learning initiatives continue to be a priority in each of these remote communities. Within the local schools, the importance of the local language and traditions is emphasized in local elder teaching programs, traditional activities, and native language classes. Using digital technologies for formal and informal education and distance education makes it possible for everyone in these communities to stay close to their traditional lands and continue participating in the land-based activities that have always been practised by the people in this region (Beaton & Campbell, 2014). All of these opportunities are possible because of the broadband networks owned and controlled by the KO First Nations and supported by their tribal council KO (Beaton & Campbell, 2014; Carpenter, 2010).[22]*

Despite the critical role they can play in enabling services like e-learning and telehealth, small ISPs face significant barriers to developing robust broadband infrastructure, including funding consolidation and limited wireless spectrum auctions.[23] An interviewee consulted for this paper commented,

> *You need to do some expectation management for first-mile/last-mile initiatives—they have to be truly community based. If someone is looking to start a project like this, they won't become rich; they have to want to truly bring service to the community and members.*

ENABLING TECHNOLOGIES

Physical Infrastructure and Hardware

In an article on education and technology in remote First Nations, Brian Beaton of the University of New Brunswick and Penny Carpenter of K-Net tell a story about Poplar Hill First Nation in Northern Ontario searching for funding to upgrade a small, 60-year-old wooden school, powered by diesel generators—the new school opened in 2016, but extensive power upgrades had to take place first.[24] Physical infrastructure for affordable and sustainable electricity and hardware (including laptop and desktop computers) are essential prerequisites for access to e-learning.

20   Rob McMahon et al., "Digital Divides and the 'First Mile': Framing First Nations Broadband Development in Canada," The International Indigenous Policy Journal (2021): vol. 2, no. 2, https://ojs.lib.uwo.ca/index.php/iipj/article/view/7346/5990, p. 3.

21   Brian Beaton and Penny Carpenter, "Digital Technology Innovations in Education in Remote First Nations," in education (2016): vol. 11, n. 1, pp. 42-60. P. 48

22   Ibid.

23   Indigenous Leadership in Technology: Understanding Access and Opportunities in British Columbia, First Nations Technology Council, Information and Communications Technology Council, Reciprocal Consulting Inc., (2022), Canada, p. 69.

24   Brian Beaton and Penny Carpenter, "Digital Technology Innovations in Education in Remote First Nations," in education (2016): vol. 11, n. 1, pp. 42-60. P. 48

One interviewee consulted for this paper recounted a story of needing to turn down donations from a hardware company that couldn't offer laptops that would work in low-connectivity regions (requiring all software to be connected to the cloud). This illustrates that access to hardware, software, and broadband are highly intertwined.

Furthermore, an interviewee spoke about the power of introducing students to exciting technology like telescopes or robotics to expose learners to new career opportunities. Many Indigenous-led organizations like IndigeSTEAM, Pinnguaq Makerspace, and Stardust Inc. in Canada bring technologies like rocketry to rural and remote communities to inspire interest in STEM.[25] E-learning can also offer exposure to new careers, but hardware is both an enabling and supplementary technology.

The Need for Indigenous-Led E-Learning

Indigenous-led e-learning is one response to longstanding inequity in education and harms caused by state and church-led education for Indigenous peoples in Canada, documented by Indigenous education scholars[26] and federal processes like the Royal Commission on Aboriginal Peoples (RCAP, 1996) and the Truth and Reconciliation Commission (TRC, 2015). The TRC's Calls to Action (CTAs) include numerous calls related to education, including the following:

CTA 7: We call upon the federal government to develop with Aboriginal groups a joint strategy to eliminate educational and employment gaps between Aboriginal and non-Aboriginal Canadians.

In response to this call, Employment and Social Development Canada (ESDC) and Indigenous Services Canada (ISC) report investing more in on-reserve schools supporting post-secondary education through community-led scholarship funding.[27] In the project "Beyond 94," a CBC-created tool that tracks progress toward CTAs in Canada, the Parliamentary Budget Officer reported an educational funding gap between on-reserve (federally funded) schools and provincial publicly run schools of $665 million in 2016.[28] ISC has since announced new funding (April 2019) so that "students in First Nations K to 12 schools are supported by funding that is comparable to funding in provincial education systems."[29] Census 2021 data (which does not include a complete Census of Indigenous peoples in Canada)[30] suggests that approximately 74% of Indigenous peoples (First Nations, Inuit, and Métis) aged 25-64 have a high school diploma or equivalency certificate, whereas nearly 90% of non-Indigenous peoples completed secondary education – nearly a 15% difference.[31]

25   Allison Clark and Heather McGeer, "Stardust, Inc." Information and Communications Technology Council, August 21, 2023: https://www.digitalthinktankictc.com/articles/stardust-inc

26   Marie Battiste, Decolonizing Education, Vancouver: UBC Press, 2013.

27   "Education," Government of Canada, June 2023, https://www.rcaanc-cirnac.gc.ca/eng/1524495412051/1557511602225

28   "Beyond94: Truth and Reconciliation in Canada," CBC News, June 22, 2023, https://www.cbc.ca/newsinteractives/beyond-94/publish-annual-reports-on-education-funding-and-educational-and-income-attainments

29   "Education," Government of Canada, June 2023, https://www.rcaanc-cirnac.gc.ca/eng/1524495412051/1557511602225

30   "Incompletely enumerated reserves and settlements," Statistics Canada, August 12, 2022, https://www12.statcan.gc.ca/census-recensement/2021/ref/iers-repd-eng.cfm

31   "Table 98-10-0422-01 High school completion by Indigenous identity and labour force status: Canada, provinces and territories, census divisions and census subdivisions with a population 5,000 or more [Data table]," Statistics Canada, October 4, 2023, https://www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=9810042201

More granularly, nearly 70% of First Nations peoples, 82% of Métis people, and a little more than 50% of Inuit peoples aged 25-64 have completed high school.[32] These gaps grow in higher education; while 68% of non-Indigenous people in Canada hold post-secondary certificates, diplomas, or degrees, the same is true for 45% of First Nations peoples, 56% of Métis people, and 33% of Inuit peoples.[33]

It is important to interpret statistics on educational attainment considering the recency of funding announced in response to the TRC, as well as other variables, such as a gap between demand and funding supply in the Post-Secondary Student Support Program (PSSSP) and the risk of public schools tacitly streaming Indigenous students out of post-secondary preparation courses.[34] For example, an interviewee consulted for this paper is a professor whose research seeks to Indigenize business schools. They said that one of the biggest challenges faced in their work is "related to addressing the challenge of getting from high school to post-secondary if students are streamed out of university pathways and lacking pre-requisite courses."

At the curricular level, CTAs 62-65 also call upon the federal government to close educational gaps between Indigenous peoples and their non-Indigenous counterparts by integrating Indigenous knowledge into post-secondary classrooms, including content on residential schools in school curriculums at all levels and the integration of Indigenous pedagogies. Indigenous education scholars have noted that valuing and integrating Indigenous knowledge and education systems in Canadian education is an essential component of reconciliation and fulfilling TRC CTAs[35] while encouraging excellence and innovative thinking in Canadian secondary and higher education.[36]

Despite early funding committed to TRC mandates, gaps in education, employment, and household income persist.[37] Indigenous-led e-learning programs deliver critical access to education that leads to higher income[38] and diverse career paths.

