



ARTICLE

Arctic art education in collaboration – creating dialogues for learning

Annamari Manninen¹, annamari.manninen@ulapland.fi

 <https://orcid.org/0000-0002-0263-4133>

Karin Stoll², karin.stoll@nord.no

 <https://orcid.org/0000-0003-1209-5177>

Wenche Sørmo², wenche.sormo@nord.no

Mette Gårdvik², mette.gardvik@nord.no

 <https://orcid.org/0000-0002-5151-3039>

¹University of Lapland, Finland; ²Nord universitet, Norway

DOI Number: <https://doi.org/10.26203/mr27-gf89>

Copyright: © 2025 Manninen *et al.*

To cite this article: Manninen *et al.*, (2025). Arctic art education in collaboration – creating dialogues for learning. *Education in the North*, 32(3) pp.287-316.



This is an open-access article distributed under the terms of the Creative Commons Attribution-Non-commercial License (<https://creativecommons.org/licenses/by-nc/4.0/>), which permits non-commercial use, distribution, and reproduction in any medium, provided the original author and source are credited.

Arctic art education in collaboration – creating dialogues for learning

Annamari Manninen¹, annamari.manninen@ulapland.fi

Karin Stoll², karin.stoll@nord.no

Wenche Sørmo², wenche.sormo@nord.no

Mette Gårdvik², mette.gardvik@nord.no

¹ University of Lapland, Finland; ² Nord universitet, Norway

Abstract

This article presents a developing process of a shared hybrid university course which aims at encouraging dialogue between Arctic communities, children and youth, teacher students, professors and local actors from cultural and educational fields. The Arctic partner universities sought to integrate contemporary art practices with Indigenous and regional knowledge systems, enabling the examination of sustainability challenges through the perspectives of Arctic communities and environments. Grounded in local contexts, Arctic Art Education (AAE) is ecoculturally sensitive and transcends borders between countries and universities by situating the project within broader discourses on decolonisation, sustainability, land-based education, and transdisciplinary approaches.

This article focuses on the data that consists of the university students' reflections on the special hybrid course connecting online and onsite learning and collaboration between universities and an Arctic community. The results of the qualitative analysis define the elements of the Arctic Art Education learned in the Nomadic Hub course. The conclusions emphasise how art-based action research develops the multidimensional structure of the shared course. Shared courses facilitate boundary-crossing knowledge production, meaningful encounters in remote interactions, and situational and transformative learning. Rooted in ecocultural contexts, learning in AAE emphasises relational, embodied, and ethical approaches to sustainability and teacher education in the North.

Keywords: Arctic art education, art-based action research, teacher education, transdisciplinary teaching, transformative learning

Introduction

The Arctic is a geographical space and a unique ecocultural and sociopolitical landscape shaped by extreme environmental conditions and contemporary pressures of globalisation. In recent decades, this region has experienced rapid and uneven transformations due to climate change, industrialisation, and the expanding extraction of natural resources (Ford, Pearce, Canosa and Harper, 2021). These developments have led to profound disruptions in Arctic communities' ways of life, worldviews, and socioecological systems. In response, there is an urgent need to develop educational frameworks that are responsive, relational, and rooted in the lived realities of the North. Among such frameworks is the emergent field of *New Genre Arctic Art Education (AAE)* – a contemporary, transdisciplinary, and ecoculturally grounded approach to art education that centres the Arctic as context and method (Jokela and Hiltunen, 2024).

This evolving pedagogical paradigm acknowledges that conventional models of art education, often developed in Western and urban academic contexts, are insufficient for addressing the complex entanglements of land, identity, and sustainability in the Arctic. Instead, AAE builds on recognising art as a transformative practice that enables emotional, cultural, and political expression, strengthens community cohesion, and facilitates intergenerational and intercultural dialogue (Jokela, Huhmarniemi, Beer and Soloviova, 2021; Jokela and Huhmarniemi, 2022, 2021). Art in this context is not confined to aesthetic production, but rather a method for knowledge generation, decolonisation (Korsström-Magga, 2025), psychological resilience (Berliner and de Casas, 2024), and reconnection. It enables communities to make sense of environmental loss, cultural change, and shifting power relations while imagining alternative futures grounded in art-based environmental education, cultural sustainability and place (Härkönen, 2021; Jokela and Hiltunen, 2024).

The Arctic is marked by logistical and infrastructural challenges: long distances between communities, limited resource access, and harsh weather conditions. These factors have historically impeded cross-regional collaboration and limited opportunities for culturally relevant education. However, the increasing digitalisation of higher education and a growing commitment to community engagement and decolonial pedagogy have opened new possibilities for networked learning across the Arctic. Online and hybrid learning have become a permanent part of learning settings in adult and higher education (Hwang, 2018). Within this shifting landscape, the *Nomadic Hub of New Genre Arctic Art Education (AAE)* was conceived as an inter-university, mobile, and hybrid learning model that connects universities, educators, students, and community members across the circumpolar North. While most of the teacher education courses are placed on campus or online and inside one study program, the terms hybrid and blended refer to the mixing of two or more different elements. Hybrid teaching, often defined as blended learning, concerns courses offering online and on-site participation simultaneously or in subsequent parts (Hrastinski, 2019). The nomadic hub of AAE challenged the teacher students to collaborate across the universities and, as an exception to normal teaching practice in local schools, to travel to another Arctic country to organise activities with the community.

Situational learning may occur when social media platforms enable the sharing of views and expertise or even to collaborate on a connecting project (Lave and Wenger, 1991; Niinistö, 2019; Manninen,

2021). The AAE course was piloting a shared hybrid learning course in the University of the Arctic (UArctic) network of universities to promote situational learning in art education, focusing on the Arctic areas' ecocultural contexts (Arora-Jonsson, 2016; Stephen, 2018). These partnerships allow for a dynamic and participatory educational approach that bridges academic research from different disciplines with lived knowledge and artistic practices grounded in local communities.

The Arctic Sustainable Arts and Design (ASAD) Thematic Network within the UArctic provided the broader academic framework for this collaboration by promoting dialogue and knowledge exchange in art, design, and visual culture education across the circumpolar North. Notably, the network emphasises integrating Indigenous and traditional knowledge systems with contemporary academic research and creative practices (Härkönen, 2021; Huhmarniemi, Jokela and Hiltunen, 2021). AAE Nomadic hub is envisioned as a flexible, mobile structure akin to a migrating camp, adapting to different cultural and ecological contexts while maintaining core sustainability, inclusion, and co-creation principles. Following Braidotti's (1994, 2011) notion of '**nomadic epistemologies**', we view knowledge in art education as fluid and relational rather than fixed. In the Arctic, this means that artistic practices draw on movements across landscapes, traditions, and communities, where knowledge emerges through shifting encounters between people, materials, and environments. Such a perspective highlights art education as a dynamic process of becoming, rooted in mobility and situated experience. Drawing on Barad's (2007) notion of intra-action, we approach art education in the Arctic as an entangled practice where learning does not occur through separate entities acting upon each other, but through mutual constitution. In this view, students, communities, materials, and environments are not pre-existing, independent actors; rather, they emerge through their relations. Art education, therefore, becomes a process where human and non-human elements — such as cultural traditions, local ecologies, seasonal changes, and artistic media — are co-constitutive. This perspective allows us to understand learning as a situated, relational practice, deeply embedded in the specificities of Arctic places and lifeways.

This article critically reflects on the development and implementation of the AAE Nomadic Hub model. We examine how the initiative has facilitated collaboration among universities, students, and Arctic communities, and explore its contributions to teacher education, art-based research, and community engagement. The research focuses on what kind of art-based and multidisciplinary learning is encountered through students' collaboration and intra-action (Barad, 2007) with Northern communities and stakeholders. Our research question is: *What are the main elements of Arctic Art Education based on the students' experiences and reflections on the Nomadic Hub?*

Theoretical grounding of the AAE nomadic hub

Ecoculture, place-based and land-based learning in northern communities

AAE is pedagogically founded in relational, embodied, and situated ways of knowing. In the Arctic, material, culture and environment are deeply connected; ecoculture emerges as the key concept in this context, encapsulating the dynamic interrelation of ecological and cultural processes (Ingold and Kurttila, 2000). Barad's (2007) theory of intra-action reframes ecoculture as ecological and cultural and not as distinct spheres to be integrated, but as mutually constitutive forces. This theoretical move is

significant within posthumanist and new materialist perspectives, where boundaries between human and non-human actors, such as water, soil, animals, and plants, are porous and interactive (Jokela and Hiltunen, 2024). Ecoculture thus opens the possibility of considering art education not merely as a human activity but as entangled practices where matter, materiality, and landscape have agency (Härkönen, Huhmarniemi and Jokela, 2018).

Within this understanding of ecoculture, place-based learning refers to educational approaches that situate learning within a specific locality's social, cultural, environmental, and political dimensions. Rooted in the work of Gruenewald (2003), Smith and Sobel (2010), and Orr (2013), place-based education emphasises experiential, interdisciplinary learning tied to real-world contexts. It nurtures a sense of belonging, civic responsibility, and ecological literacy by encouraging learners to engage with local challenges, histories, and knowledge systems. Using local places supports cultural identity development and a sense of belonging. Studies on outdoor education and virtual online spaces describe how learning environments beyond the classroom foster new modes of interaction and communication (Lave and Wenger, 1991, 2003; Fägerstam and Blom, 2013; Rickinson et al., 2004; Waite, 2011).

