

## Transforming Education in the Arctic: Co-creation, Decolonization, and Participatory Approaches

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**ABSTRACT.** Rapid environmental change, social inequities, and colonial legacies are all factors that drive a pressing need for more meaningful and collaborative education in the Arctic that supports community resilience and self-determination. Meaningful and inclusive education strategies in the circumpolar context are challenging due to both the colonial history and top-down approaches often used in practice. While each Arctic region has its own cultural context, general themes have emerged to support the transformation of education in the North, specifically as it relates to environmental change and resilience. This short paper focuses on environmental education and hones in on three interrelated themes: 1) circumpolar education research and policy priorities, 2) co-creation and participatory approaches in education, and 3) decolonization of Western education. By exploring these themes, we aim to identify next steps for co-creating a collaborative and inclusive framework for future Arctic education programs on environmental change and resilience.

**Keywords:** environment; sustainability; climate change; community-based research; knowledge sharing; collaborative learning; community resilience

**RÉSUMÉ.** Les changements environnementaux rapides, les inégalités sociales et l'héritage colonial sont autant de facteurs qui rendent nécessaire une sensibilisation significative et collaborative dans l'Arctique afin de renforcer la résilience et l'autodétermination des communautés. Dans le contexte circumpolaire, la mise en place de stratégies de sensibilisation significatives et inclusives se révèle complexe, tant en raison du passé colonial que des approches hiérarchiques souvent privilégiées. Bien que le contexte culturel soit différent dans chaque région arctique, il existe des thèmes généraux en faveur de la transformation de la sensibilisation dans le Nord, notamment en ce qui concerne les changements environnementaux et la résilience. Ce court article se concentre sur la sensibilisation environnementale, en mettant l'accent sur trois thèmes interdépendants, soit 1) les priorités en matière de politiques et de recherches en sensibilisation circumpolaire, 2) les méthodes de collaboration et de participation à la sensibilisation dans ce domaine et 3) la décolonisation de la sensibilisation inspirée de la culture occidentale. Ces éléments sont présentés afin de déterminer quelles seront les prochaines étapes de l'élaboration conjointe d'un cadre de référence collaboratif et inclusif pour les futurs programmes de sensibilisation arctique sur le changement environnemental et la résilience.

**Mots-clés :** environnement; durabilité; changement climatique; recherche communautaire; partage des connaissances; apprentissage en collaboration; résilience communautaire

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## INTRODUCTION

### *Arctic Communities and Environmental Change*

The Arctic encompasses territories of eight countries, including Norway, Denmark (Greenland and the Faroe Islands), Sweden, Finland, Russia, Canada, Iceland, and the United States and is home to approximately four million people (Jungsberg et al., 2019; Malik and Ford, 2025). The Arctic has a variety of definitions: geographically, it is generally defined as the area north of the Arctic Circle (66.5° N latitude) (Bonnett and Birchall, 2020), while politically, it may be defined by national administrative boundaries (The Arctic Institute, 2024). Indigenous populations account for approximately 9% of the Arctic population, with higher percentages in Greenland and the Canadian Arctic (Jungsberg et al., 2019).

Across the Arctic, communities are experiencing significant impacts due to environmental change and, more specifically, climate change. Climate change impacts are felt differently across regions, as their environmental and social–economic contexts influence how effectively they can respond to, or adapt to, these changes. Climate change impacts include coastal erosion, permafrost thaw, flooding, changes in sea ice dynamics, weather predictability, and disease exposure (Ford et al., 2019; Birchall and Bonnett, 2020). These impacts directly affect food security, access to land and water to participate in subsistence activities, human health and safety, infrastructure, and the cultural well-being of communities. Worsening climate impacts across the Arctic have underscored the urgent need for climate change adaptation and strategies to build community resilience (e.g., Van Assche et al., 2022). But what does community resilience and adaptation look like in the Arctic context?

This short article uses discussions that took place during an Arctic Congress panel and workshop in 2024 to explore how co-creation, participatory methodologies, and decolonial approaches can be applied to transform education in the Arctic. By promoting such participatory approaches alongside interdisciplinary voices, our work contributes to the ongoing conversations about creating inclusive, place-based education programs that support community climate resilience in the Arctic. In this article, we use the term “inclusive” to mean approaches that engage with diverse voices and knowledge systems in a meaningful way, in particular with Indigenous communities, youth, Elders, educators, and local practitioners, to ensure educational programs are grounded in multiple perspectives and contexts (Hall and Tandon, 2017; Windsor et al., 2022).