32   "Table 98-10-0422-01 High school completion by Indigenous identity and labour force status: Canada, provinces and territories, census divisions and census subdivisions with a population 5,000 or more [Data table]," Statistics Canada, October 4, 2023, https://www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=9810042201

33   "Table 98-10-0413-01 Highest level of education by census year, Indigenous identity and Registered Indian status: Canada, provinces and territories," Statistics Canada, June 21, 2023, https://doi.org/10.25318/9810041301-eng

34   Indigenous Leadership in Technology: Understanding Access and Opportunities in British Columbia, First Nations Technology Council, Information and Communications Technology Council, Reciprocal Consulting Inc., (2022), Canada, p. 76.; https://theconversation.com/ending-streaming-is-only-the-first-step-to-dismantling-systemic-racism-in-ontario-schools-142617

35   Kiera Brant-Birioukov, "Covid-19 and In(di)genuity: Lessons from Indigenous resilience, adaption, and innovation in times of crisis," Prospects (2021) vol. 51, pp. 247-259; Lisa Taylor, "Getting Past the White Paper: Inclusion, Antiracism and Decolonial Inheriting in Teacher Education," In Superdiversity and Teacher Education, Routledge, 2021, pp. 52-68.

36   Merli Tamtik, "Indigenous innovation and organizational change towards equitable higher education systems: the Canadian experience," AlterNative: An International Journal of Indigenous Peoples, (2023) Vol. 19, 2: pp. 345-355.

37   "Education," Government of Canada, June 2023, https://www.rcaanc-cirnac.gc.ca/eng/1524495412051/1557511602225

38   "Does education pay? A comparison of earnings by level of education in Canada and its provinces and territories," Statistics Canada, November 29, 2017, https://www12.statcan.gc.ca/census-recensement/2016/as-sa/98-200-x/2016024/98-200-x2016024-eng.cfm

Access to Indigenous-led e-learning in secondary, post-secondary, and lifelong learning enables students to remain in their communities while studying, which addresses a longstanding issue in Canadian education. One interviewee consulted for this study commented:

> *Our communities are tiny, and in many, there is no high school because you'd need more high school teachers than students to be able to teach enough courses for students to get credits. There's also not enough housing or money for there to be that many teachers in these communities. That's why we created [programs] so that we could create a distributed school model. The only way you can have a high school in these small communities is via a distributed model, and because communities are so far apart, the only way you can connect them is through the internet. Apart from online learning, the only other way you can send your kids to school is by sending them to another city at the age of 13 to live with strangers. So, the main technology need for our communities is reliable, fast enough internet.*

12 Indigenous-Led E-learning Programs

Map souce: https://native-land.ca/
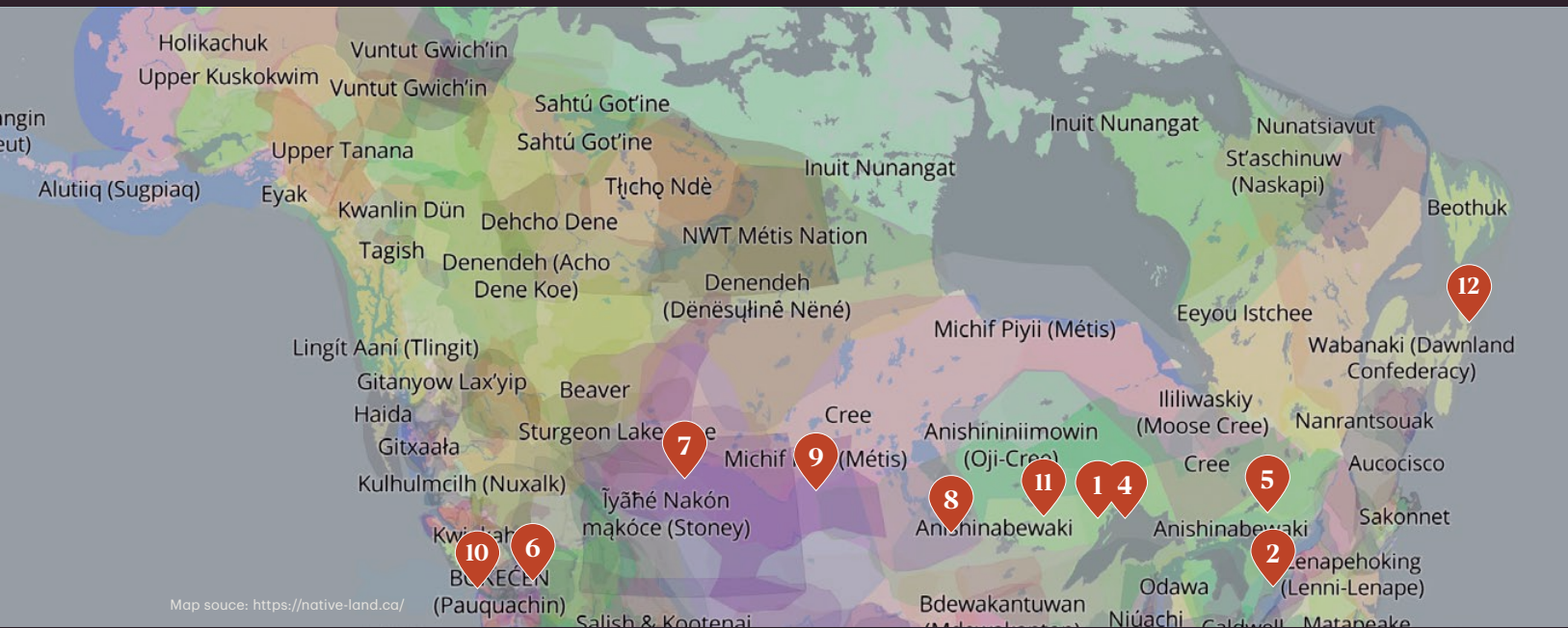
1	THUNDER BAY, ON **KiHS**	**5**	NORTH BAY, ON **Anishinabek Educational Institute**	**9**	REGINA, SK **FN University**
2	TORONTO, ON **Aboriginal Worldviews**	**6**	VANCOUVER, BC **First Nations Technology Council**	**10**	VICTORIA, BC **First Peoples' Cultural Council**
3	YELLOWKNIFE, NT **DigitalNWT**	**7**	SUNDCHILD FIRST NATION, AB **SCCyber**	**11**	SIOUX LOOKOUT, ON **Northern Nishnawbe Education Council**
4	THUNDER BAY, ON **Oshki-Pimache-O-Win**	**8**	WINNIPEG, MB **Wapaskwa Virtual Collegiate**	**12**	MEMBERTOU, NS **Mi'kmaw Kina'matnewey**

The following section highlights 12 Indigenous-led programs that offer e-learning, either as a core service or as a complement to in-person coursework.[39] This list is not exhaustive by any means: many other organizations offering Indigenous-led e-learning programs exist across North America. Many of the following courses are for Indigenous learners, while others are for all learners, often applying Indigenous pedagogies or content. As the previous section noted, broadband access is inextricable from access to education; accordingly, some of the organizations leading e-learning courses, such as the First Nations Technology Council and First Peoples' Cultural Council in British Columbia, DigitalNWT, and the Keewaytinook Internet High School in Ontario, are linked to first-mile broadband initiatives and/or broadband-related skills and community capacity building. Others offer services to urban students and/or communities that may be dependent on satellite or last-mile infrastructure.

