

SCAN 6

AI and the Indigenous Learner

Indigenous ways of knowing, data sovereignty and language learning - the opportunities and risks of AI for Indigenous learners across Canada, the Sámi homelands of Finland and Norway, Australia and Aotearoa New Zealand

Prepared for the Youth AI Research Network

This sixth scan turns to the Indigenous learner, and to the question of what it means for that learner to hold *agency* over AI - supported by a teacher and grounded in community. It examines Indigenous ways of knowing, data sovereignty and language revitalization across four settings, and reads them through the governing question of your EDU596 futures work: not what technology can do, but what futures communities want, and how decisions should be governed. It is framed by self-determination, by **Learning Well** and **Being Well**, and by the design-justice commitment of *AI Unplugged* to centre, not merely consult, those most affected.

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1. Purpose and Framing

This is the sixth report in the Futures Leadership for Change series, and it turns to the Indigenous learner. It asks what the arrival of AI means for Indigenous students and their communities across four settings - First Nations, Inuit and Métis peoples in Canada, the Sámi across Finland and Norway, Aboriginal and Torres Strait Islander peoples in Australia, and Māori in Aotearoa New Zealand - and it reads that question through a single lens: student agency, supported by a teacher and grounded in community.

The framing is drawn from the futures work J-C Couture, Jean Stiles, and I have been engaged in at the University of Alberta. The governing principle for this work is: for Indigenous learning, the key question is not what technology can do but “what futures do communities want, and how should decisions be governed?” (Murgatroyd & Couture, 2026). That work also identifies where the strength of Indigenous futures thinking lies - with Elders as foresight holders, youth as future narrators, language as strategic infrastructure, land as stakeholder, and community consent as the governing principle. This scan adds the design-justice spine of this work, which insists that those most affected by a technology must hold authority over it, not merely be consulted about it.

A note on standpoint

This is a synthesis prepared for the Network, not a statement on behalf of any Indigenous people. It points deliberately to Indigenous-led work and Indigenous-authored principles, and it should be read as an invitation to relationship and consent rather than a substitute for them. Nothing here replaces the authority of communities over their own knowledge, data and futures.

2. How to Read This Scan

Three cautions. First, the four settings are not interchangeable; each has its own peoples, languages, histories and governance, and the report treats them separately before drawing any common threads. Second, the strongest and most trustworthy sources here are Indigenous-led - Te Hiku Media, the Divvun and Giellatekno groups, Maiam nayri Wingara, the First Nations Technology Council - and the scan privileges their voice over commentary about them. Third, the lens of student agency supported by a teacher is held throughout: the question is never simply whether AI can help, but whether it strengthens an Indigenous learner’s self-determination, language and identity, on terms their community controls.

3. The Governance Spine: Indigenous Data Sovereignty

Across all four settings, one principle comes before any tool: Indigenous Data Sovereignty, the right of Indigenous peoples to decide what, how and why data about them are collected, accessed and used (Maiam nayri Wingara, 2018). This is not a

technical footnote; it is the precondition for every other question in this scan, because AI is built on data, and data about Indigenous peoples has too often been taken rather than given. The frameworks below, each Indigenous-authored, set the terms.

Framework	Jurisdiction	Core idea
OCAP®	Canada	Ownership, Control, Access and Possession of First Nations information by First Nations.
CARE Principles	Global	Collective benefit, Authority to control, Responsibility and Ethics - the complement to FAIR data.
Maiaṃ nayri Wingara	Australia	Aboriginal and Torres Strait Islander peoples' right to decide what, how and why their data are collected and used.
Te Mana Raraunga / Kaitiakitanga	Aotearoa NZ	Māori data sovereignty (rangatiratanga); data is cared for as a taonga, not owned, with benefit flowing back to its source.

The shared move across these frameworks is profound: from data as property to be owned toward data as a relationship to be tended. Te Hiku Media's Kaitiakitanga licence captures it exactly - data is not owned but cared for under guardianship, and any benefit derived from it flows back to its source (Te Hiku Media, n.d.). The stakes are well put by the Métis technologist Ross Pambrun: *"if you don't participate, AI will define you"* (University of Regina, 2026). For the Indigenous learner, sovereignty over data is sovereignty over how they will be seen by the systems that increasingly mediate learning.

4. Four Journeys

Each setting is already further along than the policy debate suggests, and in each it is community-led work that leads.