### *Context and Challenges in Circumpolar Education*

Arctic communities have a long history of adaptation in their environment (Wenzel, 2009; Ford et al., 2015). Adaptation strategies are intended to moderate or avoid harm associated with climate impacts (IPCC, 2023).

However, the scope and speed of current changes in the Arctic may surpass communities’ historical coping abilities, with implications for a wide range of socio-economic and political conditions. This calls for more attention to community resilience.

This form of resilience has emerged as a promising concept in recent years (Magis, 2010; Berkes and Ross, 2013). Magis (2010:402) defines community resilience as “the existence, development, and engagement of community resources by community members to thrive in an environment characterized by change, uncertainty, unpredictability, and surprise.” Even the most vulnerable communities can act when affected by climate-related disasters; they can strengthen their social-ecological systems through improvement of their institutions, systems, and actor capacities (McSweeney and Coomes, 2011). For instance, actors in Arctic communities can seek out educational opportunities that offer insight into how to plan for, and implement, resilience-building strategies, such as the Building Regional Adaptation Capacity and Expertise (BRACE) program. Developed by Natural Resources Canada (2025), BRACE supports partnerships between governments, organizations, and communities to increase skills, knowledge, and tools for climate change adaptation. It aims to develop local expertise with training to support community-driven adaptation projects to integrate climate factors into planning processes. In northern regions, BRACE has supported opportunities for local leaders, educators, and youth to learn about community resilience and adaptation strategies by connecting Western and traditional knowledge. In this context, education can become a crucial tool for strengthening resilience by elevating local knowledge, fostering self-determination, and preparing communities to respond to rapid changes.

Transformative education can support local-scale climate adaptation and community resilience in a rapidly changing environment. Indeed, resilience and education are closely connected: education can prepare individuals to navigate stress and uncertainty through adaptive learning (Tidball and Krasny, 2011) while also enabling long-term adaptation agendas by supporting community conversations, political buy-in for adaptation, and institutional capacity building (Cost, 2015; Bonnett and Birchall, 2020).

Education in the Arctic has been traditionally framed by Western perspectives, which often overlook the local cultural, social, and environmental context of Arctic communities (Smith, 2016). Historically, formal education has stripped local knowledge and culture from the curriculum in order to assimilate populations, which has prevented the passing on of traditional knowledge that supports environmental stewardship practices and wisdom (Cost, 2015). At the same time, Indigenous pedagogies have persisted outside of formal school systems and, in some cases, within the school systems, through community-driven initiatives such as the Iñupiaq Learning Framework (NSBSD, n.d.), the Qargi Academy (Qargi Academy Tribal School, n.d.), and the Inuit Circumpolar Council’s Alaskan

Inuit Education Project (ICC Alaska, 2020). Many schools and school districts also implement Indigenous knowledge and pedagogies in different ways and to different degrees. In Canada, the 1884 Potlatch Ban (Kumugwe Cultural Society, 2025), and, in Alaska, policies such as Sheldon Jackson's Comity Plan (Dupras et al., 2025) reinforced English-only schooling and the exclusion of Indigenous knowledges. These conditions have created a disconnect between education and local contexts, making it harder for communities to adapt and remain resilient with rapid climate change. In Alaska, for example, the legacy of boarding schools has prevented many people from learning their languages, cultures, and traditions, with long-term effects on their environment, survival skills, and community resilience (Hirshberg and Sharp, 2005). These systems still influence the design and delivery of education today (Hirshberg et al., 2023).

Community-led and participatory educational practices are gaining momentum as a way to counter these legacies and make education more inclusive and relevant to communities (Pearce et al., 2015; Hall and Tandon, 2017). At the same time, centring Indigenous knowledge requires more than simply inserting it into existing Western frameworks (Smith, 2016; Stein et al., 2023). While we acknowledge this important distinction, we use the term "weaving in" to reflect the way participants in our 2024 workshop described incorporating local and Indigenous knowledge in curricula, even as broader systemic transformation remains necessary. Emerging priorities highlight the importance of local ownership, cultural relevance, and weaving in of traditional and local knowledge into curricula.

