

Final Report
**Education and
Knowledge-Sharing In and
About the Arctic:
Research and Practice**

March 2026





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1. Executive Summary

This report, *RPT 6: Education and Knowledge Sharing in and about the Arctic: Research and Practice*, is a comprehensive synthesis of findings from the International Conference on Arctic Research Planning (ICARP IV) and its associated Research Priority Team 6 (RPT 6). The report examines the dual facets of

Arctic education: education *in* the Arctic (within Arctic communities) and education *about* the Arctic (in global contexts). It emphasizes the importance of integrating Indigenous, local, and Western knowledge systems to enhance educational practices and knowledge sharing in Arctic regions.

Key Themes and Findings:

1. Integration of Diverse Knowledge Systems:

Effective Arctic education requires the recognition and integration of Indigenous, local, and scientific knowledge systems.

This approach ensures culturally relevant and epistemically diverse learning experiences, fostering mutual respect and understanding.

2. Contextualized and Place-Based Pedagogy:

Education in Arctic regions is most effective when it engages directly with the local environment, cultural practices, and community priorities.

Experiential and land-based learning methods are emphasized to promote community resilience and sustainability.

3. Global Relevance and Outreach:

Education about the Arctic extends beyond the region, contributing to global understanding of Arctic environmental, social, and political issues.

This outreach fosters cross-cultural and transnational collaboration, enhancing global awareness and action on Arctic challenges.

4. Research-Practice Synergy:

The report underscores the importance of iterative interactions between research and educational practice.

This synergy enables evidence-based interventions, continuous improvement, and knowledge co-production, bridging the gap between theory and practice.

5. Partnerships and Capacity Building:

Collaborative networks among researchers, educators, communities, and policymakers are essential for sustaining effective educational initiatives.

Investing in capacity-building initiatives that bridge local communities and global audiences is crucial for scaling innovations and ensuring long-term impact.

RPT 6 positions Arctic education as a critical field of inquiry and practice, with implications for research, policy, and pedagogy across multiple scales and settings. The report concludes with strategic recommendations to enhance both education in the Arctic and education about the Arctic. These include supporting interdisciplinary research, expanding access to culturally and contextually relevant curricula, fostering international collaboration, and investing in capacity-building initiatives that bridge local communities and global audiences.



2. Definition of the Focus of RPT 6

Focus definition

RPT 6, *Education and Knowledge Sharing in and about the Arctic: Research and Practice*, encompasses a broad set of activities focused on advancing research on education in the Arctic as well as education about the Arctic, both in the north and globally. In this report Arctic education refers to both education *in the Arctic* and education *about the Arctic*; when only one of these is intended, it is specified explicitly. The title is intended to reflect that education in the Arctic is a content area for research that stands separate from the need to grow education about the Arctic and to enhance connections between Arctic researchers and educators. The terms “research” and “practice” encompass these multiple goals and are meant to be inclusive of educational practice and practitioners at all levels and in multiple settings, formal and informal. The use of the term “knowledge-sharing” is meant to expand the focus to include diverse knowledge systems, especially Indigenous and local knowledge systems in the Arctic, as well as education in non-institutional settings - on the land, in communities and families, in museums and community organizations, alongside Western science.

Rationale for prioritization

These focus areas were selected because they address urgent gaps in understandings of how Arctic educational systems function, as well as how Arctic knowledge is generated, shared, and applied—particularly the need for education systems in the north to be more culturally relevant, decolonized, and community-rooted. Strengthening ties between Indigenous Knowledge Holders, local communities, polar educators, and academic institutions creates more inclusive and effective research collaborations and educational practices. Moreover, engaging Arctic youth as active participants and future leaders provides opportunities to develop their skills and ensures the sustainability of research and community well-being in a rapidly changing Arctic environment. These priorities align with broader commitments to sustainability, reconciliation, and capacity development within Arctic research ecosystems.

Areas not covered and reasons

Certain topics, such as advanced technical Arctic infrastructure or deep climate modeling, were beyond the RPT’s scope due to limited expertise within the team and the strategic focus on education, public management, and knowledge systems. Time constraints and the broad mandate of other RPTs also meant that while interdisciplinary collaboration was encouraged, the RPT prioritized actionable education, engagement, and management strategies that can directly impact Arctic communities and research culture over the next decade.



3. Priorities and Needs in Arctic Research for the Next Decade

This chapter identifies the most urgent research needs and priorities within the remit of RPT 6, education and knowledge sharing in and about the Arctic, as well as cross-cutting themes that emerged in our work. As the focus of ICARP VI is on research priorities, we do not directly address best practices in education in the north or best practices in educating about the Arctic. That said, these are important topics not only as a focus of

research but also as initiatives that must be implemented in order to ensure sustainability in the Arctic and globally. It is not enough to support the research and practices called for in this chapter; the outcomes of the work prioritized in this chapter, especially learnings about best practices, will provide critical guidance for actions critical to achieving sustainability goals, and those must also be resourced and supported.

3.1. Needs and Priorities specific to the RPT 6 topic area

3.1.1. Research Needs for the RPT 6 topic area

Research need	Description of the research need	Rationale why included in this report
1. Formal /secondary level Arctic education resources and research need to be co-designed /co-produced with local and Indigenous communities to ensure equitable partnerships and meaningful outcomes. (Principles for practice)	Arctic education resources and research at the secondary and formal levels should not be designed outside of the north or imposed from outside. They need to be co-designed and co-produced with Indigenous and local communities in ways that ensure equitable partnerships and result in meaningful, culturally relevant outcomes.	Including this need emphasizes ethical research practices, acknowledges Indigenous Knowledge systems, and ensures educational content is accurate, respectful, and locally grounded.
2. Arctic community members, educators, and researchers need, on an ongoing basis, to define collectively the key information about the Arctic that should be disseminated as well as the barriers, gaps, and needs in support of formal teaching and informal public engagement in and about the Arctic	Arctic researchers, Arctic community members, and educators in all settings need an ongoing set of discussions among each other to collectively identify the essential knowledge about the Arctic that should be taught and communicated in schools, universities, communities, and other public settings, while mapping existing barriers, gaps, and needs in formal education and informal public engagement. These are not one-off discussions, and they need to happen in multiple places - conferences, community gatherings, educational settings, and some sort of common portal established where outcomes of these gatherings can be shared, hosted by some combination of Polar Educators International, UArctic, IASC, and other organizations.	This step establishes a clear foundation for curriculum development and outreach, ensuring education efforts address real deficits rather than duplicating existing work.
3. Strategies are needed to ensure that educators worldwide know about and can access curated materials and the essentials that should be taught about the Arctic. (that has to be defined: see 2)	There is not an easily accessible and curated online resource where educators at both the K-12 and postsecondary level can find high-quality materials that cover the agreed-upon essentials of Arctic knowledge. Pieces exist, such as the UArctic online resources for Circumpolar Studies, but these are focused on postsecondary education. Such a resource will take a concerted effort and consistent planning (see 2)	Without accessible resources, even well-defined educational priorities cannot reach classrooms, limiting the global impact of Arctic science and awareness.

