Editors: Timo Jokela, Maria Huhmarniemi & Kathryn Burnett

RELATE NORTH

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Preface

Timo Jokela, Maria Huhmarniemi and Kathryn Burnett

We are delighted to present here the eleventh book in the *Relate North* series: a collection of work exploring and critically examining art, design, craft, and education in the North, the Arctic, and near-Arctic countries. This book explores how contemporary art in northern and Arctic regions promotes and critiques sustainability through education, community engagement, and locally bound artistic practices. Each chapter presents unique approaches to addressing the urgent social, cultural, and environmental issues affecting Arctic regions, with art used as both a pedagogical and an activist tool.

As with previous Relate North books, this edition is produced by the Arctic Sustainable Arts and Design (ASAD) thematic network of the University of the Arctic. Notably, this is the sixth volume of the *Relate North* series published in collaboration with the International Society for Education through Art (InSEA), extending its reach to readers worldwide.

In November 2023, the *Relate North: Beyond Borders* symposium and exhibition were held in Umeå, Sweden, in collaboration with ASAD, Umeå University, and the University of Lapland. The theme of *Beyond Borders* was significant on many levels. In academic contexts, art and design education often intersect with various disciplines, creating tension and dialogue about what constitutes legitimate knowledge. This theme also touches on sustainability issues, pushing for a reimagining of how sustainable art and design can reshape the future.

Beyond academic borders, the symposium's theme tackled identity formation and power structures. Cultural experiences help individuals define themselves in relation to others, raising questions about assumptions linked to Arctic origins. These discussions are deeply intersectional, addressing how power structures—such as those rooted in religion, gender, and nationalism—shape and influence people's lives. In the context of the Arctic, these structures have tangible impacts on issues such as migration, decolonisation, and identity. The Umeå symposium examined how art and design education can foster sustainability and resilience in Arctic and near-Arctic communities. In conclusion to the event, reflecting on the synergies of both the *Beyond Borders* theme and the con-

cept of a "new genre Arctic art," which has emerged among ASAD researchers (Jokela et al., 2021), a call for contributions to this volume was made.

The concept of "new genre Arctic art" builds on Suzanne Lacy's (1995) notion of "new genre public art", which describes art that fosters participatory, political, and aesthetic events. New genre Arctic art incorporates activism and engagement with issues such as resource extraction, climate change, and the cultural rights of Indigenous peoples, with an understanding and awareness of the unique and particular contexts of the Arctic region. The pedagogical turn in contemporary art in this new genre is impactful; with artists broadening public understanding of the Arctic through participatory and socially engaged practice. Notably, as explored here in this volume, art educators play a vital role in renewing Arctic ecoculture and decolonising visual art legacies and norms to further empower people of the Arctic (Jokela & Huhmarniemi, 2022).

The convergence of critical Arctic sustainability studies with this new genre Arctic art has led to a fundamental notion: sustainable art education must incorporate and respect local cultures and Indigenous and Northern knowledge. This approach to art education is forward-looking, imagining a future where art education plays a critical role in shaping sustainable societies in the Arctic.

Among ASAD network partners, a collaborative initiative called New Genre Arctic Art Education (AAE) has emerged. This initiative consists of several projects exploring how art and design education seeks to engage with and critically respond to environmental and socio-cultural concerns. Artists and art educators collaborate with communities that advocate for justice and the rights of more-than-human nature in the age of the Green transition, which profoundly impacts Arctic regions. AAE fosters cultural resilience and sustainability through artistic interventions and educational practices. Art-based action research across the circumpolar region demonstrates how artists and art educators work to empower communities, revitalize cultures, and decolonize practices. Through this work, they contribute to building strong cultural identities and sustainable futures in the North and Arctic regions.

Projects under the theme of new genre Arctic art education have made the recent ASAD collaboration, as well as much of the art-based development research presented in this book, possible. The first project in the *New Genre Art Education in the Arctic* framework was funded by Danish Agency for Science and Higher Education and represented by the University of the Arctic. This was followed by a second undertaking in the form of the *Sustainability Portrait Project—Art, Location, and Social Responsibility for Sustainable Development in the Arctic* funded by the Nordic Council of Ministers' Nordic Arctic Co-oper-

ation Programme, and represented by NAPA (the Nordic Institute in Greenland). This project involved planning, implementing, and evaluating an art-based sustainability workshop for young people. The workshops were followed by community art events and exhibitions that showcased young people's engagement with sustainability across the Arctic.

The third project and still currently running is the *New Genre Arctic Art Education: Development Project* (2023–2025) funded by the Nordic Council of Ministers Nordplus Horizontal 2023. This project will further develop AAE education in the ASAD network and partner universities. Many publications have already been released to share the documents of practice, visual essays and artistic reflections of the sub-projects in the theme of the new genre of Arctic art education (Jokela, 2024; Jokela et al., 2024a, 2024b).

The contributions to this eleventh *Relate North* book each express and further clarify the richness and expansion of new genre Arctic art education. Timo Jokela and Mirja Hiltunen examine how contemporary Arctic art can support sustainability through education. Discussing the concept of new genre Arctic art, the authors explain how it blends activism with public art, engaging with issues such as natural resource extraction and cultural rights. In illustrating how this artistic practice is understood as a pedagogical turn, the authors expand on how artists share their new understandings of the Arctic with the public.

Ruth Beer and Maria Huhmarniemi highlight how artists in both Canada and Finland respond to the impacts of climate change and natural resource extraction. Through interactive art forms and performances, they advocate for environmental justice and reflect on regional conflicts around land use, mining, and forestry, fostering hope for positive change. Beer and Huhmarniemi base their chapter in response to the recent exhibition, *Shifting Ground – Muuttuva maa* (2024) shown at the Rovaniemi Art Museum, Finland, itself a result of enduring and expanding research collaboration within the ASAD network.

Peter Berliner and Elena de Casas present the *Siunissaq* project, a community art initiative focused on peacebuilding, humanisation and collective learning, undertaken as one action of the *Sustainable Portraits* project, and in collaboration with two UArctic Thematic Networks: ASAD and the Children in the Arctic. The *Siunissaq* project engages young people in art-making to foster dialogue and promote social justice while transforming their societal roles and envisioning a sustainable future through listening, creativity, and inclusion.

Ella Haavisto and Gina Wall explore interdisciplinary approaches to cultural sustainability in their *shielin-bough* project, which connects The Glasgow School of Art and the

University of Lapland. By using shelter, food, and storytelling, this collaboration fosters intercultural exchange and revitalises traditional knowledge through building and making together.

Minna Kovero and Tatiana Kravtsov delve into collaborative art processes by focusing on the revitalising power and potential of traditional symbols. Their work explores eco-mythological embroidery from Ukraine and Karelia, aiming to foster connectedness and empowerment among participants, mainly through the shared crafting of sun goddess symbols. The chapter highlights how new genre Arctic art education rejects national and cultural borders in creation of sense of togetherness.

Siiri Paananen, Tommi Kiianmies, and Jonna Häkkilä demonstrate the use of immersive technologies and virtual reality in art and design education, drawing inspiration from the cultural history of Finnish Lapland. They explore how these technologies can foster creativity and cross-disciplinary boundaries, integrating cultural heritage with modern design practices. This chapter focuses on higher education in design.

Cindy Kohtala, Annamari Manninen, Sara Rylander, and Ylva Fernaeus investigate the intersection of digital fabrication, art, and sustainability in the Arctic. They examine how combining traditional craftsmanship with digital tools challenges the conventional notions of art-making while raising ethical questions about inclusivity and environmental responsibility in the digital age. The chapter is based on a panel discussion that took place at the *Relate North: Beyond Borders* symposium.

Rauni Äärelä-Vihriälä and colleagues explore intergenerational participatory workshops that use art and creative expression to amplify children's voices in the green transition in the Arctic. By engaging children in discussions on sustainability through photography and art, the authors advocate for a future shaped by our younger generations' unique perspectives on ecological challenges.

Finally, Heather McLeod shares a narrative of being a teacher for 13 months in the High Arctic in Canada. In her essay, she considers how this experience sculpted her post-secondary teaching through the arts to assist non-arts specialists find their individual means of expression.

Together, these chapters open up a vision for the transformative potential of art and art education in addressing sustainability across social, cultural, and environmental dimensions, particularly in the Arctic and northern regions. We hope that educators, art and design students and researchers worldwide will find this book inspiring and thought-provoking. Let the chapters of this book challenge our thinking and actions as artists and educators.