39   ICTC selected programs through an environmental scan, and all programs listed either identify as Indigenous-led and/or Indigenous-created in their public-facing materials (e.g., websites, academic articles) or note that they receive their mandate from an Indigenous governing body.
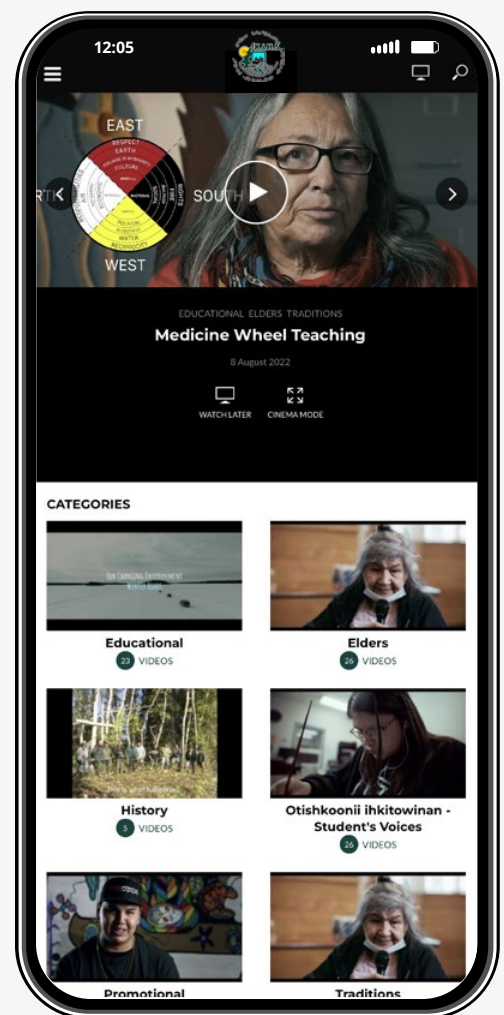
1 ▶ # Keewaytinook Internet High School

Keewaytinook Internet High School (KiHS) provides students in First Nation communities in Northern Ontario with an opportunity to complete accredited high school courses online. KiHS was founded in 1999 and mandated by the Northern Chiefs Tribal Council or Keewaytinook Okimakanak, with the goal of providing students with quality Indigenous-led secondary education in their own communities.[40] The school offers a wide range of options and programs and streams, including more than 80 courses (applied and academic), career preparation, and help for students in preparing for post-secondary education.[41] To deliver online programming effectively, KiHS partners with communities to set up distributed classrooms in band offices, community centres, and elementary schools and ensures that students have access to an in-person teacher and can connect with other students. Further, on-site teachers provide extra guidance to students as needed.[42]

One KiHS graduate discussed the importance of quality teaching and mentorship for online learning, stating, "I didn't think that I had the capabilities to do the online work, but after a couple of weeks and getting to know my teachers and mentors, I felt better about myself. The teachers explained things so that I could understand, and that helped me to not be so nervous."[43]

A key offering of KiHS has to do with students' ability to learn at home. A leader in KiHS mentioned that it is important for students to be able to stay with their families and to integrate language and culture into education:

❝ *If students are flying out to other areas for their education, their traditional knowledge or culture isn't included in their education. This is a big priority for us. Although we're an internet high school, we make sure to go out on the land and incorporate those things into our online education, for example, by taking videos. We also allow our students to use school days to take part in local activities related to their culture, and we have different ways of including those types of activities in their regular coursework. Say they're out on hunting week, but we don't want them to miss their courses or not contribute to their course work. We could say to them, 'Okay, bring a [voice] recorder and record what you do.'*

---

40   "KiHS – Our History," Keewaytinook Internet High School, accessed September 18, 2023, https://kihs.knet.ca/kihs-our-history/
41   "2023-2024 School Year," Keewaytinook Internet High School, accessed September 18, 2023, https://kihs.knet.ca/
42   "We are Hiring!" Keewaytinook Internet High School, accessed September 18, 2023, https://kihsteaching.weebly.com/
43   "2023-2024 School Year," Keewaytinook Internet High School, accessed September 18, 2023, https://kihs.knet.ca/

Aboriginal Worldviews in Education: an Indigenous Massive Open Online Class

In their article "Indigenous pedagogies and online learning environments: a massive open online case study," Danielle Tessaro and Jean-Paul Restoule describe a case study of applying Indigenous pedagogies to a massive open online course (MOOC) called Aboriginal Worldviews in Education, hosted by Coursera since 2013, and led by Dr. Restoule at the Ontario Institute for Studies in Education (OISE). The authors comment that MOOCs require unusual pedagogical approaches because "learner contexts are essentially unknown."[44] In other words, while an educator might normally know important information such as a student's workspace, what devices they have access to, time of day and fatigue, or even nationality and language expertise, all of these are rendered unknowable by a course that anyone can access online at any time.

Tessaro and Restoule note that "there is no singular or prescribed set of Indigenous pedagogies, [but] literature on the subject tends to emphasize certain characteristics." One of these is "the emphasis on teaching and learning as immersed in community, place, and context."[45] The authors, therefore, note the challenge of creating a MOOC—a fundamentally "low-context" learning environment—aligned with Indigenous pedagogical approaches.[46]

Through a learner survey, discussion forum data, and course feedback, the authors looked for learner experiences related to Indigenous pedagogies. For example, Dr. Restoule describes one application of a four-quadrant Medicine Wheel as ensuring that education is holistic and engages not just the mind or intellect but also the spirit/intuition, emotion, and body. Students in *Aboriginal Worldviews in Education* reported feeling emotionally engaged, one saying, "The thing I have loved most about this course is the emotion that has come along with it. I have laughed, I have cried, but I think the most important thing is I now have a different understanding for the who, what, where, when, and why. And will go away with this wonderful experience in my heart." Other students described the course as transformational: "This course has changed the way I see everything."[47] Course content also engaged intuition and body through exercises related to position and perspective, such as activities "making the familiar strange," which asked participants to question their own assumptions. Finally, instructor interactions through "screen-side chats" responded to student questions and helped learners feel personally acknowledged and respected.

44   Danielle Tessaro and Jean-Paul Restoule, "Indigenous Pedagogies and Online Learning Environments: A Massive Open Online Course Case Study," AlterNative: An International Journal of Indigenous Peoples 18, no. 1 (March 1, 2022): 182–91, https://doi.org/10.1177/11771801221089685 p. 182.

45   Danielle Tessaro and Jean-Paul Restoule, "Indigenous Pedagogies and Online Learning Environments: A Massive Open Online Course Case Study," AlterNative: An International Journal of Indigenous Peoples 18, no. 1 (March 1, 2022): 182–91, https://doi.org/10.1177/11771801221089685 p.183.

46   Ibid.

47   Danielle Tessaro and Jean-Paul Restoule, "Indigenous Pedagogies and Online Learning Environments: A Massive Open Online Course Case Study," AlterNative: An International Journal of Indigenous Peoples 18, no. 1 (March 1, 2022): 182–91, https://doi.org/10.1177/11771801221089685 p. 185.

