

VR LEARNING EXPERIENCES FOR AN INDIGENOUS LANGUAGE

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– BACKGROUND & MOTIVATION

Cultural and Language Revitalization

For the First Nation of Na-Cho Nyäk Dun (NND) in Mayo, Yukon, Canada, the Northern Tutchone language and oral traditions face an increasing threat from the loss of elder speakers and the disruption of intergenerational transmission caused by colonial policies. Static digital archives preserve words but lose what makes them meaningful: the community and what builds it, people, land, and lifestyle.

Unique Project Characteristics

- Immersive interactive learning experiences
- Community-driven design
- Combination of 3D content and 360-degree videos
- Experiential learning and task-based methodologies
- Recorded conversations by the Elders

Immersive & Inclusive Learning

We used CirclesXR, a multi-platform web-based framework to offer immersive spatial experiences that are accessible to different users regardless of the device they use (head-mounted display, desktop, or mobile).

– DESIGN, DEVELOPMENT, & EVALUATION PROCESS

Community-driven iteration

- **Script Creation:** A community member, in collaboration with the Pedagogy Team, creates a script that outlines the dialogue and actions taking place in the experience.
- **Design Document Creation:** The script is translated into a virtual reality experience through a design document that outlines how it will look like and the development process.
- **3D Environment Modelling:** The virtual environments are created from reference photos provided by community members.
- **3D Character Modelling & Animating:** The 3D characters are inspired by reference photos of community members (with their consent).
- **Dialogue Translation & Recording:** All dialogue is translated to Northern Tutchone and audio is recorded by community members.
- **Experience Programming & Asset Integration:** Using CirclesXR.

Early Findings

A limited number of community members, including grades 7-10 students, used the experiences and provided mainly positive feedback that was used to improve the design. Improved interaction, authentic content, and variety of tasks were the major topics of this feedback.



– CONCLUSION

Contributions

We demonstrate the combination of various immersive technologies, learning theories and traditions, and a community-based design approach that engages community members not just as users but also creators and owners.

Future Directions

- 1 **New tasks and experiences**
We plan to use the three (and more) designed spaces for different language and cultural experiences, such as storytelling around the campfire in the space used for VR Experience 1.
- 2 **Continuous feedback**
We will continue to seek feedback from all members of the community to ensure that the experiences are accessible, meaningful, and engaging, whether used from a VR headset or a laptop.
- 3 **Community-led pedagogical approach**
We will continue to explore the methods and theories that are best suited to Indigenous language and cultural revitalization and preservation, and in relation to a newly developed curriculum.



Experience 1
Making Friends
By the Spruce
Tree



Experience 2a
Campfire
Planning &
Writing Shopping
List



Experience 2b
Shopping for
Bannock
Ingredients



Experience 2c
More Shopping
at Mayo Foods



Experience 3
Making
Bannock &
Packing for
Campfire