Research need	Description of the research need	Rationale why included in this report
<p>4. Identify, develop, and offer effective training in science communications and education outreach strategies for early career Arctic researchers, and develop and implement evaluations of the effectiveness of science communication and education outreach efforts across the North.</p>	<p>Early career Arctic researchers need to know how to engage in effective science communication and education outreach strategies. This training is not typically part of graduate programs nor is it readily available to the research community in most countries. There also needs to be more consistent assessments of the effectiveness and impact of science communication and educational outreach efforts along with recognition of the importance of these as part of research careers.</p>	<p>Effective planning for, training in, and evaluation of science communication and education outreach for early-career Arctic researchers is essential to build their capacity to share knowledge with diverse audiences, from policymakers to local communities. Equipping them with communication skills, evaluation tools, and structured outreach strategies ensures that research outcomes are more impactful, widely accessible, and relevant to both scientific and societal needs.</p>
<p>5. Communication between Arctic scientists, policymakers, and educators must be strengthened and efforts to increase the connections supported in a sustained manner.</p>	<p>The communication between Arctic researchers, policymakers, and educators are too often tenuous and slow, and there are barriers both structurally and financially to improving the ability of researchers to reach decisionmakers and educators. A parallel challenge is the lack of support for educators, formal and informal, working to translate Arctic research for broad audiences.</p>	<p>Addressing this challenge will ensure that cutting-edge research can more quickly impact policy decisionmaking as well as education and public engagement.</p>



Inga Beck

3.1.2. Priorities for Arctic Research for the RPT 6 topic area

Priorities for research	Reason why this should be an ICARP IV Priority
<p>1. Researchers need to study multiple approaches for transforming education so that it better meets the needs of and represents Arctic peoples and places.</p> <p><i>Sub-questions include:</i></p> <ol style="list-style-type: none"> 1.1. How can communities, educators, and students decolonize educational processes at the primary, secondary, and post-secondary levels? 1.2. How can educational systems build on the wisdom of past generations of Indigenous and local Arctic peoples? 1.3. What are best practices in land-based and place-based education in the Arctic? 	<p>Education in the Arctic must be rooted in the realities of the region's peoples, futures, histories, and geographies. Decolonizing education is not only a justice issue—it is essential to the region's sustainability, resilience, and identity. Indigenous pedagogies/andragogies, land-based learning, and place-based curricula have transformative potential, but require robust study, ethical collaboration, and support from all levels of governance. Research in this area is needed to ensure that educational systems empower Arctic youth, strengthen community identity, and support self-determination.</p>
<p>2. Researchers need to explore how educators can build bridges between Indigenous Knowledges, local knowledge, and Western science systems within Arctic education systems?</p>	<p>Both Indigenous and local knowledge systems with Western science are essential for holistic understanding of Arctic change. This requires respectful relationship-building, ethical frameworks, and shared governance in research. This is particularly critical in educational and capacity-building contexts, where epistemological equity is often overlooked. Research should explore models for collaborative knowledge co-production, recognition of local protocols, and long-term partnerships that are not extractive but reciprocal and community-led.</p>
<p>3. Researchers should study the role that education, from early childhood through post-secondary, tertiary and informal settings, plays in supporting sustainability in Arctic communities.</p> <p><i>Sub-questions include:</i></p> <ol style="list-style-type: none"> 3.1. What roles do secondary and post-secondary education systems play in sustainability and adaptation strategies? 3.2. Are there alternative models of knowledge sharing, within or outside institutional settings, that are more relevant or effective for Arctic? What is the balance between community-driven and institution-driven education? 3.4. What are future workforce needs in the Arctic that education can prepare learners for? 	<p>Education is a key lever in advancing sustainable development and community resilience. However, its current role in Arctic sustainability—both environmental and socio-cultural—remains understudied. Education that is disconnected from the land, language, and local context may undermine rather than support resilience. Research should examine how formal education systems (especially secondary/high school and post-secondary) contribute to local sustainability goals and identify how other learning forms (e.g., community workshops, land-based camps, mentorship) might be more relevant or impactful in certain contexts.</p>
<p>4. Research is needed on how best to attract and retain educators in primary and secondary education, whether local or from outside the region.</p> <p><i>Sub-questions include:</i></p> <ol style="list-style-type: none"> 4.1. How do we address teacher retention and professional development in remote Arctic communities? 4.2. How can distance education and hybrid models be made effective? 4.3. How do we recognize and accredit local educators equitably? 	<p>There are fewer science education specialists coming out of the schools of education to teach, and those who finish science education degrees are staying in the south and less interested in going north.</p> <p>Recruiting and retaining qualified, culturally competent educators remains one of the Arctic's most pressing systemic challenges. High turnover, lack of local training opportunities, and insufficient recognition for community-based educators weaken the continuity and quality of education. Research is needed to identify context-sensitive solutions, including remote professional development, alternative certification pathways, Indigenous-centered educational programs, supporting Indigenous language within educational processes, and support for local capacity-building. These actions are critical for ensuring long-term educational quality and continuity in Northern and Indigenous communities.</p>
<p>5. Research is needed on how best to leverage and work across multiple sectors – all levels of education, government, NGOs, and communities – to develop and support Indigenous language revitalization efforts as well as the integration of Indigenous knowledge systems into the education enterprise at all levels – early childhood education through adult learning.</p> <p><i>Sub-questions include:</i></p> <p>How, within those developing relationships, do we recognize the importance of local protocols for honouring Indigenous Knowledges? What strategies can effectively incorporate Indigenous languages and cultural values into Arctic education, and how does this impact community resilience?</p> <ol style="list-style-type: none"> 5.1. How do we support Indigenous language inclusion across curricula and research? 5.2. How do we honour local protocols for teaching and knowledge sharing? 5.3. What impact does language revitalization have on community resilience? 	<p>Indigenous languages are foundational to cultural continuity, intergenerational knowledge transfer, and identity in Arctic communities. Indigenous language revitalization intersects with mental health, youth well-being, governance, and sovereignty. Yet revitalization efforts remain chronically under-resourced and siloed. Research should examine how educational institutions, governments, and communities can collaborate in ways that centre Indigenous agency and ensure respect for language protocols. Understanding the impacts of revitalization efforts can also inform policies that support language use across all domains of Arctic life—from schools to science.</p>

3.2. Cross-Cutting Needs and Priorities

Cross-cutting needs and priorities are defined as not only relevant for one of the RPT topic areas specifically, but instead cutting across several of the seven topic areas:

- RPT 1: The Role of the Arctic in the Global Earth System
- RPT 2: Observing, Reconstructing, and Predicting Future Climate Dynamics and Ecosystem Responses
- RPT 3: Understanding the Dynamics and Resilience of Arctic Social-Ecological Systems to Foster Sustainable Futures
- RPT 4: Arctic Research Cooperation and Diplomacy
- RPT 5: Co-Production and Indigenous-led Arctic Research
- RPT 6: Education and Knowledge-Sharing In and About the Arctic: Research and Practice
- RPT 7: Technology, Infrastructure, Logistics, and Services