Participatory approaches grounded in community-based research principles offer a great framework to support resilience in Arctic communities. These approaches bring equity in partnerships between scholars and community members (Cueva et al., 2022). In a research setting, these methods highlight the importance of collaboration at all levels, from research and questions design, choice of methodologies, and collection and analysis of the data, to sharing results (Gutberlet et al., 2017; Amauchi et al., 2021). Participatory methods can apply outside of research as well, specifically in curriculum design and delivery. For example, Härkönen (2018) highlights the benefits of producing education programs collaboratively and locally with Arctic communities using arts-based approaches to reflect their cultural interpretations. In a discussion of how local narratives were included in an international exhibition, Härkönen showcases how a participatory approach can support sharing Arctic culture and knowledge. This reinforces the argument by Windsor et al. (2022) that what Arctic communities really need is true collaboration with schools and teacher education programs. To do so, they argue, these programs should empower teachers-to-be to use participatory approaches to collaborate with communities in curricula development. This would allow teachers to draw on, and incorporate, rich cultures and

environments into their teaching. However, this is easier said than done.

According to Smith (2016) and Stein et al. (2023), transforming education means confronting and rethinking its colonial and unsustainable foundations. Such work would mean, at least, adding storytelling, culturally responsive pedagogies, and community members' input and relationships to the education process. Is there a more equitable way of incorporating knowledge systems to make education more inclusive and meaningful in the Arctic context? As Herrmann et al. (2023) highlight in the *Roadmap to Arctic Decolonial Research*, there are still challenges in developing a truly respectful and mutually beneficial relationship between scholars and communities. Decolonizing Western education is a serious undertaking, one that will require more than this article, which can only offer a partial view of the topic. Without proper representation, anyone can inadvertently reproduce colonial patterns (Thiessen, 2024). With this in mind, we acknowledge that our group of authors has limited Indigenous representation to cover this topic in depth.

## APPROACH

A great way to advance a field of study is to gather various actors involved in, or passionate about, the topic to share their different experiences and contexts (Ford et al., 2016; Nilsson et al., 2019). Here, we report on the outcomes of a panel and workshop (small group discussions) held during the Arctic Congress 2024 in Bodø, Norway. Our overall goal during those sessions was to help guide the development of a framework for future Arctic education programs on environmental change and resilience.

The sessions convened scholars involved in circumpolar education related to environmental change and resilience across the University of the Arctic's (UArctic) thematic networks and institutes. These international networks and institutions support knowledge generation and sharing, as well as Arctic research across circumpolar countries. The panel included five scholars, joining us from three countries (Canada, Norway, and USA, including Iñupiaq perspectives) and representing the following UArctic-affiliated groups and thematic networks:

- local-scale planning, climate change and resilience
- teacher education for social justice and diversity
- Arctic plastic pollution and GRID-Arendal
- Verde Indigenous education
- Læra Institute for Circumpolar Studies

Panelists work in various disciplines, including: geography, planning, education, sustainability, Indigenous studies, cross-cultural studies, social sciences, public policy, earth sciences, environmental studies, and climate science. They were invited to reflect on experiences, case studies, and challenges they have observed related to

education in their contexts, with a focus on environmental change and resilience. The session was designed to highlight inclusive, place-based educational approaches and cross-cultural learning from the Arctic countries represented.

The one-hour panel was followed by a workshop, which included three moderated small-group discussions (n=15 participants total) informed by initial themes that emerged from the panel, and structured around three key themes: 1) circumpolar education research and policy priorities; 2) co-creation and participatory approaches in education; and, 3) decolonization of Western education.

Both the panel and group discussions were audio recorded with participants' verbal consent for documentation and review purposes. The first author reviewed transcripts generated using Otter.Ai. The panel was designed to promote engagement by bringing together researchers from different UArctic thematic networks and institutions, followed by a moderated workshop where participants were encouraged to share experiences and perspectives from their contexts. We did not use formal engagement protocols for either the panel or the workshop, as we intended the event to facilitate open dialogue, rather than community consultation or formal research. However, during the workshop, moderators created space for equitable participation by inviting contributions from all attendees and ensuring diverse voices were heard. All panelists were also participants in the group discussions.