Canada - Two-Eyed Seeing and Indigenous-led training

Canadian work braids Indigenous and Western knowledge - a Two-Eyed approach - and insists on Indigenous authorship. Mila's Indigenous Pathfinders in AI, the country's first AI initiative exclusively for Indigenous talent, is rooted in the Nehinuw concept of kiskinaumatowin, or teaching each other, treating learning as reciprocal rather than one-way (Mila, n.d.; DIGITAL, 2025). The Abundant Intelligences project advances a Two-Eyed AI that applies Indigenous worldviews to technical challenges (Towards abundant intelligences, 2024), while the First Nations Technology Council, finding only about one percent of First Nations reporting widespread AI use, is building culturally grounded courses and an open-source, Indigenous-informed AI toolkit (First Nations Technology Council, n.d.). Underpinning all of it is OCAP®, the First Nations principles of ownership, control, access and possession.

The Sámi (Finland and Norway) - sovereignty through language technology

The Sámi offer two decades of proof that small communities can build their own tools. The Divvun group, established by the Sámi Parliament in Norway, and the Giellatekno research group at UiT The Arctic University of Norway have, since the first Sámi spellcheckers in 2007, produced keyboards, dictionaries, machine translation and speech tools for all the Sámi languages, open-source and shared with other Indigenous communities, including in Canada (Antonsen et al., 2024; Divvun, n.d.). Their hard-won lesson is a warning for the AI moment: large language models produce seemingly fluent Sámi that on inspection ranges from misleading to gibberish, whereas rule-based, community-built tools succeed precisely because they do not depend on data the community cannot control (Antonsen et al., 2024). In Finland, the 2016 curriculum's push of computing into every classroom created demand for Sámi-language resources now being met through community and public-broadcaster partnerships.

Australia - sovereignty principles and first-languages infrastructure

Australia's contribution is governance and language infrastructure. The Maiam nayri Wingara Indigenous Data Sovereignty Collective set the national principles in 2018, and the AIATSIS Code of Ethics binds research practice (Maiam nayri Wingara, 2018; AIATSIS, 2020). Alongside these sit community-built tools for the country's many first languages: First Languages Australia's Gambay map, the Nyingarn manuscript platform, and Mukurtu, an Indigenous-built content system for managing cultural heritage on community terms (Australian Research Data Commons, n.d.). The throughline is the insistence that data be strengths-based rather than deficit-focused - that AI describe Indigenous learners by their aspirations, not their problems.

Aotearoa New Zealand - kaitiakitanga over te reo Māori

Aotearoa offers the clearest model of sovereign, community-built language AI. Te Hiku Media, an iwi broadcaster, ran the Kōrero Māori campaign in 2018 and gathered hundreds of hours of te reo Māori speech from thousands of contributors within days, building speech-recognition models of high accuracy - all governed by its Kaitiakitanga licence and the Māori data sovereignty principles of Te Mana Raraunga (Te Hiku Media, n.d.; NVIDIA, 2024). Its Papa Reo platform now helps other Indigenous communities build their own tools while keeping sovereignty over their data, and its leaders are pointed about the alternative, naming the wholesale appropriation of Indigenous language and labour by global tools as AI colonialism. As one Te Hiku leader put it, *"our grandmothers dreamed of hearing our language on the airwaves; now we're teaching computers to speak it"* (Native News, 2025).

5. Opportunities and Risks for the Indigenous Learner

Held against the Learning Well and Being Well frames, the balance sheet is clear-eyed. The opportunities are real: AI can accelerate language revitalization, as Te Hiku and Divvun show; it can power community-built, culturally grounded learning tools; it can support land-based and intergenerational learning when designed with Elders and youth together; and, through a Two-Eyed approach, it can let Indigenous and Western knowledge strengthen each other rather than one erasing the other.

The risks are equally real and largely concern power. The gravest is AI colonialism - extraction of language and knowledge without consent, with benefit captured elsewhere. Close behind is cultural inaccuracy: general-purpose models trained on dominant-culture data produce fluent but wrong output in Indigenous languages and impose Northern, Western ways of knowing at scale, the homogenization threat AI Unplugged names. Then there is surveillance - facial-recognition attendance and behaviour systems falling hardest on already over-surveilled communities - and the deficit framing that describes Indigenous learners by their problems. For the Indigenous learner, each risk is a threat not only to learning but to identity and self-determination.