3.2.1. Cross-Cutting Research Needs

Research need	Description of the research need	Rationale why included in this report
1. Enhance the resources devoted to training polar early career researchers including around how to collaborate with educators in schools, universities and in other settings	This includes funding and programming for ECRs to gain interdisciplinary training, collaborate with educators across formal and informal settings, and engage in reciprocal knowledge-sharing with Arctic communities.	Developing the next generation of Arctic researchers requires more than technical skills. ECRs need tools and training to work ethically and effectively with local communities, including Indigenous educators, youth, and Elders. Supporting these interactions early in a researcher’s career improves the quality, relevance, and long-term impact of Arctic research.
2. Evaluate the effectiveness and impact of education and outreach activities and the success of science communication	There is a need for clear methodologies, metrics, and frameworks to assess whether education and science communication activities are improving public understanding, policy relevance, and research uptake in Arctic and non-Arctic societies.	As investment in science communication and public engagement grows, it is critical to ensure these efforts are meaningful and measurable. Establishing robust tools for evaluating impact helps guide better practices and justifies continued or increased funding. It also ensures that outreach is not symbolic, but transformative.
3. Enhance the resources devoted to preparing more researchers (including those from non-Arctic countries) in all fields of Arctic science, with a particular focus on providing Early Career Researchers opportunities and financial support to build international collaborations	Coordination at the international level on funding for education is necessary to maximize the effort. Questions are: 1) How to make sure that training programs for Early Career Scientists respect the research priorities identified in ICARP? (e.g. the focus of grantmaking). 2) How to make sure that grant programs are coordinated at the international level between funding agencies, in order to maximize the effort? Which are the coordinating bodies to which national/local agencies can refer to? Can IASC be such a coordinating body?	Enhancing resources for the training of Arctic scientists, with a focus on Early Career Researchers, is crucial to build the next generation of experts capable of addressing the complex challenges of polar science. Providing opportunities for training in Arctic institutions abroad and supporting mobility through travel ensures knowledge exchange, fosters international collaboration, and strengthens scientific capacity across disciplines and regions.
4. Academic institutions should foster, formally recognize and measure outreach and service contributions by researchers	Community engagement and outreach should be integrated into academic evaluation systems e.g., be considered in hiring, promotion, tenure, and funding decisions. Research is needed to develop indicators, standards, and institutional models for this recognition.	Outreach to communities and schools remains under-valued in academic careers. If Arctic researchers—especially ECRs—see outreach as a career liability, its potential for knowledge translation and inclusion will remain under-realized. Institutional recognition would incentivize broader, more meaningful engagement.
5. Identify effective strategies to engage Arctic youth (15+) in research planning, education, and decision-making—and support long-term pathways for their involvement	This includes studying participatory models that include youth voices in decision-making and co-research processes, along with identifying supports (e.g., mentorship, funding, curriculum integration) that sustain youth engagement across education and research systems.	Arctic youth are already leaders in climate action and community resilience. However, they are often sidelined in formal research and governance processes. Ensuring their active, sustained participation is essential for just and inclusive Arctic futures. This aligns with youth-centred approaches promoted in reconciliation frameworks, and strengthens intergenerational resilience.

3.2.2. Cross-Cutting Priorities for Arctic Research

Priorities for research	Reason why this should be an ICARP IV Priority
<p>1. How can young people (ages 15+) in Arctic regions be effectively engaged in education, research planning, and decision-making, and what pathways can sustain their involvement?</p>	<p>Arctic youth are key drivers of community resilience and long-term sustainability. However, they are often underrepresented in formal research and policy development. Prioritizing meaningful youth engagement helps create research processes that reflect intergenerational needs, aspirations, and knowledge. This includes identifying culturally relevant mentorship pathways, incorporating youth voices in decision-making structures, research with relevance to their lived experience, and investing in leadership opportunities that connect youth to education, science, and policy sectors. Sustaining youth engagement requires recognizing diverse knowledge systems, reducing barriers to access (e.g., language, digital divide), and building feedback mechanisms that validate youth contributions. By embedding youth voices, the ICARP IV process will foster more inclusive, community-driven Arctic research systems.</p>
<p>2. Researchers need to identify and implement inclusive and collaborative frameworks that integrate Indigenous Knowledge systems, local knowledge, and Western science in equitable and ethical ways, across the entire Arctic research enterprise.</p>	<p>Indigenous Peoples are Knowledge Holders, researchers, and educators. Cross-cutting research must prioritize the co-development of educational and research frameworks that respect Indigenous rights, uphold community protocols, and recognize the strengths of multiple knowledge systems. This includes developing long-term partnerships, supporting Indigenous-led education initiatives, and addressing colonial legacies in Arctic education and science. Doing so aligns with reconciliation principles and contributes to stronger, more legitimate Arctic knowledge systems.</p>
<p>3. Strengthen institutional recognition and structural support for community service and educational outreach activities, science communication, and public engagement by researchers</p>	<p>Effective science communication and outreach are central to Arctic knowledge mobilization and climate literacy. However, researchers often face institutional disincentives when engaging in these activities. A cross-cutting priority for the next decade is to reform institutional systems—such as tenure, promotion, and funding evaluation criteria—to recognize outreach as a valuable component of research. This also includes the development of common frameworks and performance indicators to assess outreach effectiveness and impact.</p>
<p>4. Expand international and intersectoral coordination for Arctic education, training, and capacity building, particularly for Early Career Researchers (ECRs)</p>	<p>Cross-border collaboration is essential to advancing Arctic research capacity, yet ECRs often face logistical, financial, or institutional barriers to participating in international education and training opportunities. This priority calls for a coordinated effort among Arctic states, Indigenous and local organizations, and international funding bodies to align educational priorities, share training resources, and support reciprocal learning. Such efforts should reflect ICARP IV research goals and promote equity, especially for researchers and learners from remote and Indigenous communities.</p>
<p>5. Enhance the resources devoted to training Arctic scientists in all fields of Arctic science (especially Early Career Researchers training in Arctic institutions abroad, and for travelling)</p>	<p>Language and culture are foundational to Arctic community resilience. This cross-cutting priority highlights the urgent need to invest in language and cultural education that is developed by and for Indigenous communities. Research can support these efforts by identifying effective models, policy enablers, and digital tools for revitalization. Additionally, collaborations between researchers, language experts, and communities can document and sustain intergenerational knowledge transfer. These efforts also support mental wellness, cultural continuity, and adaptive capacity in the face of rapid change.</p>



Diane Hirshberg



4. Recommendations to implement the identified Priorities for Arctic Research

4.1. Implementation of the RPT 6-specific Priorities

Priority 1:

Researching multiple approaches to transform Arctic education to better meet the needs of and represent Arctic peoples and places. This includes decolonizing education at all levels, building on Indigenous and local wisdom, and identifying best practices in land-based and place-based education in the Arctic.

