



Project Insights Report

# Addressing Regional Labour Shortages



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Technology (NAIT)



**LOCATIONS**



**INVESTMENT**

771,638.00



**PUBLISHED**

March 2025



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## ☰ Executive Summary

Despite the labour shortage in forestry management in Canada’s North, there is a lack of innovative and engaging training methods and capacity to deliver reforestation skills to remote Indigenous communities.

To help meet the need for this training, and to make it accessible and more engaging in digital form, the Northern Alberta Institute of Technology (NAIT) created two courses that featured immersive, 360° photos and videos, and a tool kit for instructors who do not have in-depth technical knowledge on how to develop immersive curriculum content.

The immersive course content and tool kit were created and beta tested with a small group of Indigenous practitioners, who were enthusiastic about seeing more.

Procedural lessons learned include scoping realistic timelines for complex projects with seasonal constraints and improving uptake of technological innovation by ensuring compatibility with existing systems.

NAIT plans to pilot the courses and utilize the tool kit to develop more courses with immersive content in hopes of offering a certificate program in reforestation. Depending on the results of this implementation, the created content and tools may serve as a suitable model for other educational and training institutions looking to develop content and tools to better meet the skills and labour needs of rural and remote Indigenous communities and/or to increase their capacity to adopt new technologies.

### KEY INSIGHTS

- 1 Technology designers, curriculum experts and content experts must work closely together so that the technology supports the learning goals.
- 2 To improve the adoption of new technology, the institution should consider compatibility with other institutional systems early.
- 3 Small-scale beta testing can build enthusiasm for the final product.

## ▶ The Issue

Within northern areas, there is significant demand for labour related to reclamation and reforestation. However, there is a lack of quality training available and a lack of capacity to deliver reforestation skills to Indigenous communities, many of which are rural or remote.

In particular, more conventional, non-interactive and non-immersive virtual training methods have failed and do not have strong links to employment skills and cultural or ecological contexts.

But creating immersive content has required custom software development that does not allow for changes or updates without in-depth technical knowledge. Creating immersive content has been out of reach for most institutions, or for instructors without technical know-how.



## 🔧 What We Investigated

For this project, a team of instructional designers and subject matter experts developed immersive training utilizing 360° video technology to provide a superior and culturally appropriate learning experience. The technology was designed to allow trainees to digitally access content that is typically only available in the field. NAIT utilized existing materials, previously used with community partners, to form the curriculum for the reforestation and revegetation courses, identifying clear objectives and outcomes to meet training needs and address the skills gap. The courses focused on plant identification, seed collection and seed extraction.

In parallel with the course development, the project also worked with a software development team to create a tool kit for instructors who do not have expert-level technical capabilities to be able to include 360° video technology in their courses. The objective of the tool kit was to support instructors and trainers to create and edit 360° scenes on their own without requiring software developers to create or update a customized solution. The tool kit supports course instructors to create new pieces of immersive content as required to meet the training requests of various communities.

The intent behind the project was to use this tool kit to move away from static training materials to adapt to changing best practices and training needs without immense costs and time. This would allow educators to tailor training to address labour skills gaps and provide cultural and ecological contexts for participants.

## ✔ What We're Learning

### **Tailor timelines to projects**

Project staff felt there was not enough time to develop and pilot the courses and tool kit within the allotted funding period. They were also challenged by the funding being aligned with the fiscal year rather than the calendar year. As a result of this, the course content and tool kit were created, but samples of the courses were only beta tested with a small group from Aski Reclamation Ltd. (an environmental and reclamation business in Moberly Lake, BC and operating within Saúlteau First Nations' Traditional Treaty 8 Territory). Courses integrated ecological and First Nations' knowledge with industry demands and best practices. Though the beta-test cohort was small, participants expressed enthusiasm for the full version of the course.

### **Consider compatibility with other institutional systems early**

Project staff emphasized the importance of ensuring digital platforms are compatible with those in use more broadly in the institution. For instance, there was a push to design the application in a specific learning management system. However, as the project moved forward, project staff learned that the institution was moving to a new learning management system, which would negate any work that was specific to the original system.

## ★ Why It Matters

Rural and remote Indigenous communities have training and skills development needs that require innovative delivery media, like 360°, immersive virtual experiences. This project matters because it created content and tools that utilized a new technology to meet a regional skills need in a culturally appropriate way, and also to impart technological skills to the instructors to improve the impact of their work.



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## ► What's Next

NAIT planned to pilot the courses and anticipated there will be additional training opportunities offered to other communities. NAIT expects that the course content will be revised based on the feedback received from the pilot, and offered to other partners in the future.

NAIT has also secured funding from the Forest Resource Improvement Association of Alberta to develop two additional courses with immersive, 360° content using the tool kit. Once those courses are complete, all the developed courses will be offered as a certificate program in reforestation.

Have questions about our work? Do you need access to a report in English or French? Please contact [communications@fsc-ccf.ca](mailto:communications@fsc-ccf.ca).

Addressing Regional Labour Shortages is funded by the Government of Canada's Future Skills Program. The opinions and interpretations in this publication are those of the author and do not necessarily reflect those of the Government of Canada.

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