#### THEMES EMERGING FROM THE PANEL AND WORKSHOP

A series of best practices, challenges, and proposed solutions emerged during the panel discussions. Panelists highlighted the importance of weaving in localized climate education, Indigenous knowledge systems, collaborative approaches and flexible circumpolar curricula, and supporting youth empowerment in policy. While panelists shared many positive examples and best practices, they also discussed challenges; these included high teacher turnover, lack of culturally relevant materials, and lack of representation of Indigenous educators and policy makers. Those reflections were a starting point for the moderated group discussions that followed, in which participants had the opportunity to share their own experiences and best practices.

##### *Circumpolar Education Research and Policy Priorities*

This conversation centred on circumpolar education research and policy and the significance of community ownership, cultural relevance, and weaving in Indigenous worldviews. These adjustments require meaningful and respectful long-term partnerships between educational institutions and Indigenous communities. It is important to bear in mind, however, that Indigenous and tribal

organizations are increasingly leading their own education priorities, for example, initiatives like the Qargi Academy (Qargi Academy Tribal School, n.d), Iḷisaqativut (Iḷisaqativut, 2025), and efforts in Alaska to implement state tribal education compacted schools (Alaska Department of Education & Early Development, n.d), where tribes lead curriculum, design, and hiring. Community ownership is a significant question emerging in the circumpolar context. This is exemplified in the reclamation by Indigenous communities of control over education systems (Hansen et al., 2010).

During the workshop, the conversation centred on the following guiding questions:

- What are key emerging issues in circumpolar education?
- Where are the communities and networks that are not connected? Do we need a unified circumpolar education entity, or can we build on the existing thematic networks and organizations?
- What does it look like for communities to own their education?

##### **Key Emerging Issues in Circumpolar Education:**

Three main points emerged from this first question: a) Certification and recognition for local educators; b) Sustainability of funding for education programs; and c) Decolonization of education and curriculum development.

Participants highlighted how certification systems create a disparity between Indigenous and non-Indigenous teachers in Nunavut (Snow, 2023), limiting local educators' mobility and ability to teach in various communities. During the discussion, participants raised funding sustainability as a critical issue, with some recommending a shift from short-term project-based funding to systemic, long-term support to make culturally relevant education more sustainable. Participants also identified decolonization of education and curriculum development as a critical issue. Decolonization calls for a curriculum that respects local knowledge and values. A participant shared the example of Greenland's nation-wide Atuarfitsialak educational reform, which began in 2002. The reform created space for educators to design curricula rooted in Inuit values, bilingual education, and local cultural practices. Reform enabled Greenland educators to embrace and strengthen their cultural identity (Wyatt, 2012).

**Networks and Community Connections:** Two main points emerged in relation to community connections and knowledge sharing across networks: a) gaps in community networks and b) the need to build local support structures.

Participants mainly described how access to a broader educational network is challenging in many remote Arctic communities, particularly across national borders. Yet we must note that cultural and language collaborations also already exist or are emerging. Language revitalization initiatives include: Gwich'in Council International, programs of the Inuit Circumpolar Council, the Lingit initiative of the Yakutat Tlingit Tribe (2025), the

online language portal *Xaad Kil* of the Massett Haida (FirstVoices, 2025), and the Sm'algayax language learning of the Ts'msyen Sm'algayax Language Authority (2019). These highlight further opportunities for cross-border educational and cultural exchange. As proposed during the discussion, a global circumpolar education entity could help share best practices and support community collaborations, while existing networks, such as thematic networks, can offer local context priorities and solutions. A participant invoked an interesting example from Mi'kmaq communities that showcased a co-operative research assessment model that fosters meaningful dialogues among educators, community leaders, and researchers. This approach follows the Two-Eye Seeing (Etuaptmumk) concept introduced by Mi'kmaq Elders Albert and Murdena Marshall to emphasize the interweaving of Indigenous and Western ways of knowing, and a shift to Indigenous-led research (Iwama et al., 2009).

**Community Ownership of Education:** Given these power dynamics, it is essential to rethink how expertise is defined in the education systems (Hirshberg et al., 2023). This shift in power can be supported by community ownership to guide how education programs are designed and delivered. Three main strategies emerged around the question of community ownership: a) locally managed certification and teacher development; b) empowerment of community knowledge holders; and c) co-creation and participatory approaches to education.