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New Genre Arctic Art Education as a Way of Knowing with the North

Timo Jokela and Mirja Hiltunen

In this chapter, we consider how contemporary art related to the North and the Arctic can guide and support art education in its efforts to promote sustainability. In describing the current state of art in the region, Jokela et al. (2021) introduced the concept of *new genre Arctic art* to define and describe contemporary artistic interventions, public art and performances that include activism and engagement with contemporary issues. The term is based on the concept of *new genre public art*, which was coined by Lacy (1995, 2008) to define participatory public art, which was often created outside of art institutions and engaged artists and communities with social and political issues. According to Huhmarniemi and Jokela (2020b), in the Arctic region, the extraction of natural resources and Indigenous people's cultural rights are common contemporary issues with which artists and artist-researchers are engaged. New genre Arctic art can be seen as a pedagogical turn of contemporary art, since artists have begun to share new understandings of the North and the Arctic with wider audiences through their art.

Art education researchers are aware that education systems, in their different forms, have been carriers and promoters of colonialism in the Arctic (Jokela & Hiltunen, 2023). In addition, life in the Arctic has been affected socially and economically by climate change, the utilisation of natural resources, urbanisation and an ageing population in rural regions (Nordic Council of Ministers, 2011). The parallelism of critical studies of Arctic sustainability (Fondahl & Wilson, 2017), discussion on Arctic sustainability transformation (Priebe et al., 2023) and new genre Arctic art has led to the assumption that art education can be culturally unsustainable if its activities do not take Northern contexts and circumstances into consideration. Because education systems are also potentially significant defenders in countering such changes and discourses, art education should launch awareness-raising activities to break down stereotypes and the traditional roles of art education. In this chapter, we consider, among other things, how art education is challenged by, as recent educational studies have stressed, how materiality has major importance in Arctic residents' childhoods (Rautio & Stenvall, 2018) and how Indigenous cultural pedagogy has demonstrated situational land-based outdoor activi-

ties as effective ways of learning beyond disciplines (Jannok-Nutti, 2009; Keskitalo, 2010; Wildcat et al., 2014).

Art educators working in the University of Arctic's (UArctic) thematic network on Arctic Sustainable Art and Design (ASAD) and especially at the University of NN (nn) have initiated, produced and explored art productions that engage with social, political and environmental issues in ways that connect art, communities and Northern cultures. This initiative and its realised activities can be considered *New Genre Arctic Art Education* (AAE). The AAE is also a joint initiative of the ASAD network and the Children of the Arctic thematic network of UArctic, which seeks to develop sustainable art education in the North, especially among young people. The AAE initiative has received funding from multiple sources.

In addition to providing a theoretical overview of AAE, our chapter critically examines the crossings of posthuman theories, particularly new materialism and more-than-human thinking, with the initiative. In the AAE context, posthumanism is considered an agenda for change. Furthermore, posthumanism is a multifaceted philosophy that encompasses several perspectives. Lummaa and Rojola (2014) anchored the present discussion in a branch of posthumanism that critically examines the boundaries between nature and culture and challenges the legacy of humanism. Authors writing on another branch of posthumanism, the technologically orientated transhumanist direction, maintain a vision of a new, highly augmented human no longer burdened by diseases, ageing or the body itself. This chapter approaches posthumanism specifically as a critique and extension of humanism and not necessarily as an entirely novel philosophical research trend. In this article, posthumanism is understood mainly as a reconceptualisation of the human-nature dichotomy – the dualistic separation between humans and nature, a border that is often present in traditional humanist thought and Western art.

In contrast to being simply the result of a momentary insight from current posthumanist discourse on human–nature relations, the AAE is a product of extensive long-term development on the co-existence of Northern nature and its people and art. Since the 1990s, the University of Lapland has integrated art-based environmental and community-based education into art teacher training in the spirit of Lacy's (1995) new genre public art, emphasising place-based and situational learning principles (Huhmarniemi et al., 2021). These participatory approaches in contemporary art have inspired strategies to bring communities together in consideration of traditions, nature connectedness and Northern multiethnicity. Rapid changes in the Arctic region require additional adjustments in higher education, formal and informal education, which constitute sustainability transformation

within our field. We understand that art education is not the most central factor in the ongoing transformation, the rapid changes, that the northern and Arctic regions are facing, but we see possibilities. Sustainability transformation research highlights Meadow's (2008, p. 145) definition of a leverage point as 'a place in the system where a small change could lead to a large shift in behaviour'. We see AAE as a possible leverage point.

Our chapter employs a research-strategic approach related to arts-based action research (see Jokela, 2019; Jokela & Huhmarniemi, 2018) within the research group that we are leading. We intend to assess the situation for the conceptual and methodological development of the AAE initiative. The chapter is a review based on research articles, visual essays, artworks, and students' and tutors' reports within the ASAD network from 2012 to 2023, although it does not take the traditional form of a research report. Research data serve as the objects of Baradian diffractive reading, which is an approach that acknowledges the interconnectedness of different perspectives, discourses and entities (Barad, 2014). In essence, diffractive reading challenges the idea of fixed, stable meanings and invites students to engage with texts and ideas in a way that acknowledges the complexity, multiplicity and ongoing dynamics of knowledge production (Barad, 2014). Through Baradian diffractive reading, the chapter illuminates entanglements of the AAE and the negotiation of tensions between contemporary art, Arctic art, ecoculture, Western ways of knowing, knowing-with North and the Arctic, Indigenous knowledge(s), Northern knowledge, decolonisation, revitalisation, resilience and ultimately sustainable transition in art education. This chapter hopes to shed light on the theoretical basis of the AAE and its contributions to the discussion on Arctic sustainability transformation (Figure 1).

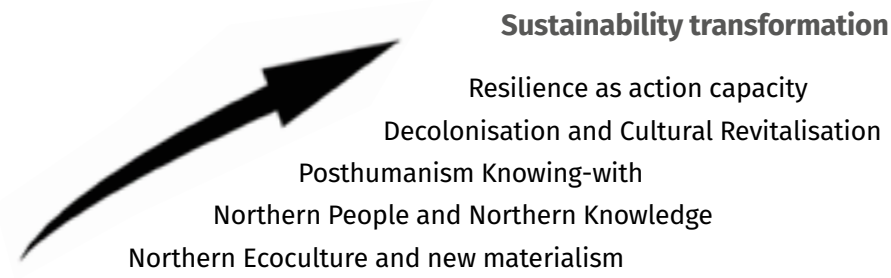


Figure 1. New Genre Arctic Art education conceptualisation and implementation in practice depicted in steps.

New Genre Arctic Art as Contemporary Art

In addition to the ecological and political focus, the Arctic has drawn international artists exploring the evolving dynamics of art, media and aesthetics (Bloom, 2022; Marsching & Polli, 2012). Our chapter delves into the Arctic and the North from insiders' perspectives, emphasising the agency of its people and artists. The Arctic and the North have many definitions, depending on the context and field of study. The ASAD network has members from all eight Arctic countries. Each country has regions located far in the north, away from the major cities in the south. In this chapter, we primarily refer to the northern parts of Scandinavia, but we also reflect on our observations concerning similar regions in North America.

Northern voices are becoming more prominent in contemporary art and academic research. Today, many Indigenous and non-Indigenous contemporary artists from the North and the Arctic use and transform traditions from their ecocultures with the help of modern technologies, including video, photography, installations and performances, and they have begun to show their work in international art exhibitions. Other such artists have addressed environmental and societal issues through art. For example, the Inuit video production company Isuma represented Canada at the Venice Biennale (Canadian Art, 2017). Furthermore, in 2022, the Sámi artists transformed the Venice Nordic Pavilion into *The Sámi Pavilion* in a representation of Sápmi, their Sámi homeland (Finbong el.al., 2022). Since the 1990s, Indigenous artists have utilised photography, video and other contemporary art forms, like installations (Figures 2 and 3) to analyse their heritage and worldviews and engage in discourse on their cultural rights and political aims, such as land use, in their art (Aamold et al., 2017; Beer & Saur, 2021; Hansen, 2016; Huhmarniemi, 2019). The Arctic Art Summit has also been a significant forum for cultural and political discussion. Huhmarniemi and Jokela (2020a, 2020b) examined current discourses on the role of art in the future of the Arctic and demonstrated how contemporary Arctic art transcends traditional depictions by engaging with local ecocultures, politics and identities. Arctic residents are now active creators and agents of internationally recognised art instead of passive subjects (Jokela et al., 2021).

The alternative approaches to ontologies and epistemologies presented within the scope of posthumanism have interested Indigenous and non-Indigenous artists in the North. We are also aware of the friction that might arise when contemporary art and Indigenous art meet, or ponder whether there is any friction. It is beneficial to mention Watt's (2013) critique of how post-humanism is taken up by non-Indigenous scholars, often in a way that erases Indigenous thought, which she frames as Place-Thought. She

Figure 2. (left) Outi Pieski**,** *Cuolmmadit, 2019*. Transforming traditional handicraft into a contemporary art and installation exhibition at the EMMA contemporary art museum. Finland in 2019. Photograph: Ari Karttunen / EMMA.