Other Indigenous-led MOOCs and asynchronous online classes offered in partnerships with universities have become broadly available over the last five years, including:

Indigenous Canada, a course created through a partnership between the University of Alberta Faculty of Native Studies and Coursera:

> *Indigenous Canada is a 12-lesson massive open online course (MOOC) from the Faculty of Native Studies that explores the different histories and contemporary perspectives of Indigenous peoples living in Canada. From an Indigenous perspective, this course explores complex experiences Indigenous peoples face today from a historical and critical perspective, highlighting national and local Indigenous-settler relations. Topics for the 12 lessons include the fur trade and other exchange relationships, land claims and environmental impacts, legal systems and rights, political conflicts and alliances, Indigenous political activism, and contemporary Indigenous life, art and its expressions.[48]*

nisitohtamowin ᓂᓯᑐᑕᒧᐃᐧᐣ An Introduction to Understanding Indigenous Perspectives in Canada, a course from the First Nations University of Canada and Reconciliation Education:

> *This one-hour course provides an introduction to understanding Indigenous perspectives in Canada. It is offered as a free public resource for the month of June in honour of National Indigenous History Month. Taking action toward understanding Indigenous perspectives can lead to reconciliation, better relationships, and various opportunities when it comes to the economy, community partnerships, the environment, business, and beyond. This course is just a first step on the journey to understanding. We encourage all participants to seek further learning opportunities either with Indigenous peoples in your own region or at First Nations University of Canada.[49]*

48   "Indigenous Canada," Coursera, n.d., accessed Oct 19, 2023, https://www.coursera.org/learn/indigenous-canada

49   "Nisitohtamowin ᓂᓯᑐᑕᒧᐃᐧᐣ An Introduction to Understanding Indigenous Perspectives in Canada," n.d., accessed Oct 19, 2023, https://our-impact.bmo.com/fnu-elearning/#/

DigitalNWT:
# Introduction to Digital Content and Connectivity

DigitalNWT is a multi-organization project guided by a Steering Committee of Indigenous governments and organizations that works with communities in the Northwest Territories to improve digital equity and digital literacy.[50] DigitalNWT trains community-based educators to offer training programs across the Northwest Territories and seeks to teach learners about internet access, online security, and data management so that they can better understand service limitations in their communities and acquire valuable skills.

DigitalNWT offers several online courses, including Introduction to Digital Content and Connectivity, which teaches learners to organize, share, and make digital content, and understand broadband networks, their needs and constraints, and how to map out a broadband network.[51] After completion, DigitalNWT notes that students gain a broader understanding of digital content generally and the inner workings and limitations of internet infrastructure.

Besides offering courses and training instructors, DigitalNWT has completed research on digital inequality,[52] and highlights digital innovators from the Northwest Territories and their stories on their website.[53] The organization also provides a CIRA (Canadian Internet Registration Authority) speed test on their website so that people living in the Northwest Territories can test their internet connection and see how their communities compare to others.[54]

DigitalNWT's programs and research are directly connected to the first-mile connectivity paradigm mentioned in the introduction, both in terms of its mission and its leadership.[55] Many nations in the Northwest Territories are far from large city centres and lack infrastructure, such as all-weather roads and affordable telecommunications access.

50   "About DigitalNWT," DigitalNWT, accessed September 18, 2023, https://www.digitalnwt.ca/about

51   "Course 2: Introduction to Digital Content and Connectivity," DigitalNWT, accessed September 18, 2023, https://www.digitalnwt.ca/course-2

52   Rob McMahon, Murat Akçayir, Michael B. McNally, Sydonie Okheena, "Making Sense of Digital Inequalities in Remote Contexts: Conceptions of and Responses to Connectivity Challenges in the Northwest Territories, Canada," International Journal of Communication 15, no. 1 (2021): 5229-5251, https://ijoc.org/index.php/ijoc/article/viewFile/18213/3621

53   "Celebrating Innovation: Digital Innovators," DigitalNWT, accessed September 18, 2023, https://www.digitalnwt.ca/digital-innovators

54   "Test your internet. Make a difference.,"DigitalNWT, accessed September 18, 2023, https://www.digitalnwt.ca/cira-speed-test

55   Co-director of DigitalNWT Rob McMahon is also one of the founders of the First Mile Connectivity Consortium. "Rob McMahon," DigitalNWT, accessed October 19, 2023. https://www.digitalnwt.ca/rob-mcmahon
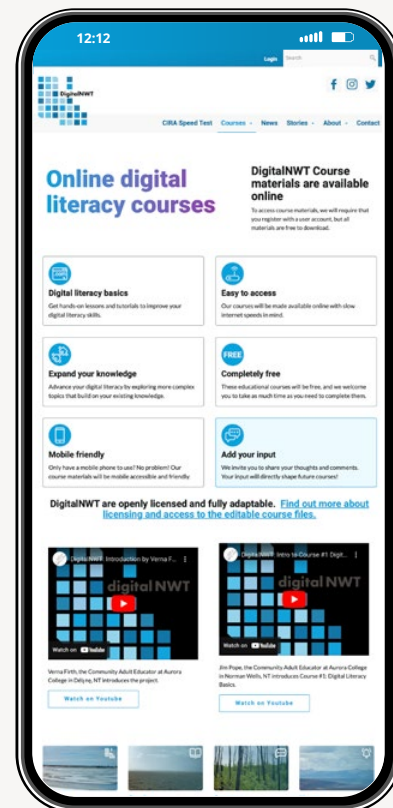
Coupled with lower household incomes relative to the Canadian average (in 2019, 20% of households in the Northwest Territories reported having difficulty meeting their financial needs, a figure that increased to as high as 54% in smaller rural communities[56]), rural Indigenous communities in the Northwest Territories struggle to access high-quality internet.[57] For example, residents of Paulatuk, a remote community in the Inuvik Region of the Northwest Territories on the Amundsen Gulf, pay nearly $80 per month for internet connection speeds of 5 Mbps, with a 60 GB usage limit and overage fees.[58] As a comparison, internet connection speeds of 75 Mbps (15 times faster than speeds available to residents of Paulatuk) and with no data usage limit or overage fees cost $65 per month in city centres in close proximity to internet infrastructure.[59] Nearly all respondents to DigitalNWT's 2021 study, completed in partnership with researchers from the University of Alberta, reported that internet service was too expensive; one interviewee remarked that internet was "more expensive than any of our household bills; [it is] the highest expense for our family."[60]

4   Oshki-Pimache-O-Win: Pimache-O-Win Pathways for Indigenous Women

Oshki-Wenjack was founded by the Nishnawbe Aski Nation (NAN) in 1996 to improve access to post-secondary education for Indigenous learners in Ontario and, more specifically, for NAN communities.[61] The school is named to honour the memory of Chanie Wenjack, a 12-year-old Anishinaabe boy who ran away from Cecilia Jeffrey Indian Residential School in 1966 and passed away trying to walk home (600 km in winter).[62] Oshki-Wenjack seeks to honour the memory of Chanie and others like him through strength-focused learning that also offers a way for Indigenous learners to remain in their own communities through a distance learning program. The Wenjack Education Institute offers both online and in-person classes from Thunder Bay and is committed to providing education that is community-based and welcoming to all students.