Participants highlighted programs, such as the program offered to two cohorts by the University of Prince Edward Island in partnership with the Government of Nunavut, called Master in Education in Leadership and learning (Med). According to participants, these initiatives have led to better student retention, empowerment to design curriculum aligned with local values, and stronger support for cultural heritage. Similar opportunities exist in Alaska, where all major universities (University of Alaska System, 2025) and Iñisaġvik College (Iñisaġvik College, 2025) offer teacher preparation and professional education programs that allow students to take courses from their home communities.

These examples align with the insights of Hansen et al. (2010), who highlighted the importance of Indigenous communities reclaiming control over their educational systems. Particularly, Hansen et al. (2010) shared the role of advocating for Samí education rights and promoting cultural equity by the Samí Parliament in Norway, which align with the Inuit and Gaelic communities highlighted, shaping their education programs to better reflect their cultural contexts.

Building on the discussion of the role of educators, one of the panelists asked: “How do we determine who is an educator?” Participants discussed the notion of empowering knowledge holders in communities, with examples from tribal schools in Alaska and the Mi'kmaq educational model. These approaches emphasize the importance of community involvement in decision making and management. Many involved in this workshop discussion

noted that empowering local knowledge holders allows for community members to decide on curriculum needs and knowledge-sharing priorities. Valuing local knowledge also supports learning that reflects local identity. These insights echo Anang et al. (2021), who suggested that Inuit research partnerships could be strengthened if community members earned university credits and were evaluated using Inuit principles.

Finally, participants discussed the role of participatory research. They noted that when researchers listen to communities and co-create research projects with them, this demonstrates respect and shared ownership. They used the example of Alaska's Ikaaġvik Sikukun (ice bridges) project in Alaska (Moore Foundation, 2022), which they saw as showcasing how researchers and community leaders could co-design research priorities to ensure that funding aligned with local needs to engage meaningfully and empower local communities in both research and education.

#### *Co-creation and Participatory Approaches in Education*

In the context of meaningful collaboration to co-create educational opportunities, it is essential to think beyond community participation and shift towards a meaningful inclusion of community priorities. Academic–community partnerships must not only include different voices at the table, but also prioritize community perspectives to ensure relevance and respect for local knowledge (Amauchi et al., 2021). Arts-based methods, such as participatory video, photography, and storytelling approaches, are helpful to engage meaningfully and capture local knowledge in a way that is sometimes difficult to convey using traditional academic methods, such as journal articles (Tremblay and Jayme, 2015; Gutberlet et al., 2017). Other examples of co-creation in the education context are found in community-based education programs, where community members are involved not only in delivering content (Arctic Communities), but also in designing and developing the curriculum (UARctic, 2022). In the Arctic, these collaborations include partnerships between government education departments and institutions such as the Beaufort-Delta Divisional Education Council and local hunters and trappers committees. Collaborative approaches help build culturally responsive programming that achieves community education goals, such as the Dene Kede and Innuqatigiit curriculum (Government of Northwest Territories, n.d.). These curricula were developed with extensive consultation with Elders, educators, and communities and are rooted in Dene and Inuit worldviews, while emphasizing relationships with the land, people, and the spiritual world. They also support teachers with guidance on how to bring cultural knowledge, values, and traditions into the classroom. Incorporating the Indigenized inquiry model into curriculum design has resulted in higher engagement and increased relevance for both students and the broader community (Antoine et al., 2018).

This level of collaboration enables recent information to be shared in conjunction with relevant Traditional Knowledge from the voices and faces of the community (Russell-Loewen, 2025). In addition to the Dene Kede and Inuuqatigiit curricula mentioned above, the Alaska Native Knowledge Network is another strong example of an Indigenous-led education initiative that integrates cultural values and Traditional Knowledge systems into learning resources for schools in Alaska and beyond.

During the workshop, the group discussion centred on best practices and challenges related to collaborations between researchers and community members to co-create educational opportunities. The guiding questions supporting this conversation were as follows:

- What does it look like to collaborate between community members, and researchers, to co-create an educational opportunity?
- What kind of participatory approaches can be used in the production and sharing of knowledge?
- What are the best ways to engage youth in a learning experience?