Figure 3. (right) Installation *Girjegumpi* [Sámi Library] by Joar Nango in the National Museum Govva, Norway. In 2023, Girjegumpi travels to the Nordic Countries Pavilion at the 18th *International Architecture Exhibition – La Biennale di Venezia*. Photograph: Ina Wesenberg/ Nasjonalmuseet.

describes Place-Thought as the non-distinctive space where place and thought are never separated because they never can be separated. She states: 'We can see how Euro-Western thought is beginning to embrace the contributions of the non-human world; however, the controversial element of agency is often redesigned when applied to non-humans, thereby keeping this epistemological-ontological divide intact (Watt, 2013, p. 28)'. Indigenous histories are still regarded as story and process – an abstracted tool of the West. According to her, Place-Thought is based upon the premise that land is alive and thinking and that humans and non-humans derive agency through extensions of these thoughts (Watt, 2013, p. 21).

In the field of the new genre of Arctic art, there is a strong interest in the land, but an even more current issue seems to be the growing interest in Arctic material culture and handmaking skills (Härkönen et al., 2018). This trend follows the global paradigm shift towards new materialism, which has moved the focus towards physical locations and materiality, as proposed by Fox and Alldred (2019). New genre Arctic art does not

follow the dualistic tradition of Western art. Moreover, it is not produced exclusively for art's sake, and art, design and crafts are not separated into different fields of creation and education. Rather, artists combine beauty and practicality, art and design (Guttorm, 2015; Hautala-Hirvioja, 2014) and other ways of knowing their Northern culture in their creative productions. Art maintains and transforms local ecocultures in a posthumanist sense. Understandably, however, it also creates tensions and friction that may manifest in discussions about applying traditional seal-skin usage in contemporary art (Huhmarniemi & Jokela, 2020a).

Notably, from the AAE initiative perspective, many art projects carried out within the ASAD network have significant educational goals and impacts. Conversely, many art education projects have produced art that is also recognised as evocative and impactful new genre Arctic art.

Northern Ecoculture as a Fertile Mesh for Art Education

Ecoculture is a key concept of AAE that calls for examining art education practices through a posthumanist lens of human/non-human coexistences. Morton (2010) used the metaphor of the 'mesh' to express this idea of human and non-human interconnectedness from things like bacteria in our intestines to carbon atoms supporting life on Earth (2010). In our chapter, Northern and Arctic ecocultures serve as the stage and mesh. In the Arctic, the interconnection between ecological/nature and cultural/human dimensions is pronounced and extensive. Several anthropological and social science researchers have emphasised how robust human co-existence with nature characterises communities throughout the Arctic region (Ingold & Kurttila, 2000; Sakakibara, 2017; Valkonen & Valkonen, 2018). This intertwining of the ecological and the cultural is encapsulated by the term 'ecoculture' (Arora-Jonsson, 2016; Pretty, 2011), which illuminates the distinct characteristics of communities, places and the more-than-human nature. Ecoculture can also be understood through the concept of 'material-discursive intra-action', which was adopted in Barad's (2011, p. 125) new materialist theory. Ecoculture is not understood as traditional interactions between nature/ecosystems and culture/human institutions as separate entities. Rather, it is a state of co-constitution, intra-action, in which entities and their borders are constantly shaped. In the AAE context, it is a question of situational learning within the ecocultural mesh.

Cultural practices in Arctic traditional arts within ecoculture are intricately linked to natural ecosystems, in which local and regional traditions, forms of living heritage and

cognitive frameworks persist and are transmitted to new generations and newcomers via intra-action. Today, the Arctic environment is undergoing rapid transformations due to the dual impacts of global warming and the industrial exploitation of natural resources. These changes have had cumulative effects on the ecoculture, livelihoods, knowledge systems, social dynamics and overall well-being of Arctic inhabitants (Nordic Council of Ministers, 2011; Stephen, 2018). Through AAE, an attempt has been made to create a situation where tensions between Northern and Arctic ecocultures and art-making can be negotiated in a posthumanist sense. Understanding the phenomenon requires understanding Northern ecocultures, and assistance in this has been sought from the ontologies and epistemologies of posthumanism.

The concept of ecoculture can also help identify ecocultural sustainability (Huhmarniemi & Jokela, forthcoming) as a core of Arctic sustainable transformation (Priebe et al., 2023). This has been addressed and defined in many art-based action research studies in which ecocultural connectivity has been revived and renewed, covering winter conditions in terms of snow and ice (Jokela & Huhmarniemi, 2022b), trees and forests

Figure 4 (left). Hiking sticks made during a walk, during which all ten tree species growing in the forest were identified. A stick was whittled from a branch and attached to the hiking stick as part of learning about each tree species. Photograph: Timo Jokela, 2022.

Figure 5 (right). The diverse use of birch bark unites the cultures of the boreal circumpolar region. In Tatiana Kravtsov's workshop, participants learned techniques for making birch bark jewellery. Photograph: Tatiana Kravtsov, 2020.

(Huhmarniemi, 2023; Huhmarniemi & Joy, 2022; Stöckell & Jokela, 2022), the use of natural materials (Stoll et al., 2022; Vaughan, 2018), village pathways and forest edges (Huhmarniemi et al., 2021), seashores (Baron, 2018; Gårvik et al., 2021) and plants (Raatikainen et al., 2020). Ecocultural sustainability and new materialism connection have also been prominently featured in the ASAD network's 'Living in the Landscape' Summer Schools, in which a multidisciplinary arts-based research methodology has been developed (Härkönen et al., 2023; Jokela & Härkönen, 2021). It has also made it possible to transcend the boundaries of art, design and craft even in small-scale art education activities (Figures 4 and 5).

These cases demonstrate that art-based action research connected to Northern ecoculture works is a transformative cultural activity that involves local sustainability transformation, and the value discussions stimulated by them works as possible cumulative effects, leverage points (Meadow, 2008), of Arctic sustainability transformation.

People of the North and the Arctic

In the posthumanist discourse on sustainability, attention – one might even say hope – is often directed towards Indigenous cultures and their ecocultural balance (Vadén, 2019). Notably, the Arctic is not a single, unified entity, despite it being often associated with authentic Indigenous cultures. Stephen (2018) noted that there are various ways to define who qualifies as Indigenous, and he highlighted this complexity as a defining feature of Arctic ethnicity. In addition to Indigenous cultures, the Arctic hosts other cultural minorities with valuable heritages, traditions and cultural identities. As Chartier (2018) stressed, the Arctic is a multiethnic, multicultural and multilingual place, and the blending of Indigenous cultures and other lifestyles of the Arctic peoples is typical in the region. These cultural and social situations have been considered in community-based art education activities in the North (Hiltunen, 2010, 2021, 2023).

In cultural discussions, Indigenous cultures appear to be somewhat dichotomous. According to Stephen (2018), Indigenous peoples in the Arctic have been characterised as the people most vulnerable to the societal impacts of the changing Arctic. At the same time, they are increasingly the subject of research as rights holders and active participants in governance, law, politics, research and the arts.

Jokela (2024) suggested that in art education, the peoples of the Arctic region should be examined using an intersectional approach to the group and individual identities of the locals (Bastos, 2006) to comprehend how Northern inhabitants and communities

Figures 6 and 7. Art teacher student of Lapland University in Finland and Sámi University of Applied Sciences in Norway familiarise themselves with the Sámi handcrafts, duodji use the snow to create a visual identity for the venue of the Indigenous Film Congress in Kautokeino. Photographs: Timo Jokela, 2018.

understand themselves. Discussions on intersectionality are often based on the idea that groups of people differ in the number of privileges they have (Crenshaw, 1989). Many artists and art educators have adopted a shared vision and agenda of social justice and transformation to address urgent calls for equity (Dewhurst, 2014) and diversity and inclusion in social and educational structures and practices (Powers & Duffy, 2016). This can be dangerous because outsiders can easily marginalise the people of the sparsely populated North as isolated and segregated individuals who need saving, even though these people live at the centre of their world and powerfully manage its functions.