Among several programs, Oshki-Wenjack offers the Pimache-O-Win Pathways for Indigenous Women program, virtually or in the community. The short program is designed for women who have been out of school for some time or who have not completed high school.[63]

56   NWT Bureau of Statistics, "Financial Security: 2019 NWT Community Survey," February 28, 2020, ISSN-0827-3545. https://www.statsnwt.ca/recent_surveys/2019NWTCommSurvey/Financial%20Security2019.pdf

57   Rob McMahon, Murat Akçayir, Michael B. McNally, Sydonie Okheena, "Making Sense of Digital Inequalities in Remote Contexts: Conceptions of and Responses to Connectivity Challenges in the Northwest Territories, Canada," International Journal of Communication 15, no. 1 (2021): 5229-5251, https://ijoc.org/index.php/ijoc/article/viewFile/18213/3621

58   Ibid.

59   "Ignite Internet plans," Rogers together with Shaw, date accessed October 12, 2023, https://www.shaw.ca/internet/plans

60   Rob McMahon, Murat Akçayir, Michael B. McNally, Sydonie Okheena, "Making Sense of Digital Inequalities in Remote Contexts: Conceptions of and Responses to Connectivity Challenges in the Northwest Territories, Canada," International Journal of Communication 15, no. 1 (2021): 5229-5251, https://ijoc.org/index.php/ijoc/article/viewFile/18213/3621

61   "The Story of a New Beginning," Oshki-Wenjack, accessed September 18, 2023, https://www.oshki.ca/about/our-story/

62   Ibid.

63   "Pimache-O-Win Pathways for Women," Oshki-Wenjack, accessed September 18, 2023, https://www.oshki.ca/programs/pimache-o-win-pathway/

The course is four weeks long and provides learners with information about high school completion programs for adult learners, shows how to apply for post-secondary education, how to apply for funding, and provides career coaching. Moreover, the program is completely free to all eligible learners. The course was designed to help Indigenous women who have been away from formal education continue their learning journey in a safe and culturally sensitive way.

5   # Anishinabek Educational Institute: The Native Community Worker; Traditional Healing Methods Diploma Program

The Anishinabek Educational Institute (AEI) was established in 1994 by the Union of Ontario Indians Education Directorate under the direction of the Anishinabek Grand Council.[64] AEI is a post-secondary institution that seeks to educate and provide programs for Anishinabek communities.[65] Throughout the pandemic, the AEI closed its doors but continued program delivery through online teaching to ensure that students could continue their courses without much interruption.

Among many other programs, the AEI offers a four-semester "Native Community Worker: Traditional Healing Methods Diploma Program" for those hoping to both work in the community and learn traditional counselling practices to care for the mental, physical, and spiritual needs of community members.[66] The diploma program can be completed either on-campus or through blended learning (online and on-campus). Over the program's four semesters, students explore topics such as psychology through an Indigenous lens, predominant health issues in Indigenous communities, counselling skills, and an overview of the relationship between Canadian law and Indigenous communities. Furthermore, the program features a field placement, combining practical learning with remote education.[67] After completion, the program prospectus notes that graduates should be well positioned to work in mental health and social services.
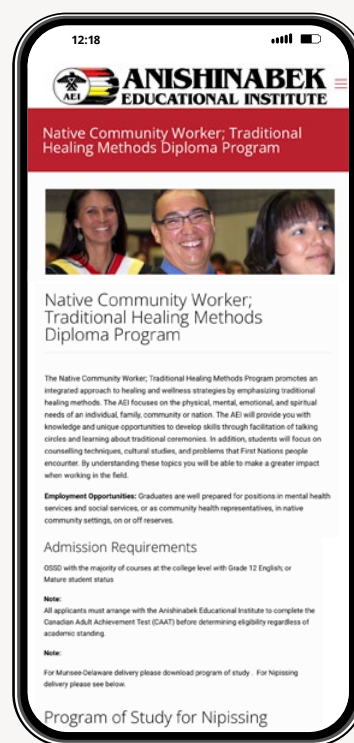
64   "About Us," Anishinabek Educational Institute, accessed September 18, 2023, https://aeipostsecondary.ca/about-us/
65   Ibid.
66   "Native Community Worker; Traditional Healing Methods Diploma Program," Anishinabek Educational Institute, accessed September 18, 2023, https://aeipostsecondary.ca/programs/native-community-worker-traditional-aboriginal-healing-methods-diploma-program/
67   Ibid.

6   First Nations Technology Council: Data Science Program

The First Nations Technology Council (FNTC) is an Indigenous-led non-profit mandated by the BC Assembly of First Nations, the First Nations Summit, and the Union of BC Indian Chiefs that works to improve digital literacy, teach and provide guidance regarding digital technology, and to improve internet access and connectivity for all Indigenous communities in BC.[68] The organization was established in 2002 with the goal of introducing Indigenous epistemologies and cultures to the development of modern technology due to historical exclusion from the evolution of technology throughout colonialism in Canada.[69] To accomplish this goal, The First Nations Technology Council has developed the Indigenous Digital Equity Strategy, which seeks to find solutions concerning access to technology and systemic barriers for Indigenous communities.[70] Further, the First Nations Technology Council offers 18 courses and boasts higher completion rates than non-Indigenous programs.[71]

Among the aforementioned courses, the First Nations Technology Council offers an eight-week data science course that is delivered through online instruction and teaches students Python coding, the fundamentals of machine learning, the fundamentals of programming, data modelling, data organization, data visualization, and much more.[72] The data science program is funded for Indigenous learners living in BC over the age of 18. All equipment needed to complete the course is provided, and learners can apply for funding to partially cover their living expenses. Upon completion, students earn a certificate that can be used to supplement prior education or to take entry-level roles in data science.

The First Nations Technology Council's vision is to secure a future where Indigenous peoples claim their space in an era of digitization through stewardship, strengthen Indigenous communities, protect Indigenous lands, customs, and languages, and pave the way for future generations.[73]

7   Mi'kmaw Kina'matnewey and Nova Scotia Virtual School: Mi'kmaw Language 11

Mi'kmaw 11 teaches conversational language skills through games, written assignments, and interpersonal interaction and is now offered in a variety of formats in Nova Scotia, including in the Nova Scotia Virtual School (NSVS). By the end of Mi'kmaw 11 studies, students are expected to have "a general understanding of the nature and function of the Mi'kmaw language [and] an understanding and appreciation of the Mi'kmaw language as an expression of a distinctive culture."[74]

68   "Our Story," First Nations Technology Council, accessed September 19, 2023, https://www.technologycouncil.ca/our-work/our-story/

69   Ibid.

70   "Indigenous Digital Equity Strategy," First Nations Technology, accessed September 19, 2023, https://www.technologycouncil.ca/our-work/research/indigenous-digital-equity-strategy/

71   "Indigenous Digital Skills Training," First Nations Technology, accessed September 19, 2023, https://www.technologycouncil.ca/our-work/digital-skills-training/

72   "Data Science," First Nations Technology accessed September 19, 2023, https://www.technologycouncil.ca/training-program/data-science/

73   "Our Story," First Nations Technology Council, accessed September 19, 2023, https://www.technologycouncil.ca/our-work/our-story/

74   "Mi'kmaw Language 11," NSVS Course Catalog, n.d., accessed Oct 18, 2023, https://elearning.ednet.ns.ca/index.php/cm-course/mikmaw-language-11/#:~:text=Students%20will%20learn%20and%20practice,to%20communicate%20using%20the%20language

Mi'kmaw 11 curriculum was developed as a partnership between Mi'kmaw Kina'matnewey and the Nova Scotia Department of Education and Early Childhood Development.[75] The NSVS offers online secondary education for students attending public high schools in Nova Scotia, adding supplementary course options that might not otherwise be available in a student's location.