**Collaboration Between Research and Community Members:** Participants observed that mutually beneficial co-creation moves away from tokenistic participation and prioritizes local voices, especially from members who have been marginalized from the decision-making processes for so long. Additionally, the community's lived experiences are essential for creating effective, respectful, and meaningful educational programs. A great example of mutual collaboration can be found in a multi-stakeholder effort to establish solutions to local marine litter, such as the UArctic Plastic Pollution Thematic Network and the deep-dive method of marine debris identification for local impact (Falk-Andersson, 2021). Falk-Andersson (2021) indicated that the lack of action that often happens after discussions between community members and scholars was highlighted as a source of frustrations. The importance of creating actionable steps to address local concerns is a challenge that needs to be addressed.

**Knowledge Production and Sharing:** Discussion group participants emphasized that when applied effectively, participatory approaches in education allow community members and youth to be actively involved in both knowledge creation and sharing. This dynamic empowers everyone as co-researchers and knowledge producers. Learning becomes reciprocal. Participants emphasized that challenges remain in the use of these participatory methodologies, such as the difficulty of integrating Indigenous and Western knowledge systems. Such a challenge emphasizes the importance of dialogue and recognition of diverse knowledge systems. In addition, participants noted that participatory methodologies require facilitators to act more like mentors, rather than traditional instructors (teacher–student relationship). To support this shift, it would be beneficial for educators

and researchers to receive some training in facilitation, mentorship, and mediation skills to create open and safe spaces for participants to share and make people feel like we are all learners and have knowledge to share too. These participatory skills are often missing from traditional school programs, which makes the implementation of participatory approaches difficult. Capacity building and institutional support are needed to make this process easier (Amauchi et al., 2021).

**Youth Engagement in Learning Experiences:** Participants noted that engaging youth often involves the use of creative and culturally appropriate learning experiences. Engagement goes beyond the conventional education tools to empower them to explore and express their cultural identity and local knowledge. Effective engagement with youth, for example, requires allowing participants to select the modes of expression most meaningful to them (Henri et al., 2020). Those could be hip-hop songwriting and performing, digital media, drawing, or traditional storytelling. Participants noted that using real-world applications and practical scenarios (role play or simulation of local government, such as youth councils) is often helpful to effectively engage youth and empower them to have a voice and learn about the impacts of policy and community issues. Validating youths' knowledge is also crucial, participants noted. Formal educators must see youth as knowledgeable individuals and validate their insights and experiences so they feel valued as contributors to the learning process. Several caveats were highlighted during the discussion, including the need to move away from stereotypes. Indigenous youth are often perceived as shy or reserved, which limits their involvement in community conversations. As participants noted, creating safe spaces where youth feel empowered to share their opinions is crucial and provides an opportunity for the formal educator to learn from them. An example of this is the Model Arctic Council program, where students take on governance roles and gain insight into decision-making processes (Specá, 2023). As participants noted, and as echoed in the literature, these kinds of experiential approaches help youth build critical thinking skills and confidence and promote an understanding of different perspectives on complex issues (Specá, 2013). Additionally, being flexible in the methods used to engage youth is important. We cannot assume all youth will resonate with video or photography.

### *Decolonization of Western Education*

The term “decolonization” can sometimes be appropriated in various contexts by settlers almost as a metaphor for improving education or social justice, rather than the real goal of repatriating Indigenous land and life (Tuck and Yang, 2012). Rather than allies trying to interpret Indigenous frameworks, Smith (2012) argues that meaningful allyship will give space for Indigenous members or scholars to lead the process. For these reasons, we would like to encourage the continuation of

this conversation, to be led by Indigenous scholars. There was a strong interest in this topic, as this discussion group was three times as large as the other groups. A caveat, as mentioned before, is that this conversation does not represent general perspectives in the field; rather, it is meant to bring forward perspectives from Indigenous and non-Indigenous scholars on this topic. A larger Indigenous presence is necessary to adequately represent the distinct and context-based needs and priorities on this matter and goes beyond the scope of this article.

The small group discussions during the workshop centred around the following guiding questions:

- What are the best practices for bridging research and culture?
- How can we adapt Indigenous pedagogies locally for transformation?
- What are some examples of interesting land-based or experiential learning that could be integrated into Western education?