Land-based learning, related to place-based pedagogy, is conceptually distinct in its grounding in Indigenous worldviews and epistemologies. It represents more than learning in or about a place; it is learning from and with the land as a living entity and active participant. 'Land' encompasses spiritual, ecological, and ancestral dimensions—plants, animals, spirits, geological features, and elements like air and water (Kress and Horn-Miller, 2023; McDonald, 2023; Wildcat, McDonald, Irlbacher-Fox and Coulthard, 2014). In this context, land is not a resource to be exploited but a relative to be respected. Land-based education, therefore, can be seen as an ontological shift. It embodies worldviews in which learning is relational, spiritual, ethical, and grounded in intergenerational continuity.

Land-based learning in Nordic regions is inseparable from the cultures, cosmologies, and survival practices of Indigenous people. It is a form of resistance to Western-colonial education that has historically marginalised or erased Indigenous voices (David-Chavez et al., 2020). Deeply rooted in Indigenous knowledge systems, such as Sámi *dávvirat* (traditional ecological knowledge), knowledge is passed on through oral transmission, storytelling, observation, and daily practices such as hunting, gathering, and fishing (Guttorm, 2018). Importantly, land-based education is not merely a pedagogical tool but a decolonial practice. It calls for a radical transformation in understanding knowledge, education, and responsibility—one attuned to justice, interdependence, and reciprocity. According to Trott, Even and Frame (2020), such pedagogies are particularly valuable in sustainability education, where students often feel distanced from the complexity and scale of global environmental issues. Place- and land-based approaches make sustainability concrete and emotionally resonant by anchoring it in specific places' material, cultural, and historical layers. Spínola (2021) reinforces this by introducing 'environmental educating communities', environments where sustainability is not taught as a subject but lived as a shared value across institutions, families, and everyday practices.

Art-science integrated education

Despite growing recognition of the need for place-based, emotionally resonant, and interdisciplinary pedagogies (Ojala, 2017; Stoll, Sørmo and Gårdvik, 2022), integrating artistic and scientific knowledge is important in AAE. Cultural and ecological dimensions are often taught in parallel rather than as interconnected systems, leading to fragmented understandings (Barad, 2007). Socio- and ecoculturally sensitive education must favour participatory, imaginative inquiry over factual instruction. In traditional Western teaching methods, learners are more often presented with “what is” than empowered to imagine “what if”. To fully engage with sustainability challenges, we must cultivate educational methods that allow for critical reflection, creative exploration, and action through synergies of scientific insights and artistic expressions (Trott et al., 2020).

Ecocultural sustainability underscores the importance of linking local communities to their natural and cultural environments (Jokela and Huhmarniemi, 2021). A pedagogical shift where the arts and sciences are not positioned as opposites, but mutually reinforcing lenses, allows learners to understand and act in the world. Projects concerning local ecosystems, cultural identity and heritage require diverse forms of knowledge, particularly from science and the arts. Science is often associated with objectivity and abstraction, while art is associated with subjectivity and emotion; however, both disciplines engage with empirical realities through observation, experimentation, and interpretation (Stoll et al., 2022).

Scientific knowledge is fundamental for understanding environmental systems, yet when the goal is to foster deep relational awareness and action, it must be complemented by artistic approaches. Education that aims at connecting to the world does so through art, which unites cognitive and aesthetic-affective experience (Kaufmann, Rajkovic and Sommer, 2023; van Böckel, 2009). This necessitates a pedagogical alignment in which science and art education move toward a shared goal of nurturing inquiry, creativity, and responsibility (Østergaard, 2013).

Arts education develops *know-how—practical, intuitive, and embodied knowledge*. It encourages emotional engagement, sensory awareness and imaginative speculation. For example, drawing is a process for communicating, visualising, reflecting, explaining, describing, and observing (Frisch, 2011). Visual expression contributes to communication and learning across all subjects (Cromley, Du and Dane, 2019; Skjelbred, 2021). Eisner (2003) emphasises the expressive outcomes of artistic activities, as they provide students with opportunities to communicate, explore and construct meaning. Drawing has played an important role in observing, describing, and classifying nature in the sciences. In science education, visual presentations help students understand and communicate concepts and subject content (Fan, 2015; Wu and Rau, 2019).

In contrast to the abstract reasoning of science, art opens space for learners to explore alternative ways of knowing and being. By merging these approaches, students can investigate sustainability challenges through data and analysis, meaning-making, and emotional resonance (Trott et al., 2020). This integration expands inquiry from observation to participation, from facts to values, and from explanation to transformation and aligns with the principles of ‘*transformative learning*’, which involves critical self-reflection and a re-examination of assumptions (Boström, Ojala and Öhman, 2024; Mezirow, 2009).

When learners engage in artistic and scientific inquiry together, they are more likely to experience shifts in worldview that lead to sustainable action. In this context, artworks function as representations and provocations, stimulating ethical reflection and cultural critique. Artistic methods allow learners to speculate about possible futures, pose transformative questions, and develop cultural literacy alongside ecological understanding. Trott et al. (2020, p.1067) claim that:

“Historically, the arts have been mobilized for social change — a way to resist and rewrite dominant narratives, spark critical dialogue around societal issues, and open the door to potential transformation.”

These approaches are directly aligned with the cultural dimension of sustainability, which emphasises social cohesion, local identity, and collaborative action (Illeris, 2017; Jónsdóttir, 2017). Educators must enable learners to practice multidisciplinary competencies by engaging with scientific inquiry and creative processes (Coutts, 2013; Eisner, 2002). Community and eco-art practices are effective platforms for this integration, providing tangible, site-specific learning opportunities where students can investigate local materials, landscapes and narratives (Gårdvik, 2011; van Boeckel, 2014).

Integrating science and art also supports *multidisciplinary deep learning*, a process linking conceptual understanding with practical experience across domains. Lawrence (1925/1985) and Read (1966) argue that art is a vital bridge to academic knowledge and human experience. Aesthetic learning processes, defined by Fredriksen (2013) as sensory, exploratory, and reflective, can occur across disciplines and are foundational to embodied, action-based knowledge. As Gulliksen (2017) referencing Klafki (2001) asserts, making is a personal and communal act that allows learners to co-construct meaning using a multimodal vocabulary. These practices cultivate the holistic development of individuals into responsible, culturally aware human beings. Deep learning connects thinking, emotion, and bodily engagement in social and spatial contexts (Merleau-Ponty, 1977; Anttila, 2013). Dahl and Østern (2019) argue that in-depth learning activates the body, evokes emotion, and inspires learners to *want* to learn, which is also the goal of transformative education.

Embodied, affective, and social art pedagogies

Social art practice and community art are vital pedagogical tools that foster agency, dialogue, and critical engagement, encouraging learners to confront dominant social systems and imagine sustainable alternatives (Permar, 2019; Hiltunen, 2008; Austin, 2008). Rooted in participatory and collaborative processes, these approaches emphasise creative making as a site for relational and dialogical exchange, prioritising process over product (Kester, 2005; Frasz and Sidford, 2017; Leeson, 2018; Helguera, 2011). Their transdisciplinary nature supports social transformation by creating inclusive spaces where diverse perspectives can be shared and validated (Manninen, 2021). Key factors such as place, issue, and community involvement resonate strongly with place-based learning and transformative pedagogies (Kester, 2005, 2014).

Aligned with this, embodied and affective learning approaches integrate sensory, emotional, and physical experiences into educational practice, challenging Cartesian dualisms that separate cognition from emotion and body (Stoll et al., 2022). These approaches deepen ecological literacy by engaging

learners holistically, through doing, sensing and feeling. When linked to real-world issues, arts-based practices provide critical affective spaces for navigating emotional and ethical complexities (Stoll et al., 2022). Affective learning enhances learners' moral imagination, emotional resilience, and relational accountability, equipping them with the competence to respond meaningfully to sustainability challenges.

Ecocultural resilience describes a society's or culture's ability to maintain its traditions and ecological methods despite environmental and social changes, often through sustainable and locally adapted solutions (Barthel et al., 2013; Rylander and Lundstedt, 2024). Art and craft are practised globally but are also deeply local, as social, cultural, economic, and ecological contexts shape and define each community and its individuals through craft (Black and Burish, 2020). Spínola (2021) reinforces this view by 'educating communities', learning environments embedded in everyday life that integrate environmental knowledge with affective, cultural, and ethical sensibilities. These socially situated practices support the development of environmental culture through continuous, embodied engagement across school, home, generations and institutional contexts. A shift from fragmented pedagogical interventions toward these community-based models is essential for cultivating sustainable worldviews and practices in the Arctic.

AAE's theoretical framework advocates a holistic, transformative pedagogy centred on place, embodiment, emotion, and creative expression. It draws on land- and place-based learning, art-science methods, and social art practices to propose educational approaches that are participatory, affective, and rooted in lived experience. Rather than mere knowledge transmission, such pedagogies foster the capacity to imagine and enact sustainable futures in the Arctic region.