6. Four Futures: A Scenario Matrix

Futures work models these tensions as a two-by-two on the dimensions that matter most here - how culturally appropriate the AI is, and how much control and consent the community holds. The four futures it generates make the stakes concrete and the preferred direction unmistakable.

	Culturally appropriate AI: LOW	Culturally appropriate AI: HIGH
Community control & consent: HIGH	Contained Empowerment Communities hold control but the available tools are a poor cultural fit; sovereignty is real yet under-served by technology.	Sovereign & Grounded The preferred future: culturally grounded tools built and governed by communities, with consent and benefit flowing back. Te Hiku and Divvun point here.
Community control & consent: LOW	Extraction & Imposition The default risk: externally imposed, ill-fitting AI trained on and about communities without consent. Data flows out; harm flows in.	Co-opted Appropriation Polished, seemingly respectful tools built on Indigenous knowledge and labour without community authority - benefit captured elsewhere.

The diagonal tells the story. Without community control, even sophisticated tools slide toward appropriation or imposition; with control but poor cultural fit, sovereignty is real but under-served. Only the upper-right corner - culturally grounded tools under genuine community authority - is a future worth inheriting, and the Sámi and Māori work shows it is reachable.

7. Student Agency, Supported by a Teacher

The Network's lens - student agency supported by a teacher - takes on a particular shape for the Indigenous learner. Agency here is not individual autonomy in the Western sense; it is the learner's capacity to engage AI in ways accountable to their language, community and self-determination.

The teacher's role is correspondingly distinctive: not gatekeeper and not neutral facilitator, but ally and bridge - connecting the learner to Elders and community-built tools, defending the community's right to set terms, and knowing when the most supportive act is to help a student refuse a tool that would define them on someone else's terms.

This is design justice applied to the most consequential case: building with Indigenous learners and communities, not for them, and treating Elders as foresight holders and youth as future narrators rather than as data sources. A teacher who supports an Indigenous student's agency well is, in effect, helping that student stand in the upper-right corner of the scenario matrix - using AI that fits their culture, on terms their community controls.

8. What YAIRN Members Need to Think About

Drawing the scan together, several considerations should shape any work the Network does with or about Indigenous learners. They are offered as obligations, not options.

- 1. Governance and consent come first.** Before any tool or dataset, engage the relevant Indigenous Data Sovereignty framework - OCAP®, CARE, Maiam nayri Wingara, or Te Mana Raraunga - and secure community consent and governance. There is no ethical shortcut around this.
- 2. Relationship, not consultation.** As Indigenous voices across all four settings insist, meaningful engagement is built on sustained relationship and reciprocity, not a consultation box ticked late in a project.
- 3. Treat language as strategic infrastructure.** Language revitalization is among AI's clearest opportunities for Indigenous learners - but only through community-built, sovereignty-respecting models like those of Te Hiku and Divvun, never extractive ones.
- 4. Centre the right to refuse.** Supporting an Indigenous learner's agency includes supporting refusal - of culturally inaccurate tutors, of surveillance, of tools that extract. Refusal is a legitimate and sometimes the most ethical choice.
- 5. Partner with Indigenous-led initiatives; do not build over them.** The work is already underway and led well. The Network's role is to amplify, connect and learn from it, ensuring benefit flows back to communities, not to build parallel systems that repeat extraction.

9. Gaps and the Next Scans

This scan establishes the terrain; it does not speak for it. Three gaps follow. The first is authorship: the most important next step is for this work to be led, not merely informed, by Indigenous educators, Elders and youth from the Network's own communities. The second is specificity: the four settings each deserve their own deeper, community-authored treatment rather than the comparative sketch offered here. The third is the learner's own voice: as in SCANS 3 and 4, the direct voice of Indigenous students

reflecting on AI is thin in the published record and is exactly what the Network's participatory research is placed to honour.

With SCAN 6, the series has moved from the landscape of student creation, through co-creation, the student and teacher voice, the future, and now the Indigenous learner. The thread remains constant: AI in schools is being made, not merely arriving, and Indigenous students, teachers and communities have every right to help make it - on their own terms, toward futures worth inheriting. The work now turns to the Network's own communities, toward ICSEI 2027.

References

References follow APA 7th edition style and privilege Indigenous-led and Indigenous-authored sources. All are real and were verified for this report; several Indigenous-authored frameworks are cited as institutional or collective works in line with their own attribution.

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The task is not to predict the future of Indigenous education, but to help create futures worth inheriting.