8 ▶ SCcyber E-Learning Community: Heroes at Home

SCcyber, which offers both an Indigenous-led e-learning institute for Alberta students aged 15 to 19 and programs for adult learners, was built by members of Sunchild First Nation.[76] Community members developed a community-led e-learning model to better serve Indigenous students, offering high-quality education and more experienced teachers to students in remote locations.[77] SCcyber's E-learning model enables and encourages interaction between students and teachers through regular homework help times and open lines of communication, as students can reach teachers by text message, phone call, or email to get extra help throughout their courses.[78]

Besides offering courses to allow students to fulfill Alberta's High School Diploma requirements, SCcyber also offers additional courses on a variety of different subjects. Among those additional courses is a community-focused course named Heroes at Home, which seeks to help parents build skills related to resilience and mental well-being at home.[79] The course has 12 sessions, each highlighting a different focus area. Upon completion, students earn three high school credits.[80] For their commitment to providing quality education and Indigenous-focused programs, SCcyber has been recognized both internationally and nationally. SCcyber has been awarded the Changemakers Initiative: Inspiring Approaches to First Nations, Métis and Inuit Learning Award for their use of e-learning technology for program delivery; SCcyber has also been awarded the SITE (Society for Information Technology and Teacher Education) Award for Outstanding Service to Digital Equity.[81]
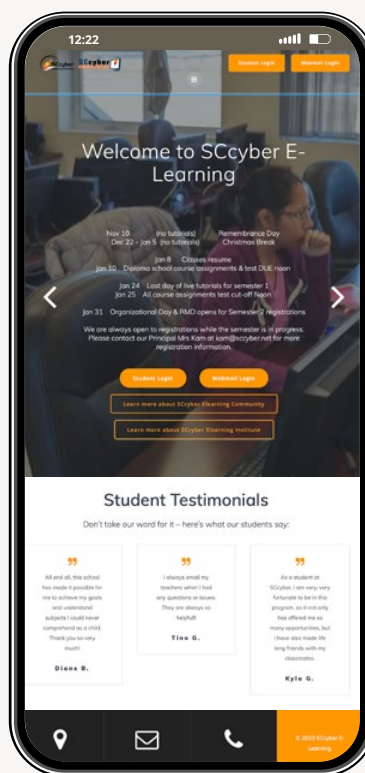
75 "Foundation for Mi'kmaw Language Curriculum," Foundation for Mi'kmaw Language Curriculum, 2015. https://curriculum.novascotia.ca/sites/default/files/documents/curriculum-files/Foundation%20for%20Mi%27kmaw%20Language%20Curriculum.pdf

76 "About SCcyber E-Learning Community," SCcyber E-Learning, accessed September 20, 2023, https://sccyber.net/about-sccyber-e-learning-community/

77 Ibid.

78 Ibid.

79 "Heroes at Home," SCcyber E-Learning, accessed September 20, 2023, https://sccyber.net/heroes-at-home/

80 Ibid.

81 "Award Winning Program," SCcyber E-Learning, accessed September 20, 2023, https://sccyber.net/award-winning-program/

Moreover, student testimonials also show the importance of SCcyber's program and how it has impacted the lives of individuals. One student commented, "This school has made it possible for me to achieve my goals and understand subjects I could never comprehend as a child. Thank you so very much!"[82]

9   Wapaskwa Virtual Collegiate: Current Topics in First Nations, Métis, and Inuit Studies

Wapaskwa Virtual Collegiate (WVC) is an Indigenous-led e-learning organization that works in partnership with the Manitoba First Nations Education Resource Centre to provide quality high school education.[83] Wapaskwa Virtual Collegiate offers online classes for students in Grades 9 through 12 and marries conventional curricula with an Indigenous lens. For example, WVC offers essential classes like Precalculus, Chemistry, Biology, English, etc., but also offers Ojibwe language classes (Grades 9 and 10) and a current events class that focuses on First Nations, Métis, and Inuit Studies (Grade 12).[84]

WVC's Current Topics in First Nations, Métis, and Inuit Studies teaches students to think critically concerning Canadian history and Canada's contemporary superstructure as it relates to Indigenous realities. Further, the course teaches students about Indigenous diversity in Canada, Indigenous perspectives, cultures, histories, and accomplishments. The goal of the course is to encourage First Nation, Métis, and Inuit students to revel in the breadth of their cultures and peoples while also learning valuable information concerning the challenges Indigenous peoples in Canada currently face. For non-Indigenous students, the course seeks to be an introduction to larger conversations concerning Indigenous peoples and their histories and, by extension, help non-Indigenous students become informed allies who are empathetic to and understanding of Indigenous issues.[85]

Wapaskwa Virtual Collegiate fills several important gaps in Manitoba's e-learning ecosystem: offering an Indigenous lens in education for all learners, and second, e-learning designed to maximize accessibility for learners across remote and rural First Nations in Manitoba. Its platform for prospective students addresses the question "What is e-learning?" with the following description of what new entrants can expect:

> *We provide First Nation students from the province of Manitoba with the support and resources needed to take their high school education to the next level. Students begin by logging into a "virtual" learning environment where their course materials are available online. From here, our teachers begin supporting students in real-time, providing engaging and interactive ways so that students feel like they're part of a group and not left on their own. Not only will they have access to the best learning resources when they're in the classroom, WVC provides excellent support for those needing help outside of regular classroom hours.[86]*

---

82   "Welcome to SCcyber E-Learning," SCcyber E-Learning, accessed September 20, 2023, https://sccyber.net/

83   "About," Wapaskwa Virtual Collegiate, accessed September 20, 2023, https://wapaskwa.ca/about/

84   "Courses," Wapaskwa Virtual Collegiate, accessed September 20, 2023, https://wapaskwa.ca/courses/

85   Ibid.

86   "Why Wapaskwa," Wapaskwa Virtual Collegiate, accessed September 20, 2023, https://wapaskwa.ca/why-wapaskwa/what-is-e-learning/

10 ▸ Indigenous Continuing Education Centre: Data Center Virtualization

The Indigenous Continuing Education Centre (ICEC) was established by the First Nations University of Canada to provide more learning and schooling opportunities to adult learners at different stages of their learning journey and to help adult learners re-skill and/or up-skill, build networks, learn and share Indigenous knowledge, and develop professionally.[87] ICEC offers transformative Indigenous knowledge-based courses through their micro-credential and certificate programs that are designed for adult learners who are not seeking a degree or who need professional development. Further, ICEC programs can be completed online.[88]

One of the courses ICEC offers, Data Centre Virtualization, is delivered in partnership with VMWare IT Academy and Academic Software Licensing Programs so that upon completion students are prepared to work in IT.[89] Data Centre Virtualization provides students with essential skills needed for data collection, data categorizing, and data analysis, as well as a foundational understanding of data centre technology, basic troubleshooting, and a basic introduction to cloud resource management, among other things. The course also prepares learners to become VMware VCTA (VMware Certified Technical Associate) certified.[90] VCTA certification validates that a professional has the skills to perform system administration and can reliably operate and manage virtual machines through VMware ESXi – an IT administration hypervisor used to streamline IT processes.[91] Through five modules, students are introduced to virtual machines and to vSphere – VMware's server virtualization software – before being taught how to navigate vSphere and how to make use of it.

11 ▸ First Peoples' Cultural Council: Mentor-Apprentice Language Program

The First Peoples' Cultural Council (FPCC), based in British Columbia, is an Indigenous-led Crown Corporation established in 1990 that is committed to furthering and revitalizing Indigenous arts, heritage, languages, and cultures in British Columbia.[92] FPCC provides funding, resources, programs, and workshops to Indigenous communities in the hopes of rebuilding and strengthening Indigenous epistemologies. Further, FPCC has four types of programs: community outreach, heritage, languages, and arts.