Methodology

We are using art-based action research (ABAR) (Jokela, 2019; Jokela and Huhmarniemi, 2018) strategy to develop the Nomadic hub of AAE. Action research aims to develop practices by intervening in the existing structures with new approaches planned in collaboration with the participants and stakeholders (Tomal, 2010). The ABAR approach focuses especially on combining artistic practices and art education with regional development and community empowerment (Jokela, 2019; Jokela and Huhmarniemi, 2018). The AAE course challenged the universities' cooperation for a shared hybrid course combining online and fieldwork. It introduced Arctic communities for a visiting Art education event with a large spectrum of actors (Figure 1).

In action research, the researchers are actively developing practices in collaboration with the university students and staff, participants and the community. We had multiple roles as coordinators, researchers, teachers, participating in organising, planning, mentoring and teaching to take part in art activities. The university students, lecturers, researchers, collaborators and pupils were informed about the research and signed a consent form translated into their native languages. Several cycles of planning, action, data collection, reflection, and replanning are essential in the development work (Lewin, 1946; Jokela and Huhmarniemi, 2018). The AAE development was done in two cycles of courses, with the second based on the reflection of the first (Fig.1). Action research strategy studies the theory in relation to

practices and the analysis of actions and reflections form a new theory (Dewey, 1963; Schön, 1983). In this article, we focus on describing the courses and examining how students from different Arctic regions and disciplines experienced working together and how it relates to the theoretical framework of AAE.

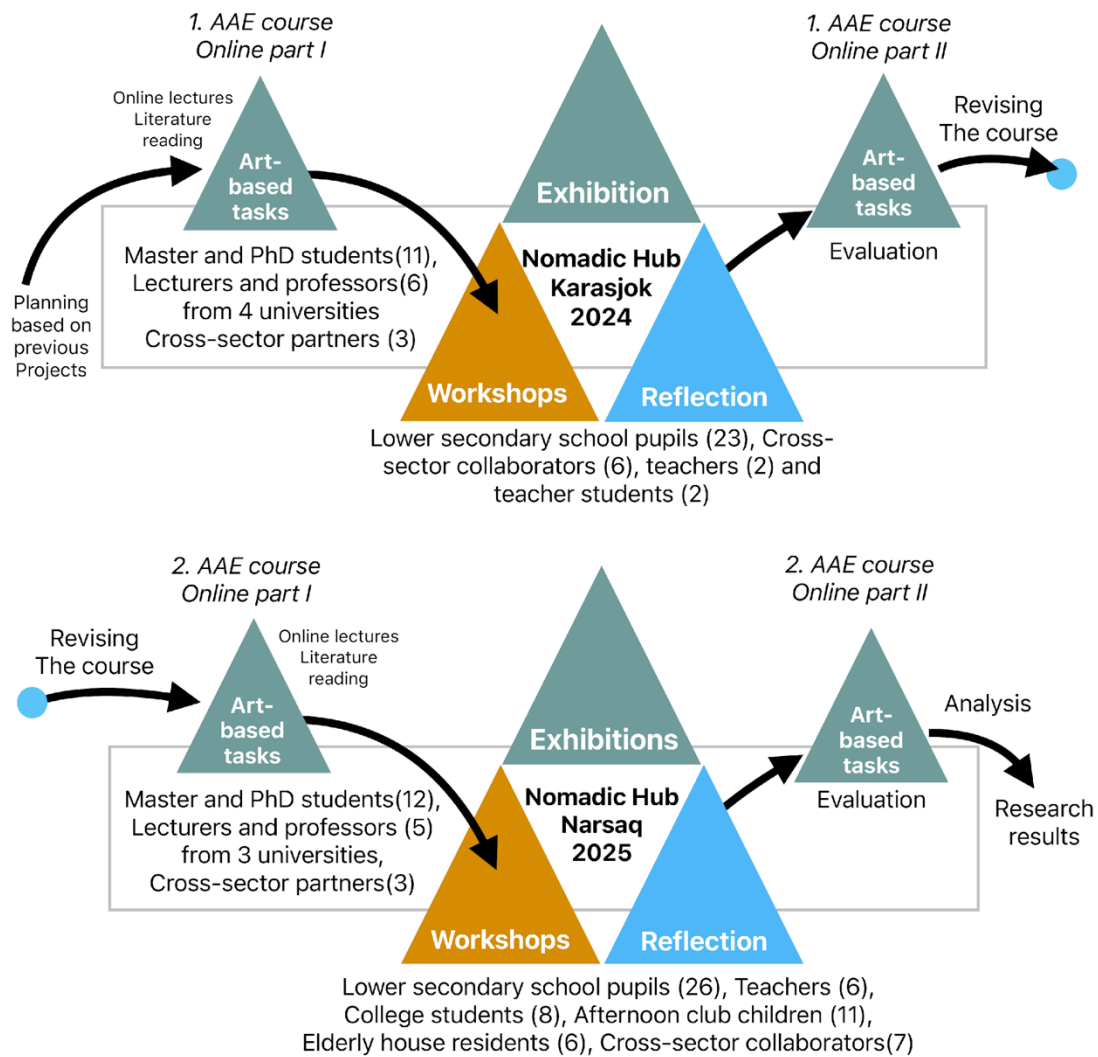


Figure 1: The process of developing the AAE course in two cycles, 2024–2025, marking the activities, participants and their amounts in different phases. The reflections on the activities were done collaboratively in the exhibitions at the end of the field week with all the participants and later elaborated further and from the whole course scope with the university students, lecturers and cross-sector partners (Diagram: Annamari Manninen, 2025)

A qualitative research approach, grounded in a social constructivist paradigm, was employed to gain insight into students' reflections following their participation in AAE. Social constructivism emphasises that knowledge is created through interaction, dialogue, and shared cultural practices (Vygotsky, 1978; Creswell and Poth, 2018), making it particularly relevant for studying collective and situated learning processes. The reflection of the course and activities was done in discussion at the location with the stakeholders, and for the second time afterwards online. The primary data consisted of collective online boards (n = 2, Fig.2) that were filled in dialogue with the group and personal written reports (n = 8) after the fieldwork. These were complemented by participatory observation and systematic documentation of the activities (Fig.3). Furthermore, the artworks produced were treated as essential research material,

in line with art-based research approaches where artistic outcomes serve both as data and as analytic entry points (Jokela and Huhmarniemi, 2018; Leavy, 2017).



Figure 2: The collective online whiteboard with anonymous reflections of the participants at the end of the first course (Screenshot, Annamari Manninen, 2024)



Figure 3: Documentary photo from one of the workshops in Narsaq with children at the local after-school club using traditional materials like reindeer leather braiding bracelets, in the same way as the South-Greenlandic sledge dog's whip (Photo: Annamari Manninen, 2025)

It is also part of the action research strategy to include all participants and stakeholders in the reflection. The documents analysed are based on the collaborative reflections and evaluation of the action research, but produced by the teacher students, professors and cross-sector partners. However, we need to remember that students' written reflections were also a task in the course and that this could have perhaps influenced the contents. In this article, we focus only on the perspective of developing AAE as university pedagogy and university students' perspectives on AAE, excluding a closer look at the participating pupils, children and youth and stakeholders.

We have used an inductive approach emphasising the study's notions, experiences and objects (Charmaz, 2006; Alverson and Sköldberg, 2008). The analysis involved continuous, open coding of the data material, naming and categorising activities and phenomena (Table 1). We used constant comparative analysis, and extraction of the data in ways that led to concepts, ideas and theories (axial and selective coding) as a consequence (Savin-Baden and Major, 2013). Notes written down in the student reflections' coding helped us find key concepts and gave us the keys to the theory. The authors discussed the main categories against observations from the completion of the AAE fieldwork.

The initial coding was closely linked to the raw data in that sentences or paragraphs were coded closely to the students' own words. Then, a selection was made based on the meaning of the initial codes, which were merged and modified into meaningful categories. The results present the main categories found in this data and conclude the outcomes and possibilities of the practices as aimed in action research (Tomal, 2010).

Table 1. Example of the construction of categories based on focused codes (Table: Wenche Sørmo, 2025)

Focused codes	Categories
<i>Interdisciplinarity</i> <i>Transformative learning</i> <i>Variation</i> <i>Holistic</i> <i>Art and science integrated</i> <i>Learning across institutions and cultures (school, museum, elderly home, youth club)</i>	Interdisciplinarity in subjects and across cultures and institutions
<i>Cultural sensitivity</i> <i>Pupils choose what to express artistically</i> <i>Importance of local stakeholders</i> <i>Sensitive and personal expressions</i>	Cultural sensitivity
<i>Communication</i> <i>Body language and gestures</i> <i>Youth can express themselves and reflect over their role in the local community.</i> <i>Students' curiosity on the Greenlandic language</i> <i>Collaboration in groups</i> <i>Better communication when teachers are present at workshops.</i> <i>Show a good example</i>	Linguistic and bodily communication
<i>Variation in artistic expressions (Art-exhibitions in local community)</i> <i>Youth can express themselves and reflect over their role in the local community (in making the film)</i> <i>Proud pupils</i>	Visual communication
<i>Experience from workshops; success criteria and challenges</i>	Practical implementations

Developing a shared university course

The idea of AAE was based on the collaboration between the University of the Arctic's thematic networks ASAD and Children of the Arctic, which aimed to develop art education based on Northern cultural, social, and ecological conditions. Nordplus Horizontal funding made the pilots of shared courses possible as the New Genre Arctic Art Education development project (2023–2025). However, the planning started in the previous project, New Genre Art Education in the Arctic (2022–2024), funded by UArctic and the Danish Agency for Science and Higher Education (Jokela, Manninen and Berliner, 2024). It initiated the collaboration and first experiments for a shared seminar. The activities were linked to experiments in the Sustainability Portraits -project (2023–2024) in the Nordic Arctic co-operation program of the Nordic Council of Ministers, Nordic Institute Greenland (Jokela, Berliner and Manninen, 2024). At the end, the pop-up exhibitions are part of a series of exhibitions in the Sustainability in the

Arctic project (2023–2025). The development work is also connected and will be continued in the Lessons of the Land project (2024–2026).

