



PROJECT INSIGHTS REPORT

Empowering the Northern workforce: Information technology readiness in the North

Tech and Automation, Inclusive Economy

EXECUTIVE SUMMARY

The information technology (IT) sector in Manitoba, particularly in Northern communities, faces significant challenges due to a shortage of qualified individuals to fill numerous job openings. Postsecondary IT programs, which are primarily located in southern Manitoba, often do not accommodate the unique needs of Northern students, who face barriers such as relocation, high costs and a shortage of skills deemed prerequisite by the postsecondary programs. Indigenous women, in particular, are underrepresented due to systemic barriers and familial responsibilities.

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PARTNERS

[University College of the North](#)

LOCATIONS

Manitoba
Saskatchewan

INVESTMENT

\$1,775,354

To address these challenges, the University College of the North (UCN) developed the Information Technology Readiness North (InTeRN) program, which is exclusively designed for Northern Indigenous women. InTeRN is a 10-month certificate program focusing on entry-level IT skills through work-integrated learning (WIL) and cultural program elements. The program completion rates surpassed those of traditional certificate programs due to hands-on learning, community building and the integration of Indigenous approaches. The findings from this project underscore the need for postsecondary institutions to adapt to innovative program models to better support diverse student needs.

KEY INSIGHT #1

With a completion rate of 87% in the first cohort and 75% in the second cohort, a key lesson that was reinforced is the importance of integrating Indigenous knowledge in education and developing programs that holistically support Indigenous students.

KEY INSIGHT #2

The InTeRN program used the Sweetgrass Model to braid in Indigenous approaches and knowledge to the program curriculum and structure, which better supported Indigenous students.

KEY INSIGHT #3

The InTeRN program’s focus on building community among the cohort members was highly valued by the instructors and students.

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The Issue

There is a gap in the current IT landscape in Manitoba, with an estimated 3,000 job openings but not enough qualified individuals to fill them. This gap is even more stark in Northern Manitoba, where the workforce gap has implications for the province’s ability to strengthen IT infrastructure across rural and remote communities.

The IT industry remains largely unknown to Northern residents and continues to still be a male-dominated one. Many young women in the North and Indigenous women face additional barriers to participating in any postsecondary education due to family responsibilities. As a result, young people in the North, particularly Indigenous women, are opting not to join the IT field, and targeted efforts are needed to open up opportunities and attract Northern and Indigenous women to IT training and employment.

Though postsecondary institutions have been trying to address the labour market gap in the IT sector through academic programs, there has been limited success for Northern residents. The IT programs offered by southern institutions do not provide the right support to address the needs of Northern residents. For instance, to attend programs at southern institutions, Northern residents need to relocate for extended periods of time. In doing so, they temporarily lose their connections to community and family supports. The cost of living and of the programs themselves can make it difficult for Indigenous students to travel back to their communities, deepening their social isolation and ultimately impacting their overall success. Additionally, many Northern students lack the prerequisite academic and essential skills necessary for success in a postsecondary institution and require additional support.

What We're Investigating

To address the labour market gap and support more Indigenous women in IT training and employment, UCN developed and launched the InTeRN program. The program was designed so that Northern Indigenous women could build the skills required to confidently enter the IT sector in Manitoba. InTeRN is a 10-month certificate program focused on teaching entry-level IT knowledge and skills to students, coupled with social supports, flexible terms of study, and work-integrated learning with industry partners such as [Computers for Schools Manitoba](#).

The program combined IT-related skill development with culture-infused methods, teaching and storytelling to support graduates in becoming role models to other Indigenous women considering employment in the IT sector. The intention of the program design was to help overcome barriers that block the participation of Northern residents in IT industries in Manitoba and to produce graduates to strengthen the workforce, support their families and communities, and become role models to others.