Spatial scale:	Pan-Arctic with regional adaptations—this priority requires a broad scope to respect the diversity of Arctic communities while addressing overarching systemic issues.
Time scale:	Relevant immediately and throughout the next 10 years, given the urgency of education reform and cultural preservation in the Arctic.
Funding requirements and potential sources:	<ul style="list-style-type: none"> • Multi-year funding grants focused on education transformation, Indigenous Knowledge integration, and community partnerships • Potential sources include national funding agencies, Indigenous organizations, international Arctic research bodies, and philanthropic foundations with education or Indigenous mandates • Dedicated funding for community-led projects and co-design processes
Infrastructure needs and requirements:	Robust educational infrastructure is required to support community-led, land-based, and place-based learning programs. This includes spaces for experiential learning, access to digital technologies, and development of culturally relevant curricula that integrate Indigenous Knowledge and regional practices.
Data needs and requirements:	<ul style="list-style-type: none"> • Baseline data on current innovative practices in education across Arctic regions, from curricular and pedagogical innovations in primary, secondary, and post-secondary education, to place-based, informal, and land-based methods to changes in education policy and governance that improve learning and knowledge transfer in culturally responsive ways • Documentation of existing Indigenous Knowledge Systems, local knowledge sharing practices, and community perspectives on education needs. • Data management ethics following CARE principles for this data and further exploration and adoption of the appropriate education research data management frameworks such as the Standardized Data Management Plan for Educational Research (Stamp) and the principles of the FAIR data principles. • Monitoring and evaluation frameworks to assess effectiveness of implemented educational transformations

Implementation: Implementation actions:	How to implement the actions:	Who to address the actions:
1. Develop collaborative frameworks for co-design of curricula and teaching methods	Initiate partnerships between educational institutions, Indigenous governance bodies, and research organizations to formalize co-design processes	Indigenous governments and organizations; educational institutions; research institutions
2. Establish pilot projects in Arctic communities to trial education models	Leverage existing networks (e.g., Arctic Council Working Groups, Indigenous educational coalitions) to identify community leaders and educators for pilot projects	Indigenous organizations; community leaders; educational institutions
3. Provide education and professional development and for educators with Indigenous Knowledge Holders	Design professional development programs collaboratively, ensuring Indigenous educators are central to program delivery	Educational institutions; Indigenous knowledge holders; teacher associations
4. Secure sustained funding mechanisms for community-driven education initiatives	Advocate to funding agencies for multi-year commitments that allow projects to adapt and mature beyond initial pilot phases	Funding agencies; philanthropic foundations; government bodies
5. Create platforms for knowledge exchange and community of practice development	Use digital platforms, conferences, and workshops to share results and develop a community of practice for Arctic education transformation	Polar knowledge networks; international Arctic bodies; research institutions

Priority 2:
Build bridges between Indigenous Knowledge, local knowledge, and Western science systems to create integrated approaches for Arctic education and research.

Spatial scale: Pan-Arctic with emphasis on regional and community-specific adaptations.

Time scale: Relevant now and for the next 10 years (2025-35).

Funding requirements and potential sources:

- Funding needed for collaborative research, knowledge-sharing workshops, and community engagement activities
- Potential sources include federal research grants, Indigenous organizations, Arctic research networks, and international programs supporting knowledge integration

Data needs and requirements:

- Comprehensive mapping of existing Indigenous and local knowledge systems relevant to Arctic education
- Case studies and evaluation reports on successful knowledge integration initiatives
- Development of ethical protocols for knowledge sharing respecting Indigenous intellectual property rights

Implementation: Implementation actions:	How to implement the actions:	Who to address the actions:
1. Establish ongoing forums for dialogue and collaboration between Indigenous Knowledge Holders, local experts, educators (broadly defined) and scientists	Use existing Arctic Council working groups, Arctic research organizations and conferences, and Arctic Indigenous organizations to facilitate regular, inclusive forums for mutual learning and co-development of knowledge frameworks	Arctic research organizations (IASC, UArctic, IASSA); community leaders; Indigenous organizations;
2. Develop joint research projects that integrate Indigenous, local, and Western science knowledge	Secure funding and partnerships that explicitly support transdisciplinary research co-designed with Indigenous communities, ensuring equitable participation and benefit	Research institutions; Indigenous organizations; funding agencies
3. Create training and capacity-building programs for researchers and community members on cross-knowledge communication	Develop workshops and courses focused on intercultural communication, ethical knowledge sharing, and collaborative research methods	Universities; Indigenous educational bodies; research networks
4. Implement ethical guidelines and protocols for knowledge sharing and data sovereignty	Co-create guidelines respecting Indigenous data sovereignty, intellectual property rights, and cultural protocols in collaboration with Indigenous governance	Indigenous governments; research ethics boards; funding agencies
5. Share successful models and lessons learned through publications, conferences, and community meetings	Use digital platforms, Arctic conferences, and community gatherings to disseminate findings and promote best practices in knowledge integration	Polar knowledge networks; Indigenous organizations; research institutions

Priority 3: Improve attraction, retention, and professional development of educators—especially in rural, remote, and Indigenous Arctic communities.		
Spatial scale:	Local, regional, and pan-Arctic.	
Time scale:	Relevant now and in the next 5-10 years.	
Funding requirements and potential sources:	<ul style="list-style-type: none"> • Sustained investment in teacher recruitment and training tailored to Arctic contexts • Support for flexible certification pathways and mentorship programs • Potential sources include national/provincial-state/territorial education departments, Indigenous governments, Arctic-focused philanthropic foundations, and bilateral or international Arctic education partnerships 	
Infrastructure needs and requirements:	Reliable digital connectivity, accessible training, and culturally relevant resources are needed to support the attraction, retention, and development of educators in rural, remote, and Indigenous Arctic communities.	
Data needs and requirements:	<ul style="list-style-type: none"> • Quantitative and qualitative data on educator turnover, professional development access, and gaps in subject-area expertise • Community-informed indicators of teacher effectiveness and wellbeing • Comparative research on distance education strategies and culturally relevant credentialing models 	
Implementation:		
Implementation actions:	How to implement the actions:	Who to address the actions:
1. Co-develop localized teacher education and certification programs	Create flexible, modular training pathways that are accessible in rural areas and integrate local knowledge and language	Indigenous education authorities; teacher colleges; provincial-state/territorial ministries-departments of education
2. Establish mentorship and support networks for educators in Arctic regions	Pair new teachers with experienced mentors locally and remotely; offer supports for professional isolation and cultural adaptation	School boards; universities; Arctic education NGOs
3. Invest in blended and distance learning infrastructure for teacher development	Enhance the quality, accessibility, and cultural relevance of online learning platforms and resources for educators	Ministries-departments of education; broadband infrastructure programs; research institutions
4. Provide financial incentives and housing supports to attract and retain educators	Develop targeted grants, housing assistance, and wage subsidies for educators serving in remote Arctic communities	Federal/provincial-state/territorial governments; Indigenous governments; teacher unions
5. Recognize and support local educators, including Elders and language speakers, through flexible accreditation	Create credentialing mechanisms that value community-based teaching and language revitalization efforts, and ensure equitable pathways to professional recognition	Teacher colleges/teacher education programs; Indigenous Knowledge councils; educational policy makers