These projects involved collaborations with Umeå University (Sweden), the University of Lapland (Finland), Nord University (Norway), and Ilisimatusarfik (Kallaallit Nunaat, the University of Greenland). University students in primary teacher education, art and crafts teacher education, and psychology, art, and education doctoral students participated in the courses and projects. In addition, the collaboration with third-sector cultural and educational organisations made the AAE courses special, including experts from Sámi Contemporary Art Centre, the Greenlandic art collective Siunissaq, Cross Art Collective Piste ry, and the Norwegian Outdoor Recreation Board, which supports nature and outdoor education. These collaborations brought knowledge of the local circumstances and helped with contacts with the communities in the fieldwork locations.

The pilot courses were arranged in the spring terms of 2024 and 2025. We used evaluations from the first course to further develop the course to be held next year. In both cases, the course (Fig.4) started online with the theoretical background and presented the programs and approaches of the different participant universities. Introductory art-based exercises were also essential to get to know the other participants. The online part included a literature review task in small groups online. The teams of each country could also have face-to-face meetings of their own, especially when planning the workshops. Visual tasks were also used in the end to reflect on what was learned.

New Genre Arctic Art Education -course, 10 ECTS



Figure 4: Structure, timing and contents of the AAE courses. Online parts in the beginning and end, and on-site Fieldwork (Diagram: Annamari Manninen, 2025)

In the second year, the course was divided into two parts: Basis of AAE (5 ects), that included the online parts: introduction, theory and reflections, and Nomadic hub of AAE (5 ects), that consisted of the excursion to the location, visits to local museums, collaboration with the community, arranging the workshops and exhibition, and reporting the activities. We used open online platforms for sharing content across institutions (Fig.5). While the fieldwork included travelling and thus the project budget limited the number of participants, separating the online and on-site parts made it possible for other students to join the online course and have the basis of AAE with hearing experiences from the different fieldwork.



Figure 5: Online course platforms, such as Padlet (2024) and Google site (2025), for sharing course information, tasks, and products between participants from different universities (Screenshots: Annamari Manninen, 2025)

Ideally, the AAE course would be part of the curriculum in each network's universities. Now, the courses were established in the University of Lapland, and students from other universities were enrolled as visiting students for the credits.

In the first spring of 2024, participants gathered in Karasjok, Norway, for a field week at the Sámi Contemporary Art Centre, Sámi Dáiddaguovddáš. The fieldwork included getting to know the local community, visiting museums and public artworks with a local guide, arranging workshops for pupils and building an art exhibition of created outcomes in the Art Centre. One teacher participated with her class (7th grade) for the full two days of workshops and the exhibition opening (Fig.6). Encouraged by their example, another teacher with her class (8th-graders) joined the second day.



Figure 6: Collage of photos from Nomadic hub Karasjok River-workshops and tour on public artworks (Photos: Annamari Manninen, 2024)



Figure 7: Pupils performing on the river ice in Karasjok with their "River" paintings, spring 2024 (Photo: Annamari Manninen, 2025)

The workshops included a visit to the exhibition of Per Adde's paintings, collective painting with students of the University of Lapland, clay sculpting of the river creatures with the Umeå team and photography with Siunissaq and the Ilisimatusarfik team. There were also open workshops in the art centre organised by the doctoral students on activist embroidery, power cards drawing, and reindeer antlers carving (Fig.6). The workshop's theme, "River", was chosen by the school participants in advance. The art activities included a collective performance on the local river ice (Fig.7).

The collective reflections and discussion after the online course and the first Nomadic hub brought out themes important for the next development cycle: communication, cultural sensibility and giving voice to the local participants. These were considered in the next Nomadic hub, which was organised in Narsaq, Southern Greenland, Kallaallit Nunaat, at the beginning of April 2025. It brought together students, teachers, and researchers from Nord University, Norway, and the University of Lapland in collaboration with Ilisimatusarfik, Siunissaq Collective, Narsaq International Research Station (NIRS), Norwegian Arctic Circle Recreation Board, and Kujalleqin commune. The 'satellite' model suggested in reflection of the first pilot course was tested. The online course included a bigger group, and some students did the fieldwork in Utsjoki, Finland, as part of the Lessons of the Land project.

In Narsaq, all the upper grades from the seventh to the ninth grades participated in the three-day workshops. During the two weeks, the local environment and culture were explored by photographing, printing, investigating, and playing with snow and different handicraft techniques and materials (Figs 8 and 9). The inclusion of play and games that engaged in physical activities was also a suggestion after the evaluation of the first AAE, and that served as an important ice-breaking activity that improved the relationship between participants.



Figure 8: The Nomadic hub in Narsaq consisted of several workshops where the collaborative activities focused on exploring understandings of one's local environment and culture, while also enabling artistic processes and visual expressions across age groups and generations (Photos: Suvi Autio, Timo Jokela, Annamari Manninen, 2025)



Figure 9: Collage of photos from an Art and Science workshop where the snow was explored through making the snow molecule structure, snowflakes with paper cutting in the correct hexagon shape and tiny snowmen (Photos: Mette Gårdvik and Rutt Astri Olsen, 2025)

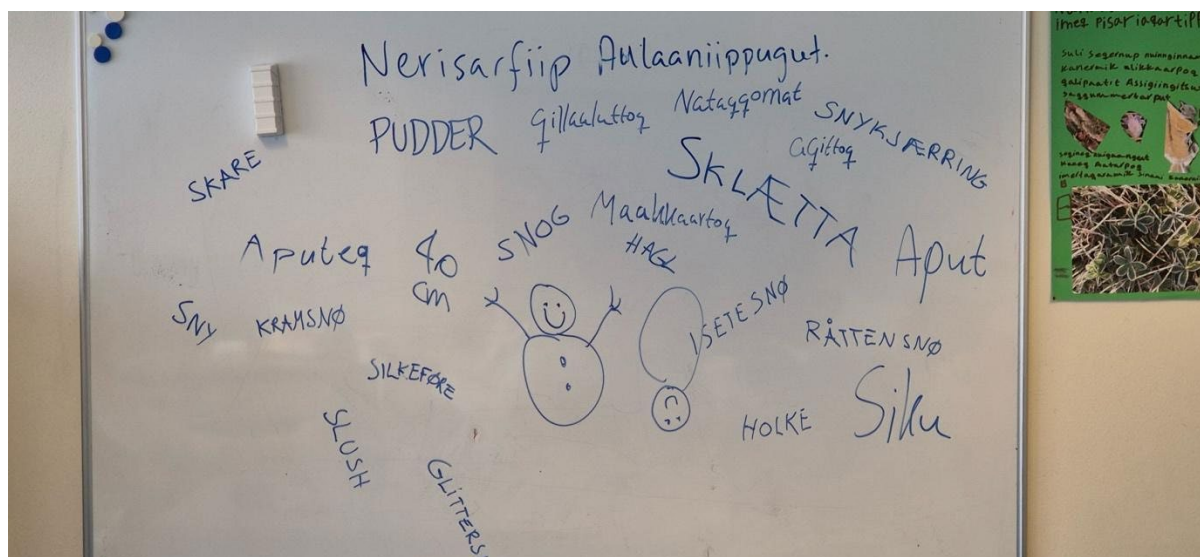


Figure 10: Words for different kinds of snow in Norwegian and Kalaallit written in the workshop (Photo: Karin Stoll, 2025)

The artworks produced in different workshops and groups were gathered into pop-up exhibitions and short film premieres in the school and the youth club. The pupils seemed to enjoy the uncommon school days. Playing with the keywords in different languages (Fig.10), working with concrete materials, games, physical plays, and visits out of the school building started the informal discussions on the local animals, environment, stories and way of living.

One of the suggestions from the first evaluation was to expand the scope of participants and the arts to music, drama, and theatre in the future and consider other forms of workshops, such as summer camps, art festivals, and open community events. In 2025, residents from the elderly centre, children in the afternoon club and youngsters from the free-time youth club were included as participants. The interdisciplinary collaboration was expanded to involve the local museum staff, culture coordinators, teachers, youth centre and retirement home staff. In addition, there were professionals of outdoor education from the Norwegian Outdoor Recreation Board and movement and drama pedagogy from Cross Art Collective Piste ry and the Sustra doctoral program researchers, who joined in organising a documentary short film production with students from Inusullivik college. Also, the whole community were invited to join the final exhibition in the youth club.

Results and discussion

In this article, we used art-based action research (ABAR) (Jokela, 2019; Jokela and Huhmarniemi, 2018) as a method to develop and evaluate the Nomadic hub of AAE. While describing the development of the AAE course, our research question focuses on the university students' notions of Arctic Art Education after collaboration and experiences in Nomadic Hub workshops and an online course.