Rather than emphasising various intersectional societal dividing factors and challenges, we focus on integrative contemporary art education. The AAE emphasises the need for culturally sensitive art education, where all cultures in the North are seen as valuable. The AAE sees strengthening connections to one's cultural roots as essential for preventing feelings of disconnection. Cultural roots are a way to anchor oneself to the world and are considered by Salonen and Salonen (2023) to be key to a meaningful life and the responsibility that stems from it. Several projects have been carried out within the ASAD network with different northern communities as a means to revive and re-

new cultural sustainability. Many of these projects have been conducted in Sami-Finnish collaboration (Hiltunen, 2009, 2023; Hiltunen & Huhmarniemi, forthcoming) and have highlighted regional cultural uniqueness (Härkönen, 2021). The methods used here have been very diverse, including videos and short films (Lintumäki, 2023) snow and ice installations (Figures 6 and 7). (Jokela & Huhmarniemi, 2022b), photographed self-portraits (Berliner & Enghoff, 2019), community-based architecture (Sivtseva, 2020), performances (Hiltunen & Zemtsova, 2014) and Arctic design (Usenyuk-Kravchuk et al., 2020), among others. The review shows the power that art education practices draw from the working methods of contemporary Arctic art. However, the AAE emphasises the importance of intertwining contemporary art and traditional working methods based on ecoculture from Indigenous or other northern cultures.

Knowing-With and Northern Knowledge

Previous research on Northern and Arctic ecocultures has employed concepts such as traditional knowledge, traditional ecological knowledge, Indigenous knowledge, tacit knowledge and local knowledge (Helander-Renvall & Markkula, 2017; Porsanger & Guttorm, 2011; Valkonen & Valkonen, 2018). These concepts are all socially charged in certain ways. According to Kuokkanen (2000, 2007), Indigenous knowledge consists of information, skills and practices transmitted through culture, accumulated through the observation of the environment and shared within the community. Such knowledge is simultaneously comprehensive, detailed and intricate. Its central content revolves around the relationship between humans and other living beings and their environments, grounded in a worldview or perspective based on the close connection between humans and nature. According to Simpson (2014), the source of Indigenous

knowledge is Indigenous land. She states that it is critical to grow and nurture a generation of people that can think within the land and have tremendous knowledge and connection to the land. The contributions of urban Indigenous communities to collective resurgence are as important as rural. Cities have become sites of activism and resistance, and artistic, cultural and linguistic revival and regeneration, and this too comes from the land. The shift that Indigenous systems of intelligence compel us to make is one from capitalistic consumer to cultural producer (Simpson, 2014, p. 24). Within AAE, the concept of Indigenous knowledge does not cover all the different forms of cultural, traditional and tacit knowledge of all the multiethnic inhabitants of the Arctic. Therefore, we use the term *Northern knowledge* (Huhmarniemi & Jokela,

Figures 8 and 9. The place-based artwork *Transforming into a Bird in the Changing Landscape*, facilitated by Luostarinen, was related to knowing-with and the restoration of marshland nature. Nature scientific knowledge, local northern knowledge, embodied knowledge of the marsh, and an expanded perspective to see the marshland through the eyes of a bird combined in the implementation. Photograph (above): Antti Kurola, 2021. Photograph (below): Antti Stöckell, 2021.

2020a, 2020b). Northern knowledge differs from Indigenous knowledge(s) because the latter is often considered heritage – connected to and encapsulated by ethnicity. Northern knowledge refers to understandings and knowledge based on the Arctic region's ecocultures, including common traditions, social systems and the sustainable use of natural resources.

As emphasised by Huhmarniemi and Jokela (2020a, 2020b), the concept includes tacit knowledge related to material and spiritual culture, making it applicable as the basis of the AAE. In arts and crafts, this type of knowledge is often expressed through visual language and narratives shared with new generations and residents in the region through educational practices. Northern knowledge does not, in principle, guarantee the sustainable use of ecosystems; rather, it provides a starting point for continuous learning with ecoculture for all Northern and Arctic residents towards sustainable outcomes in a posthumanist sense.

Posthumanist epistemologies reject the idea that cognition resides solely within individual minds. Instead, they emphasise distributed cognition and acknowledge that knowledge is produced through intra-actions among humans and others (Ulmer, 2017). In the AAE, this perspective challenges the traditional emphasis on individual rationality and perhaps encourages us to think critically about individual creativity. The concept of knowing with nature (Höckert et al., 2019) draws attention to more-than-human agencies and learning with them, rather than only providing knowledge about them. According to Rantala et al. (2019, p. 4), 'Knowing-with is about togetherness, about being in relations with multiple others.'

In knowing-with, there is an appreciation for the multiplicity of perspectives and voices contributing to knowledge production. This includes not only human perspectives but also those of non-human entities, acknowledging the diversity of intelligence and ways of knowing. The art-based action research method developed in NN specifically for enhancing the agency of human groups has proven to be an effective approach in posthumanist co-research with other species agencies. Within the AAE in posthumanist framework, the intra-action of several projects questions the anthropocentric perspective that positions humans as separate and dominant actors in relation to other organisms and the environment. Examples include the environmental art garden of Ainalinpää (2019), which focuses on plants and pollinating insects; Luostarinen (2023) marshland (Figures 8 and 9), Soppela's (2022) art exhibition featuring Lapland cows and their caretakers; Korsström-Magga's (2022, 2023) community art, which depicts herding families and reindeer; and Sørmo's (Stoll et al., 2022) artwork, which deems eiders as

central. Humans, animals and plants interact, forming dynamic networks of coexistence and knowing-with through their actions. This emphasises the interconnectedness and co-production of knowledge among all actors in constructing reality.

Towards the Decolonisation of the North and Art Education

In the context of Northern ecocultures and communities, the work of deconstructing the human-nature dichotomy, is not only to promote co-existence but also to recognise that human inhabitants of the North, whether Indigenous or non-Indigenous Northerners, do not fit into conventional Western stereotypes and represent diverse, intersectional identities. Many art educators in ASAD have initiated, produced and explored art productions that engage with social, political and environmental issues in ways that connect art and multiethnic communities and people's intersectional identities and ways of knowing (Jokela & Huhmarniemi, 2022b).

In addition to Arctic art, Indigenous education research is becoming stronger and more heard. Keskitalo (2010) described education as a counterforce to colonialisation and emphasised the need for Sámi pedagogy in the Sámi region, following Smith's (1999) definition of decolonisation as a long-term process that includes dismantling administrative, cultural, linguistic and mental forms of colonialism. The need for decolonisation has been recognised in many Indigenous communities, such as the Nunavut in Canada (Snow & Tootoo, 2021), Northern multiethnic communities in mixed Sámi-Finnish societies in Central Lapland in Finland (Jokela & Huhmarniemi, 2022a) and Nova Scotia's coastal fishery communities in Canada (Corbett, 2007; Ivery, 2017). The AAE can offer important strategies and methods for decolonising the Arctic and making ecocultural sustainability better understood and more visible.

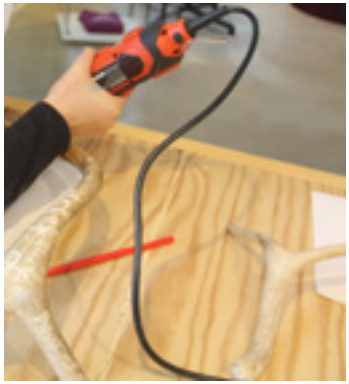
To enhance decolonisation efforts, it is important to acknowledge Indigenous people's self-determination regarding their traditions, knowledge, arts and cultural expressions (United Nations Educational, Scientific and Cultural Organization, 2009), as well as other cultural minorities' agencies in their own cultures. Within the ASAD network, there is an ongoing reflection on how art education considers the cultural background of Indigenous students and what kind of space is provided for them (Beer, 2023; Leddy, 2023). The AAE shows that the people of the North need to define the values and qualities of their arts themselves. While globalisation constitutes a threat that causes the loss of cultural diversity, decolonisation in art can counteract cultural homogenisation and promote sustainability transformation.

The need to decolonise culturally sensitive art education research has been highlighted by multidisciplinary collaborations in ASAD networks in the North. In the long run, we see the AAE as an initiative for curriculum reform and the decolonisation of the art education discipline itself. This is among the most important issues in art teacher training in the entire circumpolar North.

Ecocultural Revitalisation, Resilience and Sustainable Transition

Interest in the AAE initiative stems from its pedagogical potential to foster activism following the means of contemporary Arctic art. Discussion on Arctic sustainability (Fondahl & Wilson, 2017) and, later on, critical studies of Arctic sustainability transformation (Priebe et al., 2023) have served as the background of the AAE initiative's proactive activism. On the other hand, it has been shown that many environmental, social and political changes are inevitable and require Northern residents to adapt to new situations. Therefore, educational tasks also involve preparation for adaptation by strengthening resilience (Figures 10 and 11). By resilience, we do not mean passive adaptation, but rather adaptability to change. In the AAE, resilience is linked to the transformative continuity of traditions through ecocultural revitalisation.