Priority 4: Explore the role of education at multiple levels and settings in supporting sustainability initiatives within Arctic communities.		
Spatial scale:	Regional and local, with pan-Arctic relevance.	
Time scale:	Relevant now and for the next 10 years (2025-35).	
Funding requirements and potential sources:	<ul style="list-style-type: none"> • Funding to support interdisciplinary research projects combining education, community development, and sustainability science • Support for community-led education initiatives • Potential sources include national research councils, Indigenous organizations, sustainability-focused foundations, and Arctic collaboration funds 	
Data needs and requirements:	<ul style="list-style-type: none"> • Baseline data on current educational programs and their links to sustainability efforts in Arctic communities • Case studies on successful education-supported sustainability projects • Community feedback and participatory research data documenting local priorities and educational impacts 	
Implementation:	How to implement the actions:	Who to address the actions:
Implementation actions:		
1. Conduct community-based research to document how education supports sustainability goals	Collaborate with local communities to design and implement participatory research projects focusing on education's role in sustainability	Indigenous organizations; universities; local schools; community sustainability groups
2. Develop curriculum and programs that embed sustainability and community priorities	Work with educators, Knowledge Holders, and policymakers to integrate sustainability principles and local priorities into educational content across all levels	Educational institutions; Indigenous governments; curriculum developers
3. Facilitate knowledge exchange forums between educators, community leaders, and sustainability practitioners	Organize workshops and conferences to share experiences and best practices for embedding sustainability in education	Polar networks; research institutions; Indigenous organizations
4. Secure multi-year funding for community-driven education sustainability projects	Advocate with funding agencies for dedicated grants that support long-term educational initiatives aligned with community sustainability goals	Funding agencies; Indigenous foundations; Arctic research councils
5. Monitor and evaluate the impact of education on sustainability outcomes in Arctic communities	Develop and implement assessment tools co-designed with communities to track educational impact on sustainability goals and community wellbeing	Researchers; community organizations; educational authorities

Priority 5: Coordinate international funding for education and training to align with Arctic research priorities.		
Spatial scale:	Local, regional, and pan-Arctic.	
Time scale:	Urgent and relevant throughout the next 10 years and beyond.	
Funding requirements and potential sources:	<ul style="list-style-type: none"> • Long-term, community-led investments in language and cultural education programs • Dedicated funding for intergenerational teaching, curriculum co-development, and knowledge mobilization • Potential sources: Indigenous governments and organizations; national language revitalization initiatives; research councils; philanthropic foundations with a focus on Indigenous rights, cultural heritage, and education 	
Infrastructure needs and requirements:	Infrastructure such as language resource centres, digital archives, and culturally tailored educational platforms is needed to support the revitalization of Indigenous languages and the integration of Indigenous Knowledge systems in Arctic education.	
Data needs and requirements:	<ul style="list-style-type: none"> • Community-defined indicators of success for language and knowledge transmission • Inventories of existing resources and identification of content gaps • Evaluation of effective program models for different Arctic contexts 	
Implementation:		
Implementation actions:	How to implement the actions:	Who to address the actions:
1. Support Elders and language Knowledge Holders as core educators and co-developers of curriculum	Develop formal roles for Elders and language experts in school and land-based learning programs, with fair compensation and decision-making authority	Indigenous governments; education authorities; school boards
2. Fund and scale immersion programs, language nests, and on-the-land cultural learning initiatives	Prioritize programs that place language and traditional knowledge at the centre of learning experiences, especially for early childhood and youth	Indigenous-led education providers; ministries-departments of education; community organizations
3. Establish shared repositories of Indigenous language and knowledge resources, controlled by communities	Digitize and archive audio, video, and written materials in a secure, community-governed format, with appropriate data sovereignty and access protocols	Local governments; Indigenous Knowledge Holders; research institutions with data stewardship capacity
4. Develop culturally responsive teacher education pathways that prioritize Indigenous languages and pedagogies / andragogies	Adapt teacher education programs to include Indigenous epistemologies and ensure pathways for community-based educators to gain formal qualifications	Teacher education institutions; Indigenous teacher associations; curriculum developers
5. Facilitate cross-sector partnerships to strengthen Indigenous language policy and funding across education systems	Convene collaborative networks that include Indigenous organizations, government departments, and researchers to align policy with grassroots language revitalization goals	Language policy experts; Indigenous leadership; education and heritage ministries-departments; academic institutions