While on-site learning can be seen as authentic and situational, online collaboration in communities of expertise may also offer authentic situations to build knowledge (Lave and Wenger, 1991; Niinistö, 2019; Manninen, 2021). The challenges in combining art and craft education with distance, online and web-based teaching challenge the materiality of making arts and crafts. Thus, it requires building

embodied knowledge and multisensory learning (Anttila, 2015). According to the students' feedback, AAE's online tools and communication require clear structure and guidance for the platforms and applications in use. In a multidisciplinary course, the visual assignments were unfamiliar to some, and the aims of art-based working needed clarification. Showing the examples of the previous Nomadic hub in the online course helped to grasp the concept and inspired ideas.

Online part gave theory; the workshops made it practical. (student quote)

The students' reflections on the fieldwork mainly had the same themes in the first and second cycles, divided into the following interconnected categories: cultural sensitivity, visual, bodily and lingual communication, transdisciplinary collaboration and practical implementations (Fig.11). The second cycle with fieldwork, the culturally and language-wise different Kalaallit Nunaat, expanded the Nomadic hub workshops to a broader range of participants and places. That brought new emphasis on communication with the local stakeholders and the ability to change the plans and improvise.

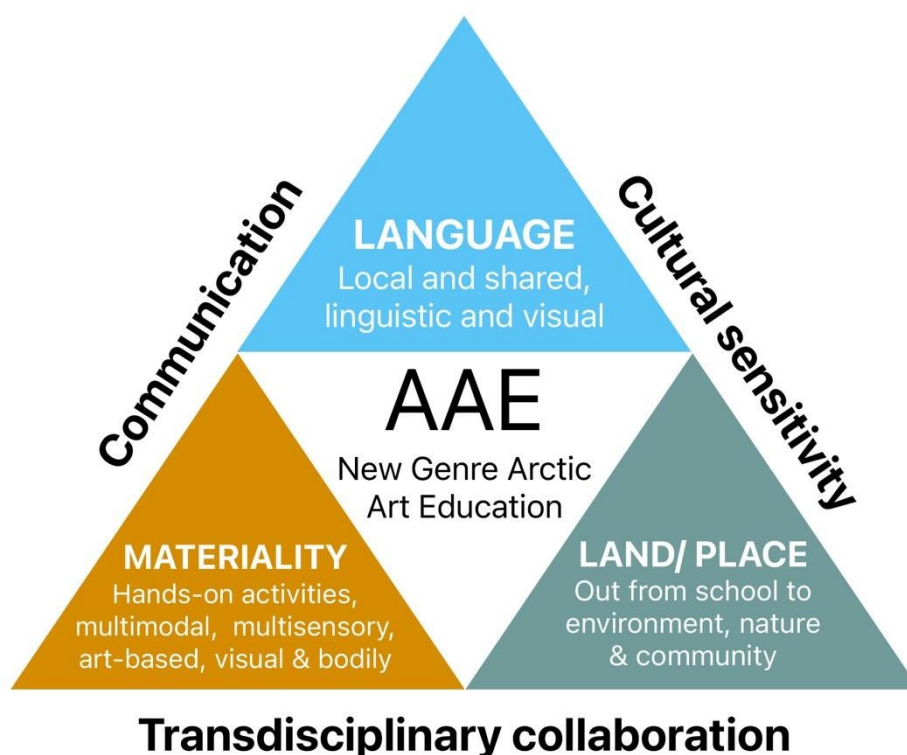


Figure 11: The analysis of the reflections emphasised the communication, cultural sensitivity and transdisciplinary collaboration across subjects, institutes and cultures as key elements of AAE. In the workshops, exhibitions and collaboration, these were accomplished by arranging the activities in local places and with the community outside the school building, paying attention to the use of the local language and including hands-on activities to communicate and explore the topic, also with visual, material and bodily ways (Diagram: Annamari Manninen, 2025)

The students' reflections concluded that it was important to base the AAE activities on transdisciplinary exploration of the topics connected to local places and the community. Going outdoors and looking at the local traditions and language is also aimed at a culturally sensitive approach. Working with art and science activities, including visual elements and production, play and movement, concrete materials and tools, helped the communication across languages and cultures. Material, culture and environment

are deeply connected in the Arctic, and ecoculture emerges as a key concept in this context (Ingold and Kurttila, 2000). Learning in this context is place-based and refers to educational approaches that situate learning within a specific locality's social, cultural, environmental, and political dimensions.

Collaboration and transdisciplinarity in subjects, across cultures and institutions

Teamwork, collaboration and interaction with people is the key. (student quote)

The transdisciplinary nature of AAE proved to be a successful factor in the course, according to the students' reflections. Including local knowledge of history, tradition and culture with different art-making techniques in sustainable materials, natural science knowledge, dance and play led to various relevant activities across generations. The involvement of local stakeholders eased the communication with the pupils, and the pupils could explain their local culture and community to us as foreigners. This aligns with *ecocultural sustainability*, where the link between local communities and their natural and cultural environments is important (Jokela and Huhmarniemi, 2021). In several workshops, the arts and sciences were not positioned as opposites. However, the hands-on activities helped pupils understand and express their knowledge visually, e.g., by building snow-crystal molecules with candy based on their knowledge about the chemistry of the water molecules (Fig.9).

Scientific knowledge is fundamental for understanding environmental systems but must be complemented by artistic approaches when the goal is to foster deep relational awareness and sustainability action (Stoll et al., 2022; Østergaard, 2013; Trott et al., 2020). Local stakeholders contributed to knowledge and stories about the local communities' history and myths that pupils included in their visual expressions, created using sustainable materials. The products were presented and discussed in the school and youth club exhibitions for pupils' families and inhabitants in the community. The pupil's cultural identity and cultural dimension of sustainability were strongly present in the activities where collaborative actions, local identity and social cohesion were important issues (Illeris, 2017; Jonsdottir, 2017). In this way, the AAE fieldwork addressed diverse forms of knowledge, which were transdisciplinary across cultures and institutions. Learning in authentic, place-based contexts enriched education through both cognitive, physical, and social engagement (Østergaard, 2013; van Boeckel, 2014) and contributed to foster new models of both interaction and communication between pupil and teachers across classes, students and educators from different countries and educational systems, external stakeholders and inhabitants of the community (Lave and Wenger, 1991, 2003; Fägerstam and Blom, 2013; Rickinson et al., 2004; Waite, 2011).

Cultural sensitivity

You start with the local perspective and build from there. (student quote)

When developing AAE, the emphasis was on bringing that ecocultural knowledge into the core of the intra-actions (Barad, 2007). The theme of cultural sensitivity included both the focus on giving a voice to the participants and taking down the hierarchies (Berliner and De Casas, 2024), and, in general, taking into account local culture and knowledge.

The students' emphasis on giving the local children and youth a voice in the art activities (Berliner and Enghoff, 2019) and the importance of considering the local culture and Indigenous knowledge (Guttorm, 2015, 2012) by carefully acquiring information in advance, using local guides and informants, and using the local language in communication and permits, indicate that the students internalised the AAE's basis on decolonisation and local ecoculture (Jokela and Hiltunen, 2024). According to Black and Burish (2020), arts and crafts are deeply local, social, cultural, and economic. Intertwining the cultural sensitivity, visual expressions and art-based activities in AAE.

Social art practice and community art serve as vital pedagogical tools that foster agency, dialogue, and critical engagement, encouraging learners to confront dominant social systems in their community and imagine sustainable alternatives (Permar, 2019; Hiltunen, 2008; Austin, 2008). In the workshops arranged in the AAE fieldwork, the pupils got to express their own experiences, thoughts and ideas and not only replicate others. For example, the society in Narsaq is unique and has a strong hunting and fishing culture, but also social challenges. In many workshops, pupils were free to explore and express their mood or thoughts about the future for themselves and society. In the filmmaking workshop at the Inusullivik college, they also got the opportunity to reflect on their role in their community. According to David-Chavez et al. (2020), land-based learning (Kress and Horn-Miller, 2023; McDonald, 2023; Wildcat et al., 2014) in Arctic and Subarctic regions is inseparable from the cultures, cosmologies, and survival practices of the Indigenous people. It is also a form of resistance to Western, colonial educational structures that have historically marginalised or erased Indigenous voices.

Get out of the school [building]s!! (student quote)

The students highlighted that especially the activities outside the school building motivated and inspired pupils to use their own culture, history and ecology in their artistic expressions. In the local settings, the



Figure 12: Collective printing artwork done by all ages: Instead of carving a plate, some of the pupils had used their hands to make prints, and this approach was also adopted by the elderly participants (Mette Gårdvik, 2025)



Figure 13: The pupils playing with their animal masks with the animal names in English and Kalaallit, and inspiring photos of different sea life in the background (Ann Kristin Klausen, 2025)

pupils turned into experts and guides. The activities included visiting the museum, making a film in their community (Fig.8), taking pictures of nature, buildings and other items in the local community, making tiny snowmen (Fig.9) and using the pictures in new settings (making comics, collages, prints and animal masks) (Fig.12 and Fig.13).