The project aimed to address the following questions:

- Could the program help improve success rates for Northern students engaged in IT training and employment?
- Could UCN operate a program by making hands-on, practical learning the central component of the curriculum, and the theoretical training would be woven into work-integrated learning rather than the other way around?
- Could the unique nature of the programming be supported by those responsible for the students—UCN, student sponsors, social assistance agencies, families?
- Could UCN develop a model of training that integrates more prominently work-integrated learning that could be

replicated in other sectors of postsecondary training?

In spring 2020, the UCN secured funding from the Future Skills Centre to pilot the InTeRN program. Due to the implications of the pandemic, the program geographically focused on the region of the Opaskwayak Cree Nation / The Pas, Manitoba. In 2021, UCN worked with stakeholders and departments on course and program development. With the reopening of campus in fall 2021, the InTeRN program launched, with eight students in the first cohort.

With additional funding secured from the Future Skills Centre in 2022, UCN was able to continue the work of the InTeRN program to graduate the first cohort and source a second. Additionally, the InTeRN program further expanded to include additional elements:

- a “Train-the-Trainer” program, in which graduates of the first cohort mentor Indigenous IT instructors;
- a “Learning Technology Facilitators Training” (LTF Training) program to assist instructors and professors in delivering courses using distance technologies;
- an “Information Technology Support Technician” (ITST) certificate, which is open to all students and taught by existing UCN IT-related instructors. Additionally, UCN was able to expand geographically to move part of the programming into the region of Thompson, Manitoba.

What We’re Learning

Across all programs (InTeRN, Train-the-Trainer, ITST and LTF Training), 25 students were enrolled in full-time programming and 21 completed the various programs. The first cohort of the InTeRN program accepted eight students, and seven completed the program. The second cohort had four students enrolled, and three completed the program. While the enrolment numbers were low compared to other certificate programs offered at UCN, InTeRN’s completion rates surpassed those of many other faculties, including business, health, and skilled trades and technology.

Mentoring for students and instructors

The InTeRN program took a dual mentorship approach, catering to both instructors and students to foster effective learning environments. The mentors who worked with students viewed investing time with individual students as an opportunity to impart wisdom and facilitate growth. The InTeRN program was able to work with key organizations including the University of Waterloo, Natives Rising and Girls Who Game. Through the mentorship aspects of the program, effective mentoring models emerged, including one-on-one mentorship with advanced faculty and near-peer mentors (i.e., mentors who are close in age to their mentees). The success of both models hinged on the fit of the mentee and mentor.

Work-integrated learning

The InTeRN program included work-integrated learning to bolster hands-on learning and provide a more holistic approach for students. The program worked with partner Computers for Schools Manitoba to host a depot in the classroom that allowed students to be immersed in an IT worksite. Being able to operate a depot gave students an opportunity for experiential learning and practical skills related to computers, as well as employability skills. The majority of students praised how the depot helped their learning and allowed them to incorporate theoretical training with hands-on work.

Deliberate community building

Many instructors and students highlighted that InTeRN functioned very differently compared to other college technical programs, referencing the creation of community spaces in the classroom and workshop, as well as the cohort structure of the program. Students felt a strong sense of support from their cohort and were able to navigate challenges and wins together. One comment from a program administrator illustrates the impact: "It sounds like they're creating community; it sounds like they're creating family. And that emulates [us] as a people: how we've survived for millennia is that we weren't individualized. We knew survival and success came as a group, with support for one another."

Integrating Indigegogy

The program intentionally integrated Indigenous knowledge and approaches when designing the IT program. Indigegogy is a term used to describe a method of teaching that is built on culturally sensitive concepts. This approach moved beyond just having Indigenous knowledge as add-ons to the curriculum, such as including an additional module, to having it grounded in the program design. The InTeRN program used an approach known as "Sweetgrass," to develop the curriculum and learning experiences. This approach focuses on the analogy of braiding to capture the sense that each student is a whole person. This approach was used to braid key aspects of Indigenous culture into the program curriculum and structure, such as storytelling, visits from Elders and the practice of holding Circles. Elders helped address conflicts students were facing both in and outside the program, such as at-home stressors. Students drove many of these elements rather than acting as participants, giving them a sense of ownership and power in the classroom.