4.2. Implementation of the Cross-Cutting Priorities

Priority 1: How can young people (ages 15+) in Arctic regions be effectively engaged in education, research planning and decision-making, and what pathways can sustain their involvement?																				
Spatial scale:	Local, regional, pan-Arctic																			
Time scale:	Relevant immediately; critical for the next 10 years (2025-2035)																			
Funding requirements and potential sources:	<ul style="list-style-type: none"> Multi-year youth-focused grants Government youth programming 	<ul style="list-style-type: none"> Philanthropic funders (e.g., Arctic-focused foundations) Education and science councils 																		
Infrastructure needs and requirements:	Accessible digital platforms, community learning spaces, mentorship programs, and supportive policies are needed to effectively engage young people (ages 15+) in Arctic education, research planning, and decision-making, while creating sustainable pathways for ongoing participation.																			
Data needs and requirements:	<ul style="list-style-type: none"> Youth participation indicators Baseline data on youth inclusion in Arctic research and governance Longitudinal tracking of involvement and impact 																			
Implementation: <table border="1"> <thead> <tr> <th>Implementation actions:</th> <th>How to implement the actions:</th> <th>Who to address the actions:</th> </tr> </thead> <tbody> <tr> <td>Establish Arctic Youth Advisory Councils</td> <td>Support creation of youth councils within research organizations, government departments, and Indigenous governance bodies</td> <td>Arctic governments, Indigenous organizations, youth NGOs</td> </tr> <tr> <td>Fund youth-led research and community initiatives</td> <td>Provide small grants and mentorship for youth to lead projects in science, education, and civic engagement</td> <td>Research councils, philanthropic foundations, community trusts</td> </tr> <tr> <td>Develop mentorship networks</td> <td>Match youth with Elders, educators, scientists, and community leaders</td> <td>Universities, Indigenous Knowledge networks, NGOs</td> </tr> <tr> <td>Integrate youth voices in governance</td> <td>Include youth in boards, steering committees, and decision-making structures</td> <td>Arctic Council observers, NGOs, school boards</td> </tr> <tr> <td>Highlight youth contributions</td> <td>Create public platforms (digital, conference-based) to showcase youth-led work</td> <td>IASC, local media, educational platforms</td> </tr> </tbody> </table>			Implementation actions:	How to implement the actions:	Who to address the actions:	Establish Arctic Youth Advisory Councils	Support creation of youth councils within research organizations, government departments, and Indigenous governance bodies	Arctic governments, Indigenous organizations, youth NGOs	Fund youth-led research and community initiatives	Provide small grants and mentorship for youth to lead projects in science, education, and civic engagement	Research councils, philanthropic foundations, community trusts	Develop mentorship networks	Match youth with Elders, educators, scientists, and community leaders	Universities, Indigenous Knowledge networks, NGOs	Integrate youth voices in governance	Include youth in boards, steering committees, and decision-making structures	Arctic Council observers, NGOs, school boards	Highlight youth contributions	Create public platforms (digital, conference-based) to showcase youth-led work	IASC, local media, educational platforms
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Highlight youth contributions	Create public platforms (digital, conference-based) to showcase youth-led work	IASC, local media, educational platforms																		
Priority 2: How do we build bridges between Indigenous Knowledge, local knowledge, and Western science systems?																				
Spatial scale:	Regional, pan-Arctic, global																			
Time scale:	Next 10 years, with foundational efforts in first 5 years																			
Funding requirements and potential sources:	<ul style="list-style-type: none"> Strategic research and education grants National research councils support 	<ul style="list-style-type: none"> Indigenous-led research funds International science collaborations 																		
Infrastructure needs and requirements:	Collaborative research hubs, knowledge-sharing platforms, and culturally inclusive training programs are needed to build bridges between Indigenous Knowledge, local knowledge, and Western science systems.																			
Data needs and requirements:	<ul style="list-style-type: none"> Mapping of successful co-production practices Frameworks for knowledge integration Evaluation tools for equitable collaboration 																			
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Priority 3: Enhance the resources and infrastructure for training Early Career Researchers (ECRs) to collaborate with educators and communities.		
Spatial scale:	Global, pan-Arctic	
Time scale:	Relevant now; sustained over next 10 years	
Funding requirements and potential sources:	Increased support from national research agencies, Arctic-focused training programs, EU/Canada/Nordic initiatives, Polar research institutes	
Infrastructure needs and requirements:	Accessible training centres, digital collaboration platforms, and funding for community-engaged programs are needed to enhance resources and infrastructure for training Early Career Researchers to work effectively with educators and communities.	
Data needs and requirements:	<ul style="list-style-type: none"> • Inventory of existing ECR training • Identification of skill gaps in science communication and outreach • Metrics to assess ECR-community impact 	
Implementation:	Implementation actions:	How to implement the actions:
		Who to address the actions:
Develop polar science communication training modules	Embed outreach and education into ECR curricula and postdocs	Universities, UArctic, APECS
Incentivize community-engaged research	Link ECR grants to community impact metrics	National research councils, NGOs
Foster multi-institutional training hubs	Collaborate across borders to pool training resources and delivery	UArctic Thematic Networks, Arctic Council
Promote field-based ECR residencies in Arctic communities	Match ECRs with educators or Elders in communities	Indigenous organizations, polar research programs
Create ECR-educator fellowships	Encourage co-learning between young scientists and teachers	Science centres, schools, post-secondary institutions
Priority 4: Academic institutions should foster, formally recognize and measure outreach and service contributions by researchers		
Spatial scale:	Pan-Arctic, global	
Time scale:	Relevant immediately; action over next 5-10 years	
Funding requirements and potential sources:	Funding to develop evaluation frameworks; inclusion of outreach in grant criteria; foundations supporting public science engagement	
Infrastructure needs and requirements:	Infrastructure such as standardized evaluation tools, digital reporting platforms, and recognition systems are needed to foster, measure, and appropriately acknowledge outreach activities conducted by scientists.	
Data needs and requirements:	<ul style="list-style-type: none"> • Metrics for outreach effectiveness • Systems to assess outreach in academic performance reviews • Outreach outputs tracking (beyond publications) 	
Implementation:	Implementation actions:	How to implement the actions:
		Who to address the actions:
Include outreach in promotion and tenure processes	Redefine academic success to reward science communication and public engagement	Universities, research councils
Develop outreach evaluation tools	Co-design quantitative and qualitative measures of outreach success	Science communicators, Arctic educators
Create "impact factor" for outreach activities	Mirror publication citation models to assess engagement impact	Academic publishers, research networks
Offer training in effective outreach	Build ECR and senior researcher capacity for science communication	APECS, communication schools, NGOs
Establish institutional awards and incentives	Celebrate scientists who excel in public science engagement	Research institutions, Arctic-focused associations

Priority 5: Coordinate international funding for education and training to align with Arctic research priorities.		
Spatial scale:	Global, international, pan-Arctic	
Time scale:	Reform begins now; alignment achieved by 2030	
Funding requirements and potential sources:	Policy-level funding reform; coordination between national agencies and multilateral donors; support from philanthropic and Arctic research foundations	
Infrastructure needs and requirements:	Centralized funding platforms, coordinated grant mechanisms, and streamlined administrative support are needed to align international education and training resources with Arctic research priorities.	
Data needs and requirements:	<ul style="list-style-type: none"> • Analysis of existing Arctic education funding • Identification of overlaps and gaps • Recommendations for harmonization 	
Implementation:	How to implement the actions:	Who to address the actions:
Implementation actions:		
Convene funding alignment roundtables	Bring together Arctic funders to review and align priorities	IASC, Arctic Council working groups
Create coordinating bodies for Arctic education	Formalize communication and planning among funders and implementers	Research councils, Indigenous governments
Map funding to ICARP IV priorities	Ensure education and training dollars respond directly to RPT-identified gaps	Granting agencies, strategic advisory bodies
Develop shared funding principles	Establish ethical, inclusion-focused funding criteria	Foundations, polar research institutes
Report annually on funding effectiveness	Monitor progress toward alignment and priority fulfilment	International Arctic networks, academic consortia



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5. Recommendations on how to track the Implementation of the ICARP IV Outcomes over the next decade?