Therefore, the culture, history, and environment were evident in the pupils' expressions in the exhibitions. By employing place-based learning rooted in pupils' ecoculture, pupils avoided being forced into unfamiliar cultural expressions. For example, in the printing workshop (Fig.12) and animal mask workshop (Fig.13), throughout the processes, pupils shared stories and experiences related to animals, particularly about hunting. They recounted experiences of shooting their first whale, seal, or reindeer, beliefs and superstitions, dreams and plans, local traditions, and relationships. Symbols and stories expressed in the exhibitions were strongly inspired by the community's traditions, culture and environment. Community art and artistic expressions like drawings and prints from the elderly home and school children had many similarities, using the same symbols and shapes of important tools, animals, geological formations, and figures from local myths. By connecting elders and youngsters, focusing on sharing knowledge through storytelling and artmaking, we developed a community where drawings and prints as visual expressions gave new insights across generations (Fig.14).



Figure 14: An elderly woman at the Nursing home drew the view from Akilliit, where the fishers and hunters place their boats. The place is in Narsaq, and you must go through the "Narsaarmiut" road (Translated from Kallaalit to English by Katrina K.; Photo: Mette Gårdvik, 2025)

Linguistic, visual and bodily communication and expression

When connecting different universities, several countries, and groups of actors, from pupils to cross-sector partners, communication was one of the key issues at all levels. The course information was hoped to be clearer, and this issue was addressed by dividing the AAE course into two separate courses next spring. Many students said there should be more time used to get to know each other so that all the different expertise and knowledge that the individuals of the group have could be better put into practice.

Common mission and vision to be discussed. (Student quote)

Thus, the roles and goals of the nomadic hub activities needed clarification. In school, communication with the teachers was the key to accessing the language, tools, and spaces in the school. The communication in the workshops was mainly in English. In a classroom situation, getting the pupils' responses was sometimes challenging. This was easier when a teacher was present who could translate the question.

Students experienced that communication was easier during workshops that were outdoor, physical or practical hands-on activities and exploratory activities. Using art-based methods brought visual, multimodal, and bodily information and justified the place of the arts in the centre of the Nomadic hub. The pupils primarily engaged in inclusive physical games with our stakeholders from the Norwegian Outdoor Recreation Board, with much fun and laughter. These games broke the ice between students and pupils and eased communication in classroom workshops. Also, students experienced that when they showed interest in learning words in Kalaallit, the pupils were eager to help them spell and pronounce the words correctly (Fig.10 and Fig.13). Using gestures and the whole body, visual tools, and outcomes to express meaning also mediated linguistic communication (Eisner, 2003; Frisch, 2011; Cromley et al., 2019; Skjelbred, 2021). In addition, students prepared examples of what participants could do in the workshops, but pupils were free to choose their way of expressing themselves (Kester, 2005, 2014) about the theme for the workshop (Fig.13).

Pupils were challenged to discuss, express or share through artistic approaches (Fig.13). When visiting the museum and taking pictures of the museum exhibition and the local community, they shared stories about history, myths, and societal events. The process of making and discussing was an important part of the workshops, which is in line with Kester (2005), Frasz and Sidford (2017), Leeson (2018), and Helguera (2011). Creative making rooted in participatory and collaborative processes was used as a site for relational and dialogical exchange.

The fieldwork in AAE builds on the recognition of art as a transformative practice that enables emotional, cultural, and political expression, strengthens community cohesion, and facilitates intergenerational and intercultural dialogue (Jokela et al., 2021). In this context, art is not confined only to aesthetic production but also as a method for communication (Frisch, 2011), knowledge generation, decolonisation (Korsström-Magga, 2025), resistance, psychological resilience (Berliner and de Casas, 2024), and reconnection (Berliner and Enghoff, 2019). It can contribute to communities to make sense of environmental loss, cultural change, and shifting power relations, while also imagining alternative futures grounded in art-based environmental education, cultural sustainability and place (Härkönen, 2021; Jokela and Hiltunen, 2024).

Ecological contexts shape and define each community and its individuals through craft, which was strongly visible in the artistic expressions of the community, across generations. Experiences from AAE fieldwork in Karasjok in 2024 suggested that the pupils and the whole community should be invited to participate in future workshops to include the communities' voices and enforce communication across institutions and generations. Spínola (2021) uses the concept of 'educating communities' about learning

environments embedded in everyday life that integrate environmental knowledge with affective, cultural, and ethical sensibilities. Land-based learning is conceptually distinct in its grounding in Indigenous worldviews and epistemologies and represents more than learning in or about a place; it is learning from and with the land as a living entity and active participant (Kress and Horn-Miller, 2023; McDonald, 2023; Wildcat et al., 2014). Land-based learning in Arctic and Subarctic regions is inseparable from the cultures, cosmologies, and survival practices of the Indigenous peoples. It is also a form of resistance to Western, colonial educational structures that have historically marginalised or erased Indigenous voices (David-Chavez et al., 2020). In the future, there will be a challenge to collaborate even more with the local artists and others with expertise to connect the activities to the local materials and traditions.

Ecocultural resilience describes a society's or culture's ability to maintain its traditions and ecological methods despite environmental and social changes, often through sustainable and locally adapted solutions (Barthel et al., 2013; Rylander and Lundstedt, 2024). Through the pupils' artistic expressions displayed in the art exhibitions, the impression was that pupils were proud of what they had been producing during the workshops and happy with how it was displayed. They all looked and commented on each other's work, discussed and had a good time during the exhibition opening at the school.

Practical implementations

A shared trip and fieldwork united the participants and gave a reason for the online course to get to know each other. However, different fieldwork locations and experiences made it possible to share and learn from each other online from a broader perspective of locations and workshops. It is recommended that the execution of the shared hybrid course be flexible and that there be several possibilities for participating in the practical part.

Students experienced Nomadic Hubs as meaningful and rich learning experiences. They were inspired to guide pupils in expressing themselves about their history, culture, and identity in practical hands-on activities in the classroom or outside. It was easier to demonstrate the concepts of the task rather than provide pupils with written or oral instructions. They also claim that the workshop variation was positive for the pupils. Including local stakeholders was important for pupils to feel safe and encouraged them to talk about the place and themselves. Physical games and play were important to release stress and shyness, and to build good relations and trust with the pupils. Relations and trust are both important for building interdisciplinary knowledge together.

All students reflected on the importance of being able to improvise and saw the importance of working transdisciplinarily in this kind of workshop. As one of the students puts it:

...interdisciplinarity is not a theoretical luxury but a practical necessity in confronting complex issues such as climate change. Pupils learned that art visualises what science explains, just as science deepens what art evokes. We learned that flexibility, collaboration and a willingness to fail publicly are prerequisites for success in unfamiliar contexts. (student quote)

Arctic communities are not static museums but dynamic societies. Nomadic hub of AAE offered learning situated (Lave and Wenger, 1991) in real life, thus facing challenges. Students implementing workshops encountered delays due to weather and flight cancellations, team members falling ill, one student being

stranded, and teaching materials being lost. These issues required rapid reorganisation and caused frustration. Reflections highlighted the importance of preparation time to understand the local context. Students felt unprepared for classroom management and unfamiliar content, but learned the value of adaptability, improvisation and having multiple contingency plans to cover all possible scenarios. These are also valuable skills for future teachers.

Be open-minded and ready to improvise. Plan ahead but be ready for changes. (student quote)

Conclusions

In this article, we have examined the development and implementation of the Nomadic Hub of the Arctic Art Education (AAE) as a collaborative initiative among Arctic universities. Using art-based action research, we evaluated the pedagogical approaches and outcomes of the course, drawing on student reflections and experiences from fieldwork. These insights informed the iterative development of the course model and the defining elements of AAE activities:

- The AAE framework integrates hybrid learning through digital platforms and place-based fieldwork. This model highlights the pedagogical value of learning in intra-action with communities and landscapes, encouraging learners to engage in transdisciplinary processes that bridge art, science, and local knowledge.
- Fieldwork involving various participants demonstrated the importance of inclusive and intergenerational participation. This collaboration fostered local dialogue, strengthened cultural identity, and supported social cohesion.
- Integrating local stakeholders enhanced the relevance and impact of the workshops, allowing pupils to articulate their identities, histories, and dreams through artistic expression.
- Multimodal and bodily communication and collaborative hands-on activities helped overcome linguistic and cultural barriers, particularly in workshops involving physical play and outdoor engagement. These methods fostered trust, relationship-building, and deeper learning.
- Students recognised the significance of preparation time, flexible planning, and improvisation as essential competencies for future educators in remote and dynamic contexts.

In conclusion, the Nomadic Hub of AAE offers a transformative, place-responsive educational model that supports ecological awareness, cultural sensitivity, and collaborative knowledge production—prioritising relational learning that values local knowledge, storytelling, and shared authorship. Through sustained collaboration and critical reflection, AAE can continue to evolve as a vital framework for rethinking art education and sustainability practices in the Arctic.