87   "About ICEC," Indigenous Continuing Education Centre, accessed September 20, 2023, https://iceclearning.fnuniv.ca/pages/about

88   Ibid.

89   "Data Center Virtualization," Indigenous Continuing Education Centre, accessed September 20, 2023, https://iceclearning.fnuniv.ca/courses/data-center-virtualization

90   Ibid.

91   "VMware ESXI," VMware, accessed September 20, 2023, https://www.vmware.com/ca/products/esxi-and-esx.html

92   "Overview," First Peoples' Cultural Council, accessed September 21, 2023, https://fpcc.ca/about-us/overview/

Among FPCC's many programs, FPCC offers FirstVoices, an online environment that allows communities in BC to upload language assets like dictionaries, custom keyboards, songs, and stories. FirstVoices is hosted on cloud infrastructure in Canada, and FPCC also partners with communities who prefer to host their language data on a Nation-owned server, supporting Indigenous data sovereignty.[93] FPCC staff offer in-person and distance training services to help communities learn how to use the FirstVoices interface and upload their archives. In turn, the FirstVoices site acts as an e-learning platform for First Nations language learners seeking resources to support their learning journey.[94]

12 ▸ Northern Nishnawbe Education Council: The Wahsa Distance Education Centre

Northern Nishnawbe Education Council (NNEC) is a First Nations not-for-profit educational organization offering secondary and post-secondary education through several programs, including the Wahsa Distance Education Centre. With offices in Lac Seul, Sioux Lookout, and Thunder Bay, NNEC is distributed throughout Northern Ontario and seeks to advance First Nations self-determination through culturally relevant education.[95] The Wahsa Distance Education Centre is a private high school that provides high-quality education services across 200,000 square kilometres of northwestern Ontario and includes Ojibway, Cree, and Oji-Cree communities.[96] The program uses a variety of technologies, ranging from SMARTboards and videoconferencing to FM radio, telephone tutoring, and correspondence for independent learning.[97] In fact, the Wahsa Distance Education Centre was one of the first distance education centres in the region, opening in 1991 and offering high school courses by radio before most communities it served had access to internet.[98]

Each of these programs, along with many others across the North American continent, is using enabling technologies to offer innovative distance-learning programming to Indigenous students who wish to remain in their communities, facilitating access to new career prospects, language training, post-secondary preparatory classes, and other opportunities. Furthermore, Indigenous innovation in post-secondary pedagogy is producing courses such as MOOCs for all students who want to broaden their horizons. The final section of this paper examines an example of an Indigenous-led upskilling organization for all students.

93   "FirstVoices," First Peoples' Cultural Council, accessed September 21, 2023, https://fpcc.ca/stories/firstvoices/
94   Ibid.
95   "About," Northen Nishnawbe Education Council, accessed October 19, 2023, https://www.nnec.on.ca/about
96   "Wahsa Distance Education Centre," Northen Nishnawbe Education Council, accessed October 19, 2023, https://www.nnec.on.ca/wahsa-distance-education-centre
97   Ibid.
98   Tanya Talaga, Seven Fallen Feathers, House of Anansi, 2017.

Introduction: Jelly Academy

As our world has become increasingly digitized, digital skills have almost invariably become prerequisites for participation in many workplaces and schools. Based in British Columbia, Jelly Academy—an Indigenous-owned and operated digital skills training organization—provides courses, programs, and scholarships to prepare learners for work in digital marketing and provides learners with digital skills that match real-world industry needs. Jelly Academy is committed to increasing diversity in digital marketing, and its enrolled students are 55% Indigenous (status, non-status, Métis, and Inuit), 75% identify as equity-deserving groups, and 55% of their students are women.[99]

In partnership with Jelly Academy, ICTC interviewed several of the program's graduates, administrators, students, and current instructors to prepare a case study of Indigenous-led e-learning in Canada. The rest of this article will outline Jelly Academy's programs, challenges, successes, and impacts.

Programs

Jelly Academy was established in 2015 and offers several courses, job placement programs, funding opportunities, and learning resources.[100] Jelly Academy offers six courses, each focusing on essential skills for digital marketing: for example, they offer a self-paced, online B2B Sales Specialist Program that covers strategic planning, communication, prospecting, and negotiations.[101] Another Jelly Academy program is a Digital Marketing Bootcamp. It is led by digital marketing experts and teaches learners about marketing through social media, social media ads, Google Ads and Analytics, search engine optimization (SEO), email marketing and automation, and the importance of public relations.[102]

---

99   "Future ready skills training and micro-credentialing to land a job, or grow your business with digital marketing,"
        Jelly Academy, accessed September 2022, 2023, https://jellyacademy.ca/

100   "The Digital Skills Hub, "Jelly Academy, accessed September 22, 2023, https://jellyacademy.ca/about-us

101   "The B2B Sales Specialist," The B2B Sales Specialist, Jelly Academy, accessed September 22, 2023,
        https://jellyacademy.ca/courses-b2b-sales-specialist-program

102   "Digital Marketing Bootcamp," Jelly Academy, accessed September 22, 2023,
        https://jellyacademy.ca/courses-digital-marketing-bootcamp

Along with course offerings and funding opportunities, Jelly Academy partners with several businesses and post-secondary institutions, including but not limited to the University of British Columbia, Dropbox, Deloitte, and Toronto Metropolitan University, to provide students with internships that they can then leverage into full-time roles.[103] Jelly also partners with technology companies like Google, Meta, and Hootsuite to provide industry-recognized credentials to graduates. Employers can submit job postings directly to Jelly Academy for their website so that graduates have immediate access to work opportunities.[104]

Challenges and Solutions

Jelly Academy is Indigenous-led and provides inclusive digital learning, funding opportunities, and job opportunities; however, there remain some challenges for students and program delivery.

Challenge #1: Access to hardware, broadband, and digital literacy skills. One Jelly Academy instructor remarked that access to a computer has been a reoccurring issue and that some students complete courses on their phones, which becomes problematic if the student's phone is too old. In other instances, the digital divide is apparent as some students lack an understanding of the foundational technical skills fundamental to digital marketing or have access to technology but lack the basic digital skills to complete course materials.

Solutions: In reference to access to technology barriers, one program administrator mentioned that Jelly Academy has worked with companies like Best Buy to supply students with laptops and smartphones to allow them to participate in courses. Ultimately, the goal is to remove as many barriers to entry as possible because education should not be stratified along economic lines. It is important to consider the challenges facing students, but it is even more important to consider ways to improve their skills through strength-based teachings that give learners skills and credentials that are relevant and based on industry needs. Jelly Academy's founder, Darian Kovacs, put it this way, "We utilize [the] strengths of Indigenous learners. [They are] incredible storytellers. They are elders in their lives. So give them tactical pieces like resume help and help them with credentials. There are enough people focusing on the weaknesses."

Challenge #2: Financial accessibility and flexibility. The cost of education and length of conventional education can be a barrier for adult learners, particularly those with families.

Solutions: To make sure that their programs are accessible to learners of different income levels and from equity-deserving groups, Jelly Academy offers scholarship programs to students, many of which do not require an academic transcript or other documentation. Among their scholarships, Jelly Academy provides the following: an Indigenous Scholarship for students who identify as Indigenous (First Nations with or without status, Métis, or Inuit); a Black and People of Colour Scholarship for visible minorities; a Women in Digital Scholarship for those who identify as women; and the Digital Marketing Career Ready Scholarship. Each covers up to $3,500 in course fees.[105]

103   "Digital Marketing Bootcamp," Jelly Academy, accessed September 22, 2023,
104   https://jellyacademy.ca/courses-digital-marketing-bootcamp

        "Search our index of job listings to find the perfect fit for you," Jelly Academy, accessed September 22, 2023,
105   https://jellyacademy.ca/job-board

        "Growth For All: Funding Oppurtunities," Jelly Academy, accessed September 22, 2023, https://jellyacademy.ca/funding

Considering gaps in access to post-secondary education and income, Jelly Academy's scholarship programs and others like them could be the reason an underprivileged student attends post-secondary education. One student mentioned that scholarships had allowed them to participate in Jelly Academy courses and that Jelly Academy's online class structure gave them the time to complete course materials while working and caring for their family.