Implementation Action	How to track?	Who to track?	How to include in the IPY-5 planning?
Co-Design and Co-Production of Educational Resources	Track the number of co-produced resources, workshops, and community partnerships; include metadata tags such as “Produced under ICARP IV process” in publications, reports, and digital repositories. Conduct periodic surveys of community and educator satisfaction and engagement.	Partnership between Polar Educators International and UArctic education-related thematic networks	Include these resources as part of IPY 2032–33 initiatives, highlighting community co-production projects and ensuring all IPY outreach references the ICARP IV outcomes.
Establish open-access digital repositories and multilingual platforms for Arctic knowledge, educational resources, and training modules, including distance and hybrid learning materials for educators and early-career researchers.	Monitor platform usage, downloads, and engagement metrics. Track citations in curricula and publications and measure educator access globally. Incorporate reporting metrics in IPY monitoring dashboards.	Partnership between Polar Educators International and UArctic education-related thematic networks, and IASC	Make repositories a central component of IPY 2032–33, linking them to IPY education initiatives and tracking usage as part of IPY performance indicators.
Implement structured training programs for early-career Arctic researchers in science communication and community engagement, and for educators in remote and Indigenous Arctic communities. Include mentorship, evaluation tools, and professional development frameworks.	Track participation rates, completion of training modules, and measurable improvements in outreach quality. Collect feedback from educators, students, and communities. Track integration of ICARP IV priorities in training outcomes.	IASC could lead this with the support of national agencies, such as NSF (who ran “Communicating the Science” workshops) and NGOs that specialize in these activities	Embed these training modules into IPY 2032–33 programs as recognized professional development, linking participation to IPY funding and outputs.
Create coordination platforms and initiatives to connect Arctic scientists, policymakers, educators, and communities	Track utilization of coordination platforms; develop strategy for measuring policymakers’ use of Arctic science (e.g., data mining legislative websites for references to Arctic research, where scientists have testified to decisionmakers) National funding agencies can require scientists to report their interactions with educators and policymakers on nationally funded research; voluntary reporting mechanisms otherwise need to be developed	IASC and UArctic work together to develop tracking and reporting mechanisms	Use IPY 2032–33 to coordinate funding, highlight successful integration of science-policy-education partnerships. Include a visible ICARP IV tag on all IPY outputs supporting these initiatives.
Establish Arctic Youth Advisory Councils for national science funding agencies	Counts of councils established, track meetings and interactions with national agency personnel, and integration into research agendas	IASC working with national science agencies	Include youth council contributions in IPY planning documents and symposia
Fund youth-led research and community initiatives	Count of national agencies grant reporting with youth outcomes and follow-up studies at 5-year intervals	IASC working with national science agencies	Showcase youth-led projects as IPY case studies

Implementation Action	How to track?	Who to track?	How to include in the IPY-5 planning?
Support Indigenous-led education and research	Monitoring of grant allocations, publications, curricula developed, and community feedback	Indigenous governments; research funders	Prioritize Indigenous research themes in IPY science planning
Develop polar science communication training for ECRs	Maintain records of program graduates, outreach activities, and evaluations	Universities; APECS; ECR networks	Promote IPY training workshops for scientists as part of IPY legacy programming
Include science communication and education outreach in promotion and tenure systems	Annual faculty reviews; yearly audits of tenure criteria across Arctic institutions	Universities; research councils	Position public science engagement as a key IPY impact metric
Secure sustained funding for community-driven education and sustainability projects	Funding body dashboards tracking multi-year awards, regional project outcomes, and renewal rates	Granting agencies; philanthropy	Use IPY to highlight successful long-term educational funding models
Create synergistic training frameworks for Indigenous-Western knowledge integration	Surveys and evaluations showing cross-system research outcomes, co-authored publications, and community feedback	Research institutions; Indigenous partners	Use IPY to establish international co-learning networks
Convene Arctic funding alignment roundtables	Periodic reports on funder meetings and coordination outcomes; publication of aligned priority maps	IASC; Arctic Council; national research agencies	Build priority-aligned funding timelines into IPY program design
Map funding to ICARP IV priorities	Biennial public mapping of funding portfolios against ICARP IV priorities	Granting agencies; strategic committees	Ensure IPY bidding documents reference ICARP IV priority alignment
Use "Produced under ICARP IV process" citation	Require encapsulation statement in all relevant publications and products, and track citations and mentions via DOI monitoring	Authors; publishers; tracking services	Encourage IPY outputs to carry forward ICARP IV attribution

To ensure ICARP IV's outcomes remain visible and impactful over the next decade, we recommend integrating tracking strategies that span reporting, citation, capacity development, and funding alignment. Specific measures include:

- Annual and biennial reporting for youth councils, Arctic education and training programs, and funding initiatives to build a longitudinal dataset.
- Institutionalizing ICARP IV attribution through citation language—"Produced under ICARP IV process"—in curricula, publications, and publicly funded materials.

- Embedding youth and Indigenous leadership into the IPY 2032-33 planning by establishing governance roles, showcasing successful projects, and highlighting co-developed practices.
- Aligning funding portfolios and tenure criteria with ICARP IV priorities to ensure continuity and reinforcement of Arctic research goals.

By adopting these strategies, ICARP IV can set a strong foundation for the upcoming International Polar Year, linking past achievements with future ambitions in a coherent, measurable, and inclusive framework.

6. Elevating the role of education and outreach in Arctic research

This chapter makes the case for elevating the profile, investment, and recognition of education and outreach as core pillars of Arctic research.

Polar education, outreach, and communication (EOC) are not secondary to Arctic research but essential infrastructure for building an ethical, inclusive, and community-responsive knowledge ecosystem. Sustained by a global Community of Practice (COP) that emerged from the International Polar Year 2007–2008, EOC connects teachers, researchers, Indigenous Knowledge holders, youth, journalists, tour leaders, and others in a dynamic “living laboratory” of science–society exchange.

EOC occurs far beyond the Arctic itself, linking distant communities to polar change, and combines scientific expertise with local knowledge, land-based learning, and community practice. These approaches often underpin cultural continuity and survival, yet remain undervalued in many Arctic research institutions. Without recognition or resources, vital education and knowledge-sharing practices risk remaining hidden and unsupported.

RPT6 reframes EOC as a *pillar* of Arctic research, recognising:

- Methods and practices emerge from necessity and lived experience, not policy.
- Indigenous Knowledge is rooted in communities and must be braided into research.
- Co-developed education and outreach bridge communities and science, creating new collaborations and transformations.



Key Needs

1. **Institutional Recognition** – Education, outreach, and Indigenous Knowledge contributions should be valued on par with publications and grants.
2. **Sustained Investment** – Dedicated funding, tools, and infrastructure must support educators, communities, and researchers.
3. **Framework for Coordination** – Shared systems for defining, evaluating, and coordinating EOC across the Arctic research landscape.
4. **Integration of Indigenous Knowledge** – Mechanisms to embed languages, methodologies, and land-based learning in education and engagement.
5. **Capacity Building** – Training for researchers, educators, and community partners in co-production, cross-cultural communication, and engagement design.

Priorities for Action

- **Reframe EOC as essential** to Arctic research design, implementation, and impact assessment.
- **Strengthen the COP** (e.g. PEI, APECS, SciIQ) to foster mentorship and collaboration across regions.
- **Advance community science**, moving from extractive models to participatory approaches led by Indigenous and local partners.
- **Invest in learning ecosystems**, supporting lifelong, life-wide learning in Arctic and Indigenous communities.
- **Bridge gaps** between theory, practice, and policy to improve EOC effectiveness.

Challenges and Opportunities

Barriers persist, including colonial legacies, lack of academic recognition, geographic imbalances, political constraints, and language barriers. Yet, EOC’s flexibility and responsiveness allow innovation and trust-building at the science–society interface.

Positioned as connective tissue linking science, society, and sustainability, polar EOC has the potential to transform Arctic research. Elevating it from “optional” to “essential” through recognition, resourcing, and integration would strengthen resilience, support Indigenous Knowledge systems, and ensure Arctic science achieves greater social and cultural impact.