What works for the students doesn't always work for the institution

While the InTeRN program's innovative model had many successes, administrators and students faced difficulties in navigating within a postsecondary institution. They faced challenges aligning the program with rigid financial systems and timelines. For instance, many students on financial assistance had their funding jeopardized when taking on additional paid work-integrated learning opportunities. Additional pay that students could receive caused unintended harm, decreasing the students' financial assistance and putting them at risk of losing subsidized housing or childcare, which were desperately needed. The program team worked with UCN to find workable solutions that paid students a weekly amount without impacting financial assistance. This highlighted the systemic barriers faced within the North and likely elsewhere across the country.

The InTeRN program took a unique approach to setting up the curriculum and learning models, using a competency-based education that differs greatly from traditional time-based learning. Competency-based education focuses on measurable skills and knowledge while allowing students to go at their own pace. This method conflicted with the traditional academic system, which favours having a clear end date to courses and programs. As a result, there were challenges in advertising the program to students, as many academic advisors and counsellors were unfamiliar with the learning model and struggled to explain the course trajectory to students.

Success for students


Students coming out of the program highlighted the impact the unique model had on not only their IT skills but overall growth. The program was successful in creating a team environment that helped to retain and support students. This was done through the cohort model, community building of Indigenous women, and faculty support. One instructor described how the program propelled a student from the first cohort into employment within the IT field: “I never would have dreamed that we now have, full-time, our first employed Indigenous female right under our own roof assisting with IT in the library using her new-found skills, now at UCN—and that was her dream job” (Instructor 1, interview). This instructor was referring to one of the first students from the first cohort to be employed full time. Additionally, in September 2023, a graduate from the InTeRN became an instructor in IT programming at UCN. This was a first for the institution, and a measure of how the InTeRN model has driven change.



Why It Matters

To support Reconciliation with Indigenous peoples and respond to the Truth and Reconciliation Commission’s Calls to Action, Canada needs to continue to integrate Indigenous knowledge and approaches into educational programs across the country. Integrating Indigenous values into educational programs “affirms Indigenous ways of being, knowing, and doing, and places control and ownership of helping practices firmly in the hands of Indigenous people.”

The lessons from this project have implications for public policy and practice because it provides key insights into how to develop a program that centres Indigenous knowledge and holistically supports Indigenous students. The project highlighted key lessons in how to design a program structure that both supports IT skills development and the overall well-being of students through the integration of cultural aspects. The program showcased that building community within academic programs is a key element in helping students feel supported and succeed.



Additionally, the project reveals the institutional barriers present within postsecondary institutions. This makes developing new academic programs that push against these rigid structures difficult. The project highlighted that the financial and internal academic systems created challenges for advertising and administering the program. However, having support from key senior leaders helped the program overcome and work through any administrative challenges and allowed the original model of the program to remain intact. Leaders within postsecondary education should recognize the value in innovative academic programs as they address the needs of diverse students. Further work is needed to allow program designs to continue and not deterred by the institutions.

What's Next

Following the success of the InTeRN program, the Manitoba government has fully funded the program, allowing it to continue at UCN as a program exclusively for Indigenous women.

Toward the end of the Future Skills Centre pilot period, the program expanded into the Thompson area. This enabled the university to expand the program's scope to focus on youth more generally (compared to strictly postsecondary students) and support careers in IT-related positions in new sectors, such as advanced manufacturing, digital productions and digital economies.

The Future Skills Centre acknowledges that the Anishinaabe, Mississaugas and Haudenosaunee share a special relationship to the 'Dish With One Spoon Territory,' where our office is located, bound to share and protect the land. As a pan-Canadian initiative, FSC operates on the traditional territory of many Indigenous nations across Turtle Island, the name given to the North American continent by some Indigenous peoples. We are grateful for the opportunity to work in this territory and commit ourselves to learning about our shared history and doing our part towards reconciliation.

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