Acknowledgements

We would like to thank communities in Karasjok, Norway and Narsaq, Kallaallit Nunaat, for warmly welcoming us to your schools, elderly homes, youth clubs, museums, and art centres. The chance to encounter and work with the teachers, pupils, students, museum staff, and other local actors made the Nomadic hub of Arctic Art Education possible alive. Special thanks to Marija Griniuk from Sámi Dáiddaguovddáš, Ivalo Motzfeldt from Kujalleqin commune and Lise Autogena from Narsaq

International Research Station (NIRS), who helped us to get everything organised in the locations. Thanks also to all the participating students, researchers, and colleagues from our universities and from Umeå University and our collaborators Rebekka Braaten, from Polarsirkelen Friluftsråd and Hanna-Leena Metsävainio, from Piste Collective, for taking the challenge and joining in the adventures of developing, researching and reflecting together. And finally, thank you to the professors Peter Berliner and Timo Jokela for the vision and expertise to make it all possible.

References

- ANTTILA, E., (2015). Embodied learning in the arts. In: S. SCHONMANN, ed., *Wisdom of the many: Key issues in arts education. International yearbook for research in arts education*. Münster: Waxman. pp.372–377.
- ARORA-JONSSON, S., (2016). Does resilience have a culture? Ecocultures and the politics of knowledge production. *Ecological Economics*, **121**, pp.98–107.
<https://doi.org/10.1016/j.ecolecon.2015.11.020>
- AUSTIN, J., (2008). Training Community Artists in Scotland. In: G. COUTTS and T. JOKELA, eds., *Art, Community and Environment. Educational Perspectives*. Bristol: Intellect Books. pp.175–192.
- BARAD, K., (2007). *Meeting the Universe Halfway. Quantum Physics and the Entanglement of Matter and Meaning*. Durham: Duke University Press.
- BARTHEL, S., COLDING, J., ERIXON, H., ERNSTSON, H., GRAHN, S., KÄRSTEN, C., MARCUS, L., and TORSVALL, J., (2013). *Principles of Social Ecological Design: Case Study Albano Campus, Stockholm*. Stockholm: School of Architecture and the Built Environment, TRITA-ARK-Forskningspublikationer.
- BLACK, A., and BURISCH, N., (2020). *The New Politics of the Handmade: Craft, Art, and Design*. London: Bloomsbury Visual Arts.
- BERLINER, P., and ENGHOFF, T., (2019). *Collaboration, Dialogue and Trust. Art and Social Resilience in Kalaallit Nunaat / Greenland*. Nuuk: Siunissaq/ Ilisimatusarfik / University of Greenland.
- BOSTRÖM, M., OJALA, M., and ÖHMAN, J., (2024). Transformative learning. In: C. OVERDEVEST, ed., *Elgar Encyclopedia of Environmental Sociology*. Cheltenham: Edward Elgar Publishing. pp.550–556. <https://doi.org/10.4337/9781803921044.ch97>
- VAN BOECKEL, J., (2013). *At the Heart of Art and Earth. An Exploration of Practices in Arts-Based Environmental Education*. Helsinki: Aalto University, School of Arts, Design and Architecture.
- BRAIDOTTI, R., (1994). *Nomadic subjects: Embodiment and sexual difference in contemporary feminist theory*. New York: Columbia University Press.
- BRAIDOTTI, R., (2011). *Nomadic theory: The portable Rosi Braidotti*. New York: Columbia University Press.
- VAN BÖCKEL, J., (2009). Arts-based environmental education and the ecological crisis: Between opening the senses and coping with psychic numbing. In: B. DRILLSMA-MILGROM and L. KIRSTINÄ, eds., *Metamorphoses in children's literature and culture*. Vantaa: Enostone. pp.145–164.

COUTTS, G., (2013). Applied Visual Arts: Learning for the real world? In: T. JOKELA, G. COUTTS, M. HUHMARNIEMI and E. HÄRKÖNEN, eds., *Cool. Applied Visual Arts in the North*. Rovaniemi: University of Lapland. pp.22–31.

CRESWELL, J.W., and POTH, C.N., (2018). *Qualitative inquiry and research design: Choosing among five approaches*. (4th ed.). Thousand Oaks: Sage Publications.

CROMLEY, J.G., DU, Y., and DANE, A.P., (2019). Drawing-to-Learn: Does Meta-Analysis Show Differences Between Technology-Based Drawing and Paper-and-Pencil Drawing? *Journal of Science Education and Technology*, 29(2), pp.216–229. <https://doi.org/10.1007/s10956-019-09807-6>

DAHL, T., and ØSTERN, T.P., (2019). Dybde//læring med overflate og dybde [Depth//learning with surface and depth]. In: ØSTERN, T.P., DAHL, T., STRØMME, A., PETERSEN, J.A., ØSTERN, A-L. and SELANDER, S., eds., *Dybdelæring – en flerfaglig, relasjonell og skapende tilnærming*. Oslo: Universitetsforlaget. pp.39–53.

DAVID-CHAVEZ, D.M., VALDEZ, S., ESTEVEZ, J.B., MELÉNDEZ MARTÍNEZ, C., GARCIA, A.A., JOSEPHS, K., and TRONCOSO, A., (2020). Community-based (rooted) research for regeneration: understanding benefits, barriers, and resources for Indigenous education and research. *AlterNative: An International Journal of Indigenous Peoples*, 16(3), pp.220–232. <https://doi.org/10.1177/1177180120952896>

DEWEY, J., (1963). *Experience and education*. New York: Collier Books.

EISNER, E., (2002). *The Arts and Creation of Mind*. New Haven: Yale University Press.

FAN, J.E., (2015). Drawing to Learn: How Producing Graphical Representations Enhances Scientific Thinking. *Translational Issues in Psychological Science*, 1(2), pp.170–181. <https://doi.org/10.1037/tps0000037>

FORD, J., PEARCE, T., CANOSA, I., and HARPER, S., (2021). The rapidly changing Arctic and its societal implications. *Wires Climate Change*, 12(6). <https://doi.org/10.1002/wcc.735>

FRASZ, A., and SIDFORD, H., (2017). *Mapping the Landscape of Socially Engaged Artistic Practice. Art Making Change*. Available: https://icasc.ca/wpcontent/uploads/2018/05/Mapping_the_Landscape_of_Socially_Engaged_Artistic_Practice_Sept2017.pdf

FRISCH, N.S., (2011). Ways of talking about drawing practices. Sociocultural views: Gombrich and visually controlled drawing. *FormAkademisk*, 4(2). <https://doi.org/10.7577/formakademisk.199>

FÄGERSTAM, E., and BLOM, J., (2013). Learning biology and mathematics outdoors: effects and attitudes in a Swedish High School Context. *Journal of Adventure Education and Outdoor Learning*, 13(1), pp.56–75.

GRUENEWALD, D.A., (2003). The Best of Both Worlds: A Critical Pedagogy of Place. *Educational Researcher*, 32(4), pp.3–12. <https://doi.org/10.3102/0013189X032004003>

GULLIKSEN, M.S., (2017). Making matters? Unpacking the role of practical aesthetic making activities in the general education through the theoretical lens of embodied learning. *Cogent Education*, 4(1). <https://doi.org/10.1080/2331186X.2017.1415108>

GUTTORM, G., (2012). Duodji: A new step for art education. *International Journal of Art and Design Education*, 31(2), pp.180–190. <https://doi.org/10.1111/j.1476-8070.2012.01712.x>

GUTTORM, G., (2015). Contemporary duodji – a personal experience in understanding traditions. In: T. JOKELA and G. COUTTS, eds., *Relate North. Art, heritage and identity*. Rovaniemi: Lapland University Press. pp.60–76.

GUTTORM, G., (2018). Traditions and traditional knowledge in the Sámi culture. In: N. GREYMORNING, ed., *Being indigenous*. London: Routledge. pp.65-75

GÅRDVIK, M., (2011). Community art og skapende prosesser i naturmaterialer [Community art and creative processes in natural materials]. In: T. LØKENSGARD HOEL, T.M. GULDAL, C.F. DONS, S. SAGBERG, T. SOLHAUG and K. WÆGE, eds., *FoU i praksis 2010. Rapport fra konferanse om praksisrettet FoU i lærerutdanning*. Trondheim: Tapir Akademisk Forlag. pp.157–165.

HELGUERA, P., (2011). *Education for socially engaged art: A materials and techniques handbook*. New York: Jorge Pinto Books Inc.

HILTUNEN, M., (2008). Community-based art education in the North: A space for agency? In: G. COUTTS and T. JOKELA, eds., *Relate North. Art, Community and environment: Educational perspectives*. Bristol: Intellect Books. pp.91–112.

HRASTINSKI, S., (2019). What do we mean by blended learning? *TechTrends*, 63(5), pp.564–569.

HUHMARNIEMI, M., JOKELA, T., and HILTUNEN, M., (2021). Paradigm shifts in northern art, community and environment studies for art teacher education. *Social Sciences and Humanities Open*, 4(1). <https://doi.org/10.1016/j.ssaho.2021.100181>

HWANG, A., (2018). Online and hybrid learning. *Journal of Management Education*, 42(4), pp.557–563. <https://doi.org/10.1177/1052562918777550>

HÄRKÖNEN, E., (2021). *Seeking culturally sustainable art education in higher education. The Northern perspective*. Doctoral dissertation, University of Lapland. Available: <http://urn.fi/URN:ISBN:978-952-337-268-9>

HÄRKÖNEN, E., HUHMARNIEMI, M., and JOKELA, T., (2018). Crafting sustainability. Handcraft in contemporary art and cultural sustainability in Lapland. *Sustainability*, 10(6).