Challenge #3: Social and networking opportunities in e-learning. The online class format can limit networking opportunities and can make it difficult for students to build connections with one another.

Solutions: Interviewed former students, instructors, and administrators listed solutions such as making classes more interactive and increasing the number of industry partnerships to provide students with more opportunities after graduation. In addition, one Jelly Academy instructor modified classes to allow for more collaboration and connection between students by beginning classes 10 minutes early and providing a space for students to learn about each other and connect.

Challenge #4: Lack of Indigenous knowledge and voices in courses. One student mentioned that courses could've used more of an Indigenous element and could benefit from more Indigenous voices.

Solutions: One student suggested that Jelly Academy could benefit from including Knowledge Keepers in the virtual classroom as guests. This would increase Indigenous visibility while also adding additional considerations from someone not in the field. The student further suggested that Jelly Academy provide honorariums to Knowledge Keepers who participated in classes.

Successes and Impact

Through industry-focused programming that provides learners with directly applicable skills, Jelly Academy has impacted the careers and lives of many of its students. Much of Jelly Academy's success and impact is a result of its safe and inclusive learning atmosphere and the real-world applicability of the expertise imparted to students. One student said, "Being [in] a Métis or Indigenous cohort made it a safer place, knowing people are coming from similar lines of understanding. Some places where you're the only Indigenous person, it can be intimidating [...] You want to disappear or go to the back of the class. Instead, [Jelly Academy] makes it more welcoming." Echoing this statement, another student said, "[Jelly Academy Administrators are] conscious about making sure that they represent diversity and inclusion – all of the instructors come from different backgrounds, and it felt great to come into a safe space." Safe learning spaces that foster curiosity and openness can act as catalysts for learning – engagement with course content requires comfortability.

Students also said they enjoyed that instructors worked in the roles they taught and were able to draw on the skills needed from their experiences, which provided a real-world context. Others liked that courses were condensed and streamlined, as opposed to typical semester-based programs that are typically less practical for working professionals and adult learners.

By providing a safe space where students can engage in course materials and see themselves represented in the classroom, Jelly Academy has supported graduates in launching and expanding their own businesses or online operations. One graduate went as far as to say, "I owe Jelly Marketing everything for my business growth." Another former student remarked that they have applied Jelly Academy learnings to their current role. Graduates also noted that the knowledge they gained from Jelly Academy courses and programs motivated them to continue their lifelong learning goals by seeking out other Jelly Academy courses and/or other programs focused on digital marketing skills.

Although Jelly Academy is relatively small, its impact is particularly profound. Jelly Academy has successfully carved out a niche that is both restorative and practical for its students, especially for those who are Indigenous or from other underprivileged groups. From providing strength-based teachings to student-support offerings in the form of financial aid and job opportunities to creating a safe environment that enables Indigenous students to learn and grow without judgment, Jelly Academy has found a way to give underrepresented students the tools and opportunities to succeed in digital marketing roles that have been and continue to be dominated by more privileged members of Canada's workforce. The importance of this kind of work and education cannot be overstated.

More generally, Jelly Academy represents the importance of diversity in digital marketing. Consumers, particularly youth, are becoming increasingly aware of the importance of diversity and inclusion, and are better able to recognize inauthentic marketing campaigns that co-opt the language and aesthetics of youth movements for profit.[106] Consequently, it is increasingly important that diverse voices are involved in the marketing process. A 2021 Deloitte survey completed by more than 11 thousand consumers worldwide found that 57% of consumers had more brand loyalty to brands they felt were committed to addressing and accounting for social inequity.[107] Nearly 95% of respondents aged 18–25 expected companies to act on pertinent social issues, and 90% said they would be more willing to buy products they felt were good for society.[108] Evidently, consumers want companies to not only be aware of social issues but to actively search for solutions in their own business operations, and marketing is the key to communicating to consumers that these solutions are being sought out and developed. This starts with who companies hire. Jelly Academy and its mission to provide essential digital skills training for digital marketing are reminders of the importance of accessible, real-world education for equity-seeking groups.

---

106 Jennifer Veenstra, Stacy Kemp, Barbara Venneman, Tim Murphy, "2022 Global Marketing Trends: Thriving through customer centricity," Deloitte Insights, October 19, 2021, https://www2.deloitte.com/us/en/insights/topics/marketing-and-sales-operations/global-marketing-trends/2022/diversity-and-inclusion-in-marketing.html

107 Ibid.

108 Ibid.

Conclusion

E-learning and distance learning have long been in effect across Canada, and Indigenous-led e-learning has also played an innovative role in this space since its inception. From early radio-run schools and language programs to ongoing Indigenous-run massive open online classes and internet high schools, Indigenous-led e-learning has brought pedagogical advances to learners across the continent. However, enabling technologies like access to affordable high-speed internet are a crucial component of Indigenous-led e-learning and a mix of first-mile and last-mile broadband initiatives are still required to guarantee access to education and other crucial government services in rural and remote areas. This paper has highlighted Indigenous-led e-learning programs that are filling important gaps in secondary education identified by the Truth and Reconciliation Commission by enabling Indigenous students to pursue high-quality high school classes from their communities. Other programs are offering content for adult and life-long learning, bringing Indigenous pedagogy and content, digital literacy, and other essential skills to students. Supporting Indigenous-led e-learning is a crucial part of Canada's reconciliation process.

Appendix: Methodology

ICTC shaped this project using a participatory methodology. First, ICTC conducted a literature review and environmental scan to identify Indigenous e-learning professionals and subject matter experts across Canada. Subsequently, ICTC conducted two rounds of consultations with nine leaders in this space in the form of one-hour, unstructured interviews, followed by report-backs conducted over Zoom. ICTC team members solicited feedback from consultants on the appropriate scope and activities for a project on Indigenous-led e-learning.

The ICTC team received extremely valuable advice for shaping this project from the consultation process. Advice included the following:

- Avoid a pan-Indigenous study and respect the diversity of Nations and programs in Indigenous-led e-learning

- Avoid a deficit-focused analysis of education in Indigenous communities and instead adopt a case-study approach, highlighting the strengths of existing Indigenous-led e-learning programs

- Avoid offering a one-size-fits-all analysis of Indigenous-led e-learning programs or the best way for industry members to support them

- Develop partnerships with Indigenous-led e-learning programs and ask what support they might need

Following the consultation series, ICTC worked with two partners: KiHS and Jelly Academy. With KiHS, ICTC connected program instructors to Indigenous technology leaders for a KiHS podcast series. In the live-streamed podcast, guests spoke with instructors and students about remote career opportunities in technology that could be pursued in the community. With Jelly Academy, ICTC conducted third-party interviews with graduates and administrators to write a summary of the program for this article. Finally, ICTC conducted an updated literature review and wrote a small set of case studies highlighting Indigenous-led e-learning programs across Canada.