Revitalisation is an important part of the AAE's positive view of the possibilities that art education offers to influence changes that promote more sustainable societies in the



Figures 10 and 11. Korinna Korsström-Magga's project seeks art-based methods for engaging northern youth in the conversation about the threat of climate change. Thoughts carved into reindeer antlers form an installation in front of the Sámi Parliament. Photographs: Timo Jokela, 2024.

sense Dewenhurt (2014) has pointed out. Interest in revitalising Northern ecocultural knowledge to improve cultural resilience is evident in several realised art projects (Din, 2019; Jokela & Huhmarniemi, 2022a). Considering the complex nature of Arctic ethnicity, ecocultural revitalisation should also be extended to multiethnic and non-Indigenous communities (Figure 12).

Ecocultural revitalisation itself draws attention to the AAE, even outside of education organisations. Arctic art that revitalises northern ecocultural knowledge, implemented within the ASAD network, has been adopted particularly within the social sector (Mikkonen, 2024), creative industries (Burnett, 2017) and responsible tourism (Kravtsov et al., 2022). Many of these examples show how, by building on the existing ecocultures in Arctic villages and towns, the intersectional skills and strengths of local people, and contemporary art and international collaborations, the AAE represents an alternative to top-

Figure 12. The village community gathered in the middle of the forest for the opening of the public artwork *Story of Kirkkokuusikko*. The art project with educational aims revitalises local handicraft skills and the tradition of storytelling related to the encounter between Christianity and the Sami culture of Kemi-Lapland. Photograph: Timo Jokela, 2009.

down and nationally coordinated curricula and development projects. The AAE is meant to strengthen cultural identities and foster hope in the Arctic, especially with youth. The AAE does not concern personal identities only; renewed cultural vitality is expected to contribute to economies as well as creative industries, which can employ many young people from the region (Jokela et al., 2022). In this sense, the AAE is a future-oriented approach aiming to contribute to Arctic sustainability transformation (Priebe et al.).

Conclusion

In this chapter, we use diffractive reading to identify the intra-action and negotiations of key elements related to the AAE. Although our method differs from traditional reviews, which reflects models and theories, the chapter highlights the entanglements of key concepts of AAE and the connection to discussion on Arctic sustainable transformation, as shown in Figure 1 – *New Genre Arctic Art education conceptualisation and implementation in practice depicted in steps* at the beginning of our article (Figure 1).

We also emphasise the intersection and intertwining of Northern and Arctic nature and cultures – referred to as ecoculture. This examination was linked to the region's rapid environmental changes or the so-called megatrends that impact its social and cultural structures. The vulnerability of the region's nature and cultures, particularly Indigenous cultures, underscores the necessity of considering these factors in art education.

In the context of the AAE, posthumanism is considered an agenda for change. The central focus of the posthumanist reorientation was the prevailing environmental relations in ASAD art education activities, which have traditionally been based on place-based pedagogy derived from humanistic research. Within the context of place-based art education, especially in environmental and community art in the Northern context, the concepts of new materialism and intra-action associated with posthumanism have been prominently featured. In the AAE, these concepts reveal how the relationship between art and crafts in northern ecocultures blurs the boundaries created by Western culture in terms of art, design and crafts education. The new materialist perspective adopted in Arctic art brings forth the agency of ecoculture and directs the intentions of AAE activities. This underscores the need to transcend interspecies boundaries and understand the connections between humans and other species.

The conceptual opening of the AAE indicates that the theory critiquing and redirecting Western knowledge and art conceptions within posthumanism is an effective tool for developing art education in line with the demands of the time and especially in

terms of Arctic sustainability transformation. This is not an entirely new way of thinking, however, as the AAE and the characteristics of posthumanism in the context of NN and ASAD art education have gradually evolved through placed-based and communal activities closely interacting with the ecocultures and multiethnic communities of the region. In art-based activities related to Northern ecoculture, especially in community and environmental art, the practices of knowing and being are not ontologically and epistemologically separable. Instead, they mutually influence one another.

This chapter evidences that ASAD, a place-based approach that stems from humanism, led to encounters that required a cultural sensitivity to the area's Indigenous cultures. Concepts familiar in Indigenous cultural studies, such as decolonisation, revitalisation and resilience, have become integrated into the practices of ASAD's art education and work, such as the theoretical foundation of the AAE. From the perspective of posthumanist knowing-with, the undercurrent of Arctic cultures – the spiritual and animistic relationship with the surrounding nature, animals, plants and soil, as well as land-based learning – leads to a critical reflection on the contributions of Indigenous and Northern knowledge to the AAE's efforts towards ecocultural sustainability and ultimately a sustainable transition.

The Northern and Arctic regions, delicately vulnerable and threatened by megatrends, provide a framework for the AAE's posthumanist reorientation, revealing many global and planetary issues – cognitive, spiritual, corporeal and ethical – in small communities but also appeared in international phenomena through ASAD's circumpolar cooperation. The AAE is connected to ecoculture; places and communities challenged the universal art education ideal inherited from the Enlightenment era that separated art, design and craft and distanced art from people's everyday lives. Simultaneously, the AAE is committed to the region's ecoculture, and Northern and Indigenous ways of knowing have subtly shifted towards chasing the goals of posthumanism, embracing forms of knowledge involving animals, plants and even the land.

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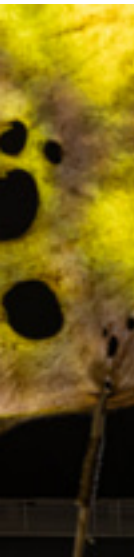

Shifting Ground: Art Exhibition as Informal Pedagogy on the Changing Arctic

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The chapter addresses the urgent need for innovative teaching and learning models that create and examine human-land relationships as collective expression. It presents how artists and art educators in northern regions of Canada and Finland address the impacts of climate change and natural resource extractions. Their art practices, which include aesthetic, material, interactive, time-based, sound, and performance elements, as well as viewer engagement in exhibitions, serve as a means to advocate for social, cultural and environmental justice. These regions share the urgency of landscapes in distress impacted by climate change, challenging distances of remote communities, land (and water) use, histories of colonialism and questions of sovereignty. Many local environmental conflicts are ongoing in Northern Finland and Canada, some of which have persisted for decades, causing community members to experience uncertainty and frustration. Artists and educators reflect on and respond to land use, mining, forestry and related conflicts that determine the region's possible future and life. They also are optimists in their promotion of positive change.

This chapter considers the multiple perspectives on New Genre Arctic Art as informal education. In Arctic and northern rural and remote communities, negotiating vast distances and lack of infrastructure for formal education for secondary and post-secondary students results in questions and challenges regarding access to formal art education. Theories and practices that champion alternatives, such as new genre art education, with its focus on relational aesthetics (Bourriaud, 2002) and socially engaged art (Thompson, 2011; Kester, 2004; Lind, 2010), community, collaboration, interactivity, and local contexts including heritage practices, have ample benefits. In his book, Bourriaud (2002) defined relational aesthetics as a set of artistic practices that take as their theoretical and practical point of departure the whole of human relations and their social context. He regarded art as information exchanged between artists and viewers. In this sense, the artist gives audiences access to power and the means to change the world.

A recent major exhibition, *Shifting Ground – Muuttuva maa* (SG) in Rovaniemi, Finland, at the Rovaniemi Art Museum, and a public symposium in which the artworks

were discussed, was an example of a collaboration between a research and creation project, the Rovaniemi Art Museum and the Artists Association of Lapland. For the participating research creation artists from Canada and Finland, the exhibition resulted from a five-year interdisciplinary and experimental art and research project called "Shifting Ground: Mapping Energy, Geography and Communities in the North", with the support of the Social Science and Humanities Research Council of Canada. The project explored changes in communities in northern and Arctic regions, aiming to link international artists and researchers to stimulate new thinking and action around issues related to resource extraction, climate change impacts, and social and environmental adaptation to foster resilience. For the artists of the Artists Association of Lapland the exhibition was an opportunity to respond by way of their art practices, to these Artctic conditions through a local lens.

In introducing the exhibition as a platform inviting contemplation and critical exchange, as well as descriptions of artworks by some of the Canadian and Finnish artists, this chapter aims to address some of the research questions presented in the research plan: How might art provide opportunities for pedagogical encounters better attuned to local particularities and global concerns? How do visual artists synthesise, analyse or subvert representations of land and place through artistic praxis across the global North? The chapter underscores the benefits of artists, educators and the museum collaborations, sharing knowledge and knowledge dissemination strategies, and engaging in informal pedagogy through art.

The first author of the chapter, Beer, was the lead of the artistic research project, the exhibition's co-curator, and one of the artists. The second author, Huhmarniemi, participated as an artist and representative of the Artists' Association of Lapland in the exhibition's planning phase. Both authors are artist-researchers and educators in higher education and are actively developing a new genre of Arctic art education to serve local communities and global sustainability goals.