We recognize that the framing of these guiding questions does not fully centre Indigenous knowledge, but rather, reflects a starting point shaped within an academic setting. For example, asking how Indigenous pedagogies can be adapted risks implying that they must be modified to fit Western systems. The use of the words “interesting” or “could” may unintentionally qualify the value of land-based learning. We include the questions, as posed in the workshop, while acknowledging these limitations.

**Recognition in Education of Indigenous Ways of Knowing:** The first point of discussion in the area of decolonization challenged the Western educational frameworks, what counts as credible knowledge, and who holds authority in education settings. Discussion group participants emphasized that, to move beyond simply weaving in, effective transformation requires centring Indigenous epistemologies, promoting the concept of relationality, which is so central to that approach, and acknowledging local knowledge as critical. The latter acknowledgement includes the recognition of Indigenous knowledge keepers as primary educators who create a learning environment that values lived experiences. As Smith (2012) and Kovach (2009), among others, highlight, centring Indigenous epistemologies also relates to research, where power dynamics shape what is considered credible knowledge. This highlights the need for methodologies that respect Indigenous knowledge holders as co-researchers and prioritize relational accountability in knowledge production. Weaving in a holistic understanding of our world is also important, as noted by the participants during the discussion. Indigenous worldviews often prioritize relationality and interconnectedness, and see humans, nature, and non-human elements as interconnected. Bringing this approach into curricula helps students understand complex issues. Some challenges mentioned included 1) the risk of being reductive or stereotypical in

the representation of local knowledge; and 2) the conflict between Western epistemology, which often excludes lived experience, and knowledge systems that include emotions, spiritual values, and relationship views.

**Transformation Through Local Adaptation of Indigenous Pedagogies:** Participants discussed the definition of Indigenization and questioned the term “Indigenizing.” Some highlighted that perhaps we should prioritize re-Indigenizing (returning to Indigenous values of self-determination and sovereignty) as a framework for education, rather than trying to integrate Indigenous content into Western frameworks. That reframing would address power dynamics and shift the role of community members from contributors to decision makers. The journey to decolonize education starts with both Indigenous and non-Indigenous individuals needing to continually reflect on and question colonial ways of knowing and doing. Discussion participants talked about how decolonizing involves transforming colonial ways of knowing concerning the relationship to the land and transitioning from an extractive approach to a stewardship mindset. As highlighted in the discussion, a challenge that makes this difficult is the dichotomy between place-based Indigenous knowledge and a broader curriculum. Participants discussed the need for locally-based education to respect the unique identity and culture of smaller communities, rather than generalizing to Indigenous lived experiences. The last issue mentioned was the rigidity of institutions, which is a barrier to making Indigenous knowledge more central in our education systems. Institutional inflexibility is a systemic issue. The Western system has the tendency to resist less dominant epistemologies, making this process complex (Smith, 2012; Stein et al., 2023). It is important to note that Indigenous pedagogies do not fundamentally require adaptation or alteration to fit Western frameworks. As highlighted in the literature, educators can engage with these learnings authentically in ways that respect culture and context through, for example, culture camps (Barnett et al., 2020) and Indigenous educator networks, such as Iḷisaqativut (Iḷisaqativut, 2025) or the Association of Interior Native Educators (AINE, n.d.). These examples demonstrate that Indigenous-led approaches already represent authentic practices that can support educational transformation across circumpolar contexts.

**Examples of Weaving Land-based and Experiential Learning into Western Education:** In the group discussion, participants noted that land stewardship programs tend to support respectful relationships with nature and challenge traditional separations between nature and people. Some participants highlighted the example of *Paigitsiaguk*, an Inuit-led curriculum resource on wildlife stewardship (Paigitsiaguk, 2025). This program focuses on local species and ecosystems (i.e., polar bear, salmon) and learning directly on the land to help students gain practical skills and cultural connections. This is especially important in the context of rapid climate change. Land-based education supports communities to prepare for, and

adapt to, a changing environment. Participants noted that these approaches echo the importance of the relationality highlighted earlier, showing how land-based learning can foster caring for the land and ecosystems. A challenge with translating Indigenous pedagogies is how they can easily be misrepresented when included in Western frameworks. Participants emphasized the need for continued dialogue to unpack this topic in greater depth. Another issue mentioned in the group discussion was how to shift teachers' roles from traditional approaches (e.g., the "sage on the stage") to facilitators of student-led learning experiences. Educators may need training in Indigenous methodologies to guide students through these transformative experiences.