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Appendix: About RPT 6

1.1. Approaches / Methods used to complete the RPT 6 tasks

RPT 6 adopted a collaborative, inclusive, and iterative approach to identify research priorities, needs, and implementation pathways related to education, outreach, and capacity-building in the Arctic.

The RPT6 Team (approximately 25 in person and online) had its first comprehensive meeting during ASSW2024 at Edinburgh and went through a 2-day discussion over the following areas to bring members on the same page with respect to *Phase 1: Preparing for ICARP IV* and *Phase 2: Seeking Community Input*. These were done, keeping in perspective - *The IPY 2032-33 Timeline* and sharing past *ICARP Reports*.

They outlined the tasks that were required of the RPT primarily with a focus for *Phase 3: Defining research priorities*

- Reviewing and analyzing community input
- Defining knowledge gaps and research priorities for the topic area
- Recommendations to address the gaps and priorities
- Decide on a Consultation on preliminary results of each RPT during the ICARP IV Summit / ASSW 2025 and online & then finalize the result

It was a mix of Open meetings (Inputs and discussion) and Closed meetings (Safe spaces, inputs and discussion) based on the initial documentation/title: *Preparing present and future generations through Education, Outreach, Communication, Capacity Building, and Networking*. It was looked at through the following lens:

- What do you think are the “knowledge gaps” in this field?
- What do you suggest as research priorities
- Who we should be talking with that might not be on our radar?
- Are there resources/reports we should be aware of?

Eventually, the focus was brought to: *Education and Knowledge-Sharing In and About the Arctic: Research and Practice*.

Key methods included:

- *Community-grounded engagement*: Many RPT 6 members brought experience in participatory research, Indigenous and intercultural education, and youth programming. These perspectives shaped inclusive dialogue and emphasized co-creation and reciprocity. Some of the events included *Connecting Communities* as part of Polar Educators International's initiatives. Community input was continued to be sought through surveys, outreach done via webinars in partnership with EPB and feedback collected from participants.
- *Literature and program review*: RPT 6 considered legacy outputs from the International Polar Year (2007-08), including the IPY 2012 *From Knowledge to Action* and 2010 Oslo Science Conferences, the PolarEDUCATORS and PolarTEACHERS workshops, the APECS network, and numerous Arctic Council initiatives related to education and sustainable development.
- *Expert elicitation*: Inputs were gathered from diverse contributors—educators, youth leaders, Indigenous Knowledge Holders, researchers, and policy professionals—with geographic representation from across the Arctic and beyond.
- *Cross-sectoral framing*: The team considered the intersections between Arctic science, educational practice, public policy, and community development, avoiding siloed thinking and instead focusing on systems-level transformation.
- *Consensus-based prioritization*: After identifying a broad array of potential focus areas, RPT 6 used discussion and iterative refinement to select the most urgent and actionable needs and priorities aligned with the ICARP IV framework.

Reviewing and analyzing community input in the RPT work included but not limited to:

- Submitted community input from the ICARP IV engagement phase relevant for the RPT
- Final reports from the ICARP IV endorsed projects
- ICARP IV Survey results
- Resources submitted via the ICARP IV website for their topic areas
- Already existing national and regional Arctic science plans. A strong emphasis should be placed on comparing them from an international perspective and focus.
- Other relevant documents collected by the team.

The above served as input for Phase 4: Consulting on Priorities (ICARP IV Conference/ ASSW 2025), with focus on finalizing the report through a closed discussion and interaction/exchange that happened during the townhall at ASSW 2025 and through continued events and discussions. Some of the events as part of / alongside ASSW 2025 which served as opportunities to seek inputs and hold discussions:

- *Polar Bridges: Closing the Gap between Polar Science, Research, Indigenous Knowledge, and Polar Education* - biennial conference by Polar Educators International
- *APECS Early Career World Summit*
- *Education for a Sustainable, Inclusive North in the 21st Century* - Panel discussion on Education and Sustainability

The finalization of the research priorities would result in Phase 5: Initiating Implementation.

1.2. Overlaps and Synergies with other RPTs

Given its cross-disciplinary nature, RPT 6 found multiple points of convergence with other RPTs:

- *With RPTs on Indigenous Knowledge and Governance:* There is a strong overlap in the emphasis on equity, co-design, and community empowerment, particularly in co-producing research and learning environments that reflect Indigenous languages, knowledge systems, and values.
- *With RPTs focused on sustainability, resilience, and health:* RPT 6 shares the goal of strengthening community well-being, with a focus on the social dimensions of Arctic change, including how education can contribute to resilience, food security, youth engagement, and local capacity.

- *With RPTs on data management and knowledge infrastructure:* Education and outreach are fundamental to building human capacity to access, use, and benefit from data. Synergies exist around creating accessible, multilingual knowledge platforms and expanding data literacy.
- *With Early Career Researcher (ECR) and capacity development networks:* RPT 6 aligns with efforts to empower emerging scholars and practitioners, particularly in Arctic communities, with training opportunities, mentorship pathways, and recognition systems that foster leadership in both science and society.

These overlaps highlight the integrative role of education and outreach across the entire ICARP IV landscape/ ecosystem, reinforcing RPT 6's relevance as both a thematic area and a connecting thread.

1.3. RPT 6 Membership

The RPT 6 was co-chaired by Inga Beck and Diane Hirshberg. Additionally, 18 members from around the globe, representing different organizations made up the RPT 6 team.

Name	Affiliation	Country
Co-Chairs		
Inga Beck	LMU Munich	Germany
Diane Hirshberg	University of Alaska Anchorage / University of the Arctic	United States
Secretary		
Janet Warburton	Arctic Research Consortium	United States
Main Contributing Authors		
Jessica Aquino	Hólar University	Iceland
Mariasilvia Giamberini	National Research Council of Italy	Italy
Christiane Hübner	SIOS Knowledge Centre (Svalbard Integrated Arctic Earth Observing System)	Norway
Timothy Straka	Polar Knowledge Canada	Canada
Ramcharan Vijayaraghavan	None	India
Sophie Weeks	Scott Polar Research Institute, Polar Educators International	United Kingdom
Members contributing important input during meetings		
Kirk Anderson	University of the Arctic	Canada
Toby Anungazuk Jr	Golovin resident	United States
Mathew Kuttivadakkethil Avarachen	Norwegian University of Science and Technology	Norway
Maria Pia Casarini	Polar Educators International	Italy / United Kingdom
Charleen "Daazhrai" Fisher	University of Alaska Fairbanks	USA
Barbara Olga Hild	University of Iceland	Iceland
Pigga Keskitalo	University of Lapland	Finland
Stacey Lucason	Kawerak, Inc. (Yup'ik person, tribal member)	United States
Shannon Mcallister	University of Calgary	Canada
Alison Perrin	Yukon University	Canada
Neelu Singh	Norsk Polarinstitutt	Norway
Betty Trummel	Polar Educators International	United States



**ICARP IV Research Priority Team (RPT) 6. Final Report:
Education and Knowledge-Sharing In and About the Arctic:
Research and Practice**

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