<https://doi.org/10.3390/su10061907>

ILLERIS, H., (2017). Subjectivation, togetherness, environment. Potentials of participatory art for Art Education for Sustainable Development (AESD). *Nordic Journal of Art and Research*, 6(1).

<https://doi.org/10.7577/information.v6i1.2166>

INGOLD, T., and KURTTILA, T., (2000). Perceiving the Environment in Finnish Lapland. *Body and Society*, 6(3–4), pp.183–196. <https://doi.org/10.1177/1357034X00006003010>

JOKELA, T., BERLINER, P., and MANNINEN, A.E., (2024). Introduction: Creating Sustainability Portraits in the Arctic. In: T. JOKELA, P. BERLINER and A.E. MANNINEN, eds., *Creating Arctic Sustainability Portraits*. Rovaniemi: University of Lapland, pp.8–12. Available:

<https://urn.fi/URN:NBN:fi-fe20241209100493>

JOKELA, T., and HILTUNEN, M., (2024). New genre of Arctic art education as a way of knowing the North. In: T. JOKELA, M. HUHMARNIEMI and K. BURNETT, eds., *Relate North: New Genre Arctic Art Education beyond Borders*. InSEA Publications, pp.12–37. https://www.insea.org/wp-content/uploads/2024/12/RN2024_WEB.pdf

JOKELA, T., and HUHMARNIEMI, M., (2022). Arctic art education in changing nature and culture. *Education in the North*, 29(2), pp.4–27. <https://doi.org/10.26203/55f2-1c04>

JOKELA, T., and HUHMARNIEMI, M., (2021). Stories transmitted through art for the revitalisation and decolonization of the Arctic. In: R. SØRLY, T. GHAYE and B. KÅRTVEIT, eds., *Stories of change and sustainability in the Arctic regions: The interdependence of local and global*. London: Routledge, pp.57–71.

JOKELA, T., HUHMARNIEMI, M., BEER, R., and SOLOVIOVA, A., (2021). Mapping a new genre of Arctic art. In: L. HEININEN, H. EXNER-PIROT and J. BARNES, eds., *Arctic Yearbook 2021: Defining and mapping sovereignties, policies and perceptions*. Available: <https://arcticyearbook.com/arctic-yearbook/2021/2021-scholarly-papers/400-mapping-new-genre-arctic-art>

JOKELA, T., MANNINEN, A., and BERLINER, P., (2024). Introduction: A journey with a new genre Arctic art. In: T. JOKELA, A. MANNINEN and P. BERLINER, eds., *Mapping the New Genre Arctic Art Education*. Rovaniemi: University of Lapland. pp.8–13. Available: <https://urn.fi/URN:NBN:fi-fe2024120599888>

JÓNSDÓTTIR, Á.B., (2017). *Artistic Actions for Sustainability: Potential of Art in Education for Sustainability*. Rovaniemi: University of Lapland.

- KAUFMANN, D.B., RAJKOVIĆ, N., and SOMMER, J.M., (2023). The role of environmental art in fostering ecological awareness and action. *Humanities and Social Sciences Communications*, 10(1), pp.1–10. <https://doi.org/10.1057/s41599-023-02459-3>
- KESTER, G.H., (2005). Conversation Pieces: The role of dialogue in socially-engaged art. In: Z. KUCOR and S. LEUNG, eds., *Theory in Contemporary Art Since 1985*. Oxford: Blackwell Publishers. pp.153–165.
- KESTER, G., (2014). Art and Answerability in Jay Koh's Work. Foreword. In: J. KOH, *Art-led participatory processes: Dialogue and subjectivity within performances in the everyday*. Helsinki: Academy of Fine Arts, University of the Arts Helsinki. pp.1–6.
- KLAFKI, W., (2001). *Dannelsesteori og didaktik: nye studier*. 3rd ed. Aarhus: Klim.
- KORSSTRÖM-MAGGA, K., (2025). *Boazoeallin – Reindeer Life: Exploring possibilities for decoloniality with community-based art education*. Doctoral dissertation, University of Lapland.
- KRESS, M., and HORN-MILLER, K., (2023). *Land as Relation: Teaching and learning through place, people and practices*. Toronto: Canadian Scholar Press.
- LAVE, J., and WENGER, E., (1991). *Situated Learning: Legitimate Peripheral Participation*. Cambridge: Cambridge University Press.
- LEAVY, P., (2017). *Research design: Quantitative, qualitative, mixed methods, arts-based, and community-based participatory research approaches*. New York, London: The Guilford Press.
- LEESON, L., (2018). *Art, process, change: inside a socially situated practice*. London: Routledge.
- LEWIN, K., (1946). Action research and minority problems. In: G.W. LEWIN, ed., (1948). *Resolving Social Conflict*. New York: Harper and Row.
- MANNINEN, A.E., (2021). *Yhteyksiä luomassa: Nykyaikadeperustainen ilmiöpohjainen oppiminen Euroopan kansalaisuuden tarkastelussa* [Creating Connections Contemporary art-based and concept-based learning about European citizenship]. Doctoral dissertation, University of Lapland. Acta Electronica Universitatis Lapponiensis. Available: <http://www.urn.fi/URN:ISBN:978-952-337-279-5>
- MCDONALD, M., (2023). *Indigenous land-based education in theory and practice*. Toronto: Yellowhead Institute.
- MEZIRROW, J., (2009). An Overview on Transformative Learning. In: K. ILLERIS, ed., *Contemporary theories of learning. Learning theorists – in their own words*. London: Routledge. pp.901–905. https://people.bath.ac.uk/edspd/Weblinks/PGCES%20ULL%20articles/General/Contemporary%20Theories%20of%20Learning_%20Learning%20theorists%20.%20in%20their%20own%20words%20-%20Knud%20Illeris.pdf

ORR, D., (2013). Place and pedagogy. *NAMTA Journal*, 38(1), pp.877–887.

OJALA, M., (2016). Facing anxiety in climate change education: From therapeutic practice to hope and action. *Canadian Journal of Environmental Education*, 21, pp.41–56.

PERMAR, R., (2019). Connect and Collaborate. In: M. HILTUNEN, I. ZEMTSOVA, N. BAZHENOVA, A. LYANTSEVICH and T. TUPENKO, eds., *Relate North 2019: Tradition and Innovation in Art and Design Education*. Rovaniemi: University of Lapland. pp.72–73.

READ, H., (1967). *Education through Art*. London: Faber and Faber.

RICKINSON, M., DILLON, J., TEAMY, K., MORRIS, M., CHOI, M-Y., SANDERS, D., and BENEFIELD, P., (2004). *Review of research on Outdoor Learning*. London: National Foundation for Educational Research and King's College London; Field Studies Council.

SCHÖN, D.A., (1983). *The Reflective Practitioner: How Professionals Think in Action*. New York: Basic Books.

SKJELDBRED, B.H., (2021). “Det ekstra laget” – for en helhetlig undervisning. Observasjonstegning og forestillingstegning i skolen – hva står på spill. *FormAkademisk*, 14(1).

<https://doi.org/10.7577/faormakademisk.3823>

STOLL, K., SØRMO, W., and GÅRDVIK, M., (2022). Understanding landscape through the interconnection of different forms of knowledge: three examples from Living in the Landscape 2021. In: G. COUTTS and T. JOKELA, eds., *Relate North #9*. InSEA Publications. pp.82–105.

SMITH, W., and SOBEL, D., (2010). Place- and Community-Based Education. In: W. SMITH and D. SOBEL, eds., *Place- and Community-based Education in Schools*. New York: Taylor and Francis Group.

SPÍNOLA, H., (2021). Environmental culture and education: A new conceptual framework. *Creative Education*, 12, pp.983–998. <https://doi.org/10.4236/ce.2021.125072>

STEPHEN, K., (2018). Societal impacts of a rapidly changing Arctic. *Current Climate Change Reports*, 4, pp.223–237. <https://doi.org/10.1007/s40641-018-0106-1>

TROTT, C.D., EVEN, T.L., and FRAME, S.M., (2020). Merging the arts and sciences for collaborative sustainability action: a methodological framework. *Sustainability Science*, 15, pp.1067–1085.

<https://doi.org/10.1007/s11625-020-00798-7>

VYGOTSKY, L.S., (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

WAITE, S., (2011). Teaching and learning outside the classroom: Personal values, alternative pedagogies and standards. *Education 3–13*, 39(1), pp.65–82.

WILDCAT, M., MCDONALD, M., IRLBACHER-FOX, S., and COULTHARD, G., (2014). Learning from the land: Indigenous land-based pedagogy and decolonization. *Decolonization: Indigeneity, Education and Society*, 3(3). Available: <https://nycstandswithstandingrock.files.wordpress.com/2016/10/wildcat-et-al-2014.pdf>

WU, S.P.W., and RAU, M.A., (2019). How Students Learn Content in Science, Technology, Engineering, and Mathematics (STEM) Through Drawing Activities. *Educational Psychology Review*, 31(1), pp.87–120. <https://doi.org/10.1007/s10648-019-09467-3>

ØSTERGAARD, E., (2013). Naturfag og kunst: berøringer med verden [Science and art: contacts with the world]. *Bedre Skole*, 4, pp.10–15. <https://utdanningsforskning.no/artikler/2013/naturfag-og-kunst-beroringer-med-verden/>