In this chapter, we reflect on the SG exhibition. The research approach follows principles of arts-based action research (ABAR), in which interventions, such as the SG, are discussed and reflected as an evaluation of development. ABAR aims to enhance professional practice through reflective analyses of actions and their results (Jokela et al., 2019). We consider how the artworks in the SG exhibition operate within a framework of critical pedagogy and pedagogical encounters in concert with the art museum's expanded role as a forum for informal education, contributing to civil engagement and public pedagogy. The chapter's research data consists of the exhibition's artworks, curators' and

artists' statements. The authors discuss the artworks, considering their transformational potential in addressing issues of local concern and their educational qualities.

Informal Education Through Art to Leverage Sustainability

In her essay "Land as pedagogy: Nishnaabeg intelligence and rebellious transformation", Indigenous scholar Leanne Simpson (2014) is critical of formal, Western academic education. She rejects requirements to "fit in" and instead, through stories, asserts land as pedagogy, underscoring the cultural belief that *land-based education* plays a primary pedagogical role within and for Nishnaabeg culture, Indigenous knowledge, and resurgence. Several artists in the exhibition have absorbed and extended these lessons as they enact their cultures and experiences through land-based artistic and educational practices.

Green (1999, p. 80) theorises that "Reconceptualizing art education as cultural criticism is a social-based pedagogy that can be fostered by the inclusion of new genre public art... informally with/in the community". Green (1999, p. 80) supports the advance of "projects that are socially constructive, and recognise art making as an intellectual, scholarly endeavor", and, along with Sholette et al. (2018), promotes the potential of art as advocacy. Green (1999, p. 83) continues, "New genre public art education is a pedagogy that responds to contemporary concerns and functions as social activism". Also, Gablik (1995) suggests viewing art as participation, where the focus shifts from individual expression to fostering social connections and healing the environment. She encourages artists to adopt new activities, mindsets, and roles, moving away from the principles of modernism towards active involvement in social change.

Informal art education is needed in rural and remote communities in the Arctic, where formal art education is not readily accessible (Corbett, 2016; Beer, 2023) and may not adequately serve local communities, for example, by not including anti-colonial education (Rallis et al., 2024). New Genre Arctic Art Education is well positioned to expand, intertwine, and build on community heritage or traditional artistic practices (Härkönen et al., 2018) by introducing diverse media and approaches while recognising the importance of local contexts. It fosters contemporary community-based, socially engaged educational practices as relational aesthetics, (Bickel et al., 2011; Bourriaud, 2002; Helguera, 2011) contending that art (and pedagogy) is a state of encounter promoting dialogue, building alliances and potentially provoking efforts toward social and environmental justice. According to Kester (2004), dialogical approaches to art practices do not come at the expense of objects, images, tradition and material practices, that Bennet, (2010)

also refers to. In situating art and knowledge creation Kester states; "museum-based art and projects developed in alternate environments are equally productive sites" (Kester, 2004, p. 189).

Informal education involves learning in everyday life, often spontaneously, through activities such as reading books, watching documentaries, participating in community events, and interacting with others. Informal education provides opportunities for lifelong learning and personal development. Informal education through contemporary art can be gained when visiting art galleries and museums, participating in community arts, and interacting with artists directly. Many scholars (Avril, 2022; Hudson Hill, 2020; Yakamovich & Wright, 2021) explain how contemporary art exhibitions have the potential to evoke experiences that encourage promoting sustainability, repair, resilience and new directions for more equitable futures. Through affect and aesthetics, contemporary art can serve informal education because it can provoke thought, challenge perceptions and conventional values, engage in dialogue, and present conditions featuring spaces for contemplation, images, objects, and events to reflect on various social, cultural, and political issues.

Museums and art galleries no longer function primarily as keepers of valuable cultural collections. These institutions are increasingly engaging ethically with civic society on important issues. They make significant contributions, including initiating and supporting education and discourse with attention to ecology, society, culture, and institutional change (Clover et al., 2016). Art educators globally engage with environmentally and socially just practices, diverse lived experiences, and pedagogic pivots to create impactful change through transformative exhibitions (Sinner et al., 2024).

Arts' potential to leverage sustainability transitions lies in its capacity to question commonly accepted mindsets, and to provide alternate (non-textual) means of learning, teaching, and unlearning. In the case of climate change in the North, rather than empirical data sets and often problematic satellite measures and mapping from afar, artists can provide alternate ways of knowing (Beer & Saur, 2021). Meadows (1999) has given examples of mindsets that hinder systemic change towards sustainability, such as the belief in the primacy of economic growth, seeing nature primarily as a stock of resources and land as something one can own. Meadow (1999) has also described how changes in mindsets can be easily turned on an individual level; they just demand clicks in the mind and new ways of seeing. However, on the level of society as a whole, mindsets are more challenging to turn (Meadows, 1999).

Visual art, along with performances and other art forms, can play a crucial role in forming these philosophical ways of thinking and bringing them to a broader, intergen-

erational audience. In the Arctic, arts can be seen as having a role in discussing these ways of thinking in the local contexts, which differs from urban lifestyles. Local ways of co-existing, knowing and collaborating with rivers, lakes, and mountains are themes that artists can tackle when considering humans' position as part of nature (Huhmarniemi et al., 2021). Contemporary art in the Arctic dialogically interrogates, challenges and feeds philosophical thinking. As Jokela et al. (2024) argue, art museums have a role in the global rethinking of non-human nature and promoting equal and responsible human-and-other interactions. With this in mind, in sparsely populated and remote northern Finland and Canada, where communities and ecologies are especially dynamic and vulnerable, making these concerns visible, amplifying the need for practices of care through visual art and its dissemination in museums is especially relevant.

Contemporary art curators globally have shown interest in Indigenous and local ways of knowing about ecosystems and the impacts of climate change. As Decker (2020) argues, climate change is a central narrative of our time, compelling curators and museums—known for their strong community ties and focus on locality—to play a pivotal role. By fostering a diverse community of thinkers, artists, and activists, art museums elevate Indigenous and non-Western knowledge in climate discussions, and to remain impactful, art museums must engage with their audiences and address pressing civic issues, envisioning potential futures (Decker, 2020). Decker (2020) presents the need for changes to serve better the communities museums represent. She is the Director of the Anchorage Museum in Alaska and thus writes from a similar Arctic point of view as this research is done.

Art can evoke emotions and raise unconventional questions, thus stimulating transformative learning. Therefore, institutions such as art galleries and museums can be used as platforms for dialogue and learning about climate change (Hudson Hill, 2020), which can have a powerful effect. Unfortunately, many regional art museums are slow to shift long-term Western and modernistic views of art as separate from or exclusive of societal and political engagements and agendas. This results in little focus on environmental and political issues in regional art museums. However, there is promising research about art, the gallery and the museum's role in involving visitors in discussions on climate change and levering sustainability transitions through art (Avril et al., 2022; Hudson Hill, 2020). Curators have a crucial role in making and philosophically framing these exhibitions. As Avril et al. (2022) explain, art museum exhibitions can serve as a space for knowledge creation, where both informed stakeholders and new visitors can learn from individual artists' experiences and synthesise new insights from a collective array of artworks, a feat not easily achievable elsewhere.

Abson et al. (2017) studied leverage points for sustainability transformation and argued that sustainability interventions mainly target weak leverage points. They conclude that there is an urgent need to focus on transformational sustainability interventions centred on reconnecting people to nature, restructuring institutions, and rethinking how knowledge is created and used to pursue sustainability. Arctic naturecultures, in which humans and other nature form an intricate web of life, can inspire global paradigm changes. Donna Haraway (2008) coined the term *natureculture* to describe the inseparable and co-constitutive relationship between humans and the natural world, where culture and nature are not distinct entities but deeply connected and mutually shaping each other. Abson et al. (2017) also present that the relation between theoretical understandings of transformational changes and the practical action undertaken to effect such changes should be researched more. Research on contemporary art and its potential to effect change is also needed as a leverage point for sustainability transitions.

Discussing the Artworks and Artists' Statements

The *Shifting Ground – Muuttuva maa* (SG) exhibition's co-curators were Ruth Beer (first author of this article) and Ulla Viitanen, curator from the Rovaniemi Art Museum. All the participating artists in the exhibition were Ruth Beer, Maureen Gruben, Tsema Igharas, Lindsay McIntyre and Jeneen Frei Njootli from Canada; and Lola Cervant, Maria Huhmarniemi, Timo Jokela, Eemil Karila, Miia Kettunen, Elina Länsman, Mari Mäkiranta, Marjo Pernu, Marjo Pitko, Simi Ruotsalainen & Johanna Ruotsalainen, Antti Stöckell, and Seija Ulkuniemi from Finland. The exhibition included works in many mediums, including performance, video, painting, photography, multi-media installation, textile practices and interactivity with augmented reality.