Our workshop showed that decolonizing education in the Arctic involves centering Indigenous knowledge, engaging in land-based experiential learning, and promoting a collaborative approach to curriculum development. These points align with priorities highlighted by Hirshberg and Petrov (2014), who emphasized the importance of community ownership of education systems, culturally relevant curricula, and weaving of Indigenous languages and knowledge into teaching practices as central to circumpolar education.

## CONCLUSION AND NEXT STEPS

Based on these conversations and feedback, we identified six key takeaways that can guide the co-creation of an adaptable and inclusive framework for future Arctic education programs on environmental change and resilience:

- Include diverse voices (youth, community members, Elders, educators, researchers) in the process of co-creating education programs (e.g., participatory workshops and curriculum co-design).
- As a researcher or a student, encourage your educational institutions to look critically at their policies and practices to shift power dynamics by recognizing Indigenous and community knowledge holders as equal partners, and addressing structural barriers that often give priority to Western frameworks (e.g., adjusting governance structures and credit recognition).
- Invest in developing capacity and resources to support participatory approaches, such as training educators as facilitators, and compensating community knowledge holders fairly through honoraria and mentorship programs.
- Advocate for community-led education initiatives, such as Indigenous-led curricula development and local certification models.
- Support weaving land-based and experiential learning programs into current education programs (e.g., wildlife stewardship curricula and on-the-land learning).
- Strengthen Arctic education networks (not only in formal education but across disciplines) to facilitate knowledge

exchange, share successful program examples, and undertake collaborative research across the circumpolar regions; these exchanges could include webinar series, workshops, and panels to continue this dialogue and create clear calls to action. This can be achieved through, for example, UArctic thematic networks and institutions, as well as regional partnerships.

While these key takeaways provide valuable insights, we recognize important limitations to their application. A single panel and workshop offers only a partial snapshot of ongoing work. These reflections are based on a small sample size and limited Indigenous representation, which narrows the range of perspectives captured. Much important and rich activity in Indigenous knowledge, pedagogy, and climate change education exists across the Arctic. Our reflections should be read as opening a space for dialogue, rather than representing the breadth of work already underway. Further, our panel and workshop were not intended as formal research. Thus, future work could expand insights by engaging a larger, broader range of Indigenous scholars, community members, youth, and regional contexts through, for example, focus groups or key actor interviews. These limitations highlight the need for ongoing dialogue and collaboration to better understand the landscape of educational transformation in the Arctic, particularly as communities respond to the challenges of environmental change and climate resilience.

The six takeaways mentioned above highlight the importance of continuing to discuss these topics to break silos and foster collaborations among scholars and community practitioners from different Arctic contexts. The UArctic community is well positioned to share knowledge among thematic networks to continue this collaboration and discuss the relevance of the findings. The thematic network on "teacher education for social justice and diversity" is planning future webinars on community-based participatory education to continue this conversation. By supporting the creation of a flexible and locally contextualized framework, we can strengthen circumpolar education programs that align with the local realities of communities and support their resilience in a rapidly changing Arctic.

The insights we have shared in this article reveal the need to continually re-imagine Arctic education and recognize the value of diverse knowledge systems in shaping inclusive and meaningful programs. Mutually beneficial relationships and partnerships are key in the co-creation of inclusive education programs, and so is the role of participatory approaches in disrupting current colonial ways of creating education content and sharing knowledge. While bringing together these knowledge systems into education, it is important to highlight the need for place-based adaptations of these programs. Each Arctic community has its unique environmental, cultural, and social realities, and adapting programs to those particularities will better support local resilience. While we touched on the decolonization of

Western education in the Arctic context, we acknowledge that tensions exist and there is a strong call for systemic transformation, rather than simple integration of Indigenous knowledge into a colonial system. The risks of oversimplification and tokenism need to be considered. To do so, non-Indigenous researchers need to reflect on their own positionality to confront the colonial system we are in and actively collaborate with Indigenous scholars and community members to challenge that system.

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