The exhibition was accompanied by a symposium attended by exhibition artists, artists from the community, students, faculty members of the University of Lapland Faculty of Art and Design, museum professionals and the general public. Presentations included from the director and the curator of the museum, selected exhibiting artists and a lively Q + A period with the audience. The invited speakers expanded on the contexts of their art practices including their cultural and professional affiliations as artists, educators, researchers and concerned citizens responding to industrial and climate impacts and transitions in their communities. The artists discussed their use of materials and production processes in the creations of their artworks in relation to their ideas with regard to the SG exhibition themes. All of the speakers noted the positive potential of continu-

Figure 1. Timo Jokela, *At the River – Stepping in the Flow*, installation and video, 2024. Photograph: Tatu Kantomaa / Rovaniemi Art Museum, 2024.

ing to build artistic, educational and professional networks across the North. Additionally, the representative from the Canadian Embassy in Finland presented a talk at both the exhibition's opening and the symposium, at which he emphasised the importance of the Canada-Finland SG exhibition collaboration in strengthening Arctic ties through art events and dialogues..

Timo Jokela plays a vital role in the SG exhibition as both a participant and co-principal investigator in the SG research-creation project. His installation, "At the River – Stepping in the Flow," reflects his connection and engagement to the northern environments and naturecultures of Yukon, Canada, and Lapland (figure 1). Growing up on the banks of the Ounajoki River, Jokela incorporates found branches, metal industrial components, and sculptural elements from traditional boat building and fishing tools into his art. His work is informed by his history with the river, including his activism in the 1970s and 1980s, which contributed to legal protections for the Ounasjoki River in 1982. Despite these protections, challenges persist, such as the impact of a Canadian-owned

gold mine on the river's health. Jokela emphasisesemphasises the ongoing legal and environmental struggles faced by northern colonised regions like the Ounas River, highlighting the need for clean, free-flowing waters for wildlife and human communities.

Jokela has reflected on his environmental and place-based art in his research, describing how he has sought to renew and conceptualize art and art education to respond to the changing environment and culture in the Arctic (Jokela & Hiltunen, 2023; Jokela & Huhmarniemi, 2022). The background for "At the River – Stepping in the Flow" was the similarities between Finnish and Canadian natural ecosystems, species, and traditional naturecultures, such as ice fishing, which connects humans with rivers, as Jokela mentioned in the SG seminar. Also, the threats to nature and colonisation strategies by industries are shared in these regions in Lapland and Canada.

Miia Kettunen's installation, "Conversations with Water," examines the environmental impact of forest drainage—a forest management method causing erosion, sediment transport, eutrophication, and increased aquatic greenhouse gas emissions, exacerbating climate change (figure 2). Using dual projections, one on a wall and the other on floor, Kettunen vividly portrays these effects, symbolising water's interaction with altered landscapes. Inspired by observations at Lake Kalkiainen in Lapland, Finland, Kettunen explores the personal and communal impacts of environmental degradation through the experiences of residents Juha and Liisa. By integrating their stories with artistic elements, Kettunen prompts visitors to reflect on environmental changes and recognise local conservation efforts. Her installation underscores the critical state of ecosystems impacted by forest drainage and highlights the human dimension of environmental issues, fostering more profound engagement with ecological conservation.

Maria Huhmarniemi's four handmade embroideries reflect on the proposed iron ore mine in the village of Hannukainen, Western Lapland, near a national park. Using traditional blanket embroidery, she intertwines symbols of protection and danger to evoke the region's natural beauty and the threat posed by the mining project. Some incomplete patterns suggest uncertainty about the mining project's future (figure 3). Adjacent to the nature tourism hub of Äkäslompolo, where environmental concerns run high, the proposed mine has sparked polarised debates. Huhmarniemi advocates for nature conservation and opposes the mine's development through art and community art events (Huhmarniemi, 2021; Huhmarniemi & Juhola, 2023). Her embroideries depict the potential hazards and uncertainties associated with the project, emphasising the cultural and environmental values at stake. Through her embroidery, she imagines an alternative future where the mining plan fails, urging collective action to prevent its realisation. She

Figure 2. Miia Kettunen, *Conversations with water,* FHD video work, 2024. Photograph: Tatu Kantomaa / Rovaniemi Art Museum, 2024.

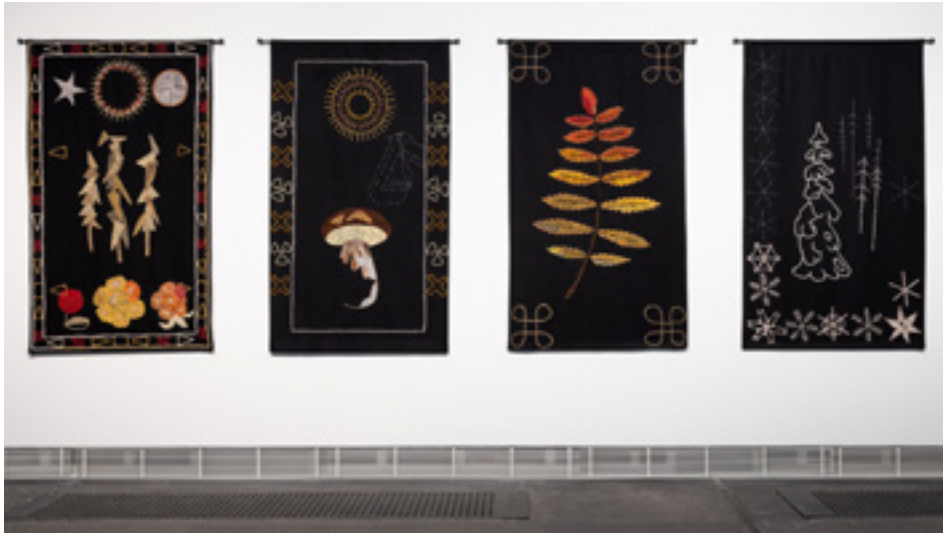

Figure 3. Maria Huhmarniemi, Series Hannukainen mining plan, 2023–2024. Photograph: Tatu Kantomaa / Rovaniemi Art Museum, 2024.

did the embroideries as part of the Embroidered Stancen collective that brings together artists, crafters and activists to arrange gatherings and participate in social and political discussion craft (Cervantes & Huhmarniemi; Kovero & Kravtsov).

Four wool embroideries were shown in the exhibition. The first one on the left (Figure 3) is titled "Too Little Space Left for Hazard Pictograms" and illustrates the nature of Lapland framed by suggestive signs of danger, such as radiation risk. The next one, "The Plan Never Completed," refers to the iron ore mining plan collapsing due to its risks. The "Holy Rowan by the Saivo Lake" underlines the cultural values of nature, while the signs in the corners of the blanket, looped square symbols, are used as signs marking cultural sites. Before these symbols were used as protection from bad luck and evil spirits. The last one, "Uncertainty," refers to the uncertainty of the mining plan and future winters due to climate change. Huhmarniemi got inspiration from ideas of future research that claim how our future visions may come true: if we believe in something, we start to act according to it and make a vision come true. Thus, Huhmarniemi wanted to imagine the iron ore mining plan failing and advocated that it was still a plan and that people could stop the project from progressing.

Figure 4. Tseme Igharas, *Kets'ok Enish Cho (Dancing-around, Huckleberries)*, 2024 Copper vessel, MP4 video file, projector mask. Photograph: Tatu Kantomaa / Rovaniemi Art Museum, 2024.

Tseme Igharas, from Canada, connects with her Indigenous Tahltan heritage through *Kets'ok echish chō*, an installation featuring a waterkeeper (a ceremonial urn) crafted from a single sheet of copper and modelled after traditional Tahltan birch bark baskets (figure 4). The urn was strategically placed in a space painted blue-red to evoke crushed berries. A film of foraged huckleberries being prepared for sustenance, was projected from the ceiling onto the surface of the water contained in the urn below it. The reflected light cast outwardly, dispersing red and green light onto the ceiling to mimic the Aurora Borealis, a natural spectacle significant in Tahltan culture. The installation celebrated traditional gathering practices and critiqued the environmental and cultural disruptions caused by industrial mining in Canada's northwest. Copper is the most plentiful and desirable ore mined in Tahltan territory.

In her statement, Igharas articulates her art's perspective and purpose: "In my artwork, I interrogate Western value systems. I show other forms of worth and value. I question the kinds of mining and geological exploration operations that might contaminate the specialised environments in Tahltan nation territory." This critique is woven into her installation, advocating for protecting Indigenous lands and practices

and emphasising the broader themes of interconnectedness and the value of natural resources. Her work resonates with the shared experiences of Indigenous and Northern communities, serving as a meditation on water as both a life source and a cultural symbol, deepening the dialogue about conservation and sustainable practices in Indigenous territories.

Lindsay McIntyre's installation delves into her Caribou Inuit heritage in Canada, addressing themes of cultural preservation, environmental impact, and personal identity (figure 5). Utilising a dual-projection setup, she employs a raw caribou hide, stretched across the space of her installation. Her film, projected onto the hide of the caribou that she shot, and learned how to prepare and process. Since the traditional skills of caribou hunting were not passed down in her family, McIntyre embarked on a journey of cultural reconnection, learning from a local hunter in Yukon. Her film visually, and through sound, narrates the experience. Holes in the hide attest to her inability to properly prepare the hide, symbolising cultural disconnection and displaying the painstaking process of hide preparation. Her artwork links traditional practices alongside contemporary challenges. Another projection depicts images of the Yukon landscape and environmental changes affecting caribou habitat. McIntyre's narrative extends to the broader implications of climate change on caribou and Indigenous communities, emphasising the interconnectedness of environmental shifts. Through the innovative use of traditional materials, she metaphorically embodies the ongoing struggle to maintain and adapt cultural traditions in a changing world.

Tuktoyaktuk-based, Inuvialuk artist Maureen Gruben explores themes of material and cultural relation. She addresses the transformation of Arctic landscapes impacted by climate change. Filmed in Tuktoyaktuk, NWT, *Stitching My Landscape* (2017) and *Nuna* (2023) (figure 6) are photographs of performances that reflect on our connection to environment through poetic engagements with the Northern landscape to deeply consider our relationship to place.

Stitching My Landscape documents the artist "stitching" red broadcloth fabric through ice fishing holes spread across 300 metres of the Beaufort Sea, forming a zig-zag shape reminiscent of hand stitching. The artwork comments on environmental disruption and repair. The red colour echoes her memories of traditional seal hunting with seal gut stretched across the snow. The work raises important questions of environmental and Indigenous cultural preservation. Nuna, meaning "land" in Inuvialuktun, repurposes the broadcloth to form a large red cross. As a universal symbol for aid, the form repre-

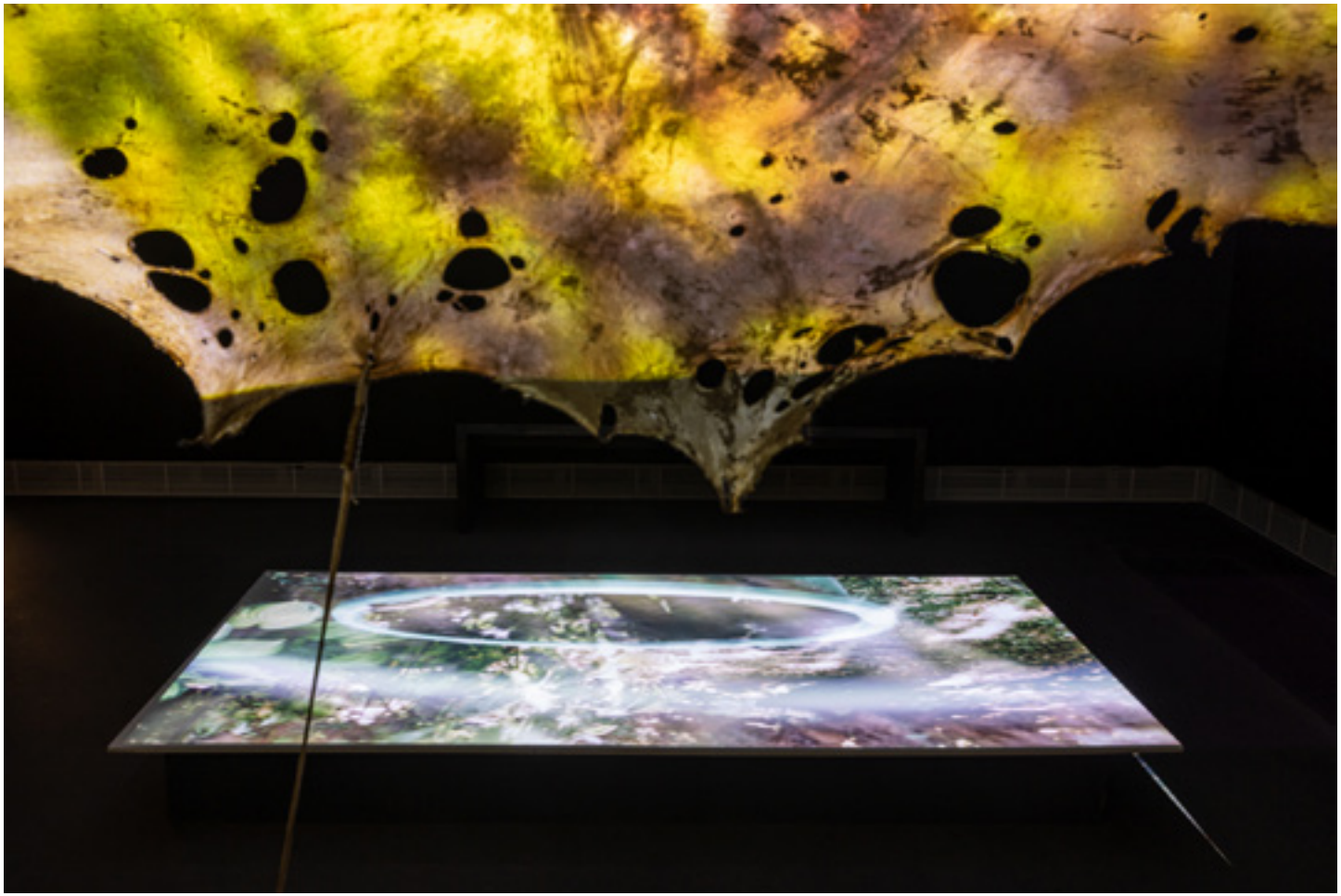

Figure 5. Lindsay McIntyre, *Tuktuit*, 2023–2024, Photograph: Tatu Kantomaa / Rovaniemi Art Museum, 2024.

Figure 6. Maureen Gruben, *Stitching My Landscape,* 2017 and *Nuna,* 2023. Photograph: Tatu Kantomaa / Rovaniemi Art Museum, 2024.

sents a call to action, signalling the impending urgency to actively visualize and address how human behaviour disrupts the climate.

These artworks create a powerful dialogue between traditional practices and contemporary ecological challenges that merge artistic expression with environmental awareness. In producing her artwork, Gruben actively engages the Tuktoyaktuk community especially its youth, in meaningful ways by interesting them; teaching and learning, about contemporary art practices, traditional perspectives, appreciation of place, and care for the land.

In the film *Being Skidoo*, Jeneen Frei Njootli takes an intimate look at the North by considering the practice and aesthetics of reciprocity in their Vuntut Gwitchin community of Old Crow, Yukon. Following the Vuntut Gwitchin people's tradition of dressing their sled dogs in embroidered blankets, Frei Njootli creates ceremonial garments for snowmobiles, honouring them as means of and partners in transport (figure 7). The video offers a look at intimate and connected relationships with the North – the elements, the land, its animals and one another.

Frei Njootli, a co-founder of the artist collective "re-matriate" (Kindsfather, 2022), employs a diverse artistic approach encompassing performance, sound, textiles, and collaborative co-creation. As exemplified in "Being Skidoo", and reflecting engagement with land-based knowledge and traditional practices, communal heritage skills are shared in the making of the embroidered blankets. In collaborating with elders, community members, and youth, Frei Njootli's art embodies communal experiences and fosters intergenerational connections rooted in their territory. Frei Njootli's scholarly approach, self-described as "feral scholarship," embraces a free-ranging exploration of knowledge outside conventional academic frameworks, deeply rooted in Indigenous sovereignty and decolonisation. They emphasise the complex identity dynamics of Indigenous peoples navigating contemporary worlds, rejecting a simplistic binary view. Instead, they embrace the multiplicity of worlds, drawing from their experiences navigating between large cities and Arctic home community. This nuanced understanding informs their art, reflecting the layered experiences that shape their community's interactions with the world.

Through mixed media art, Ruth Beer combines artistic practice and curatorial insight, exploring ecology, geography, and communities. Her artwork, "Oil and Water", is comprised of two photographs printed on canvas (figure 8). Woven together to form a tapestry the contrasting images of the pristine waters of the Haida Gwaii archipelago and the materiality of black oil highlighting the potential of environmental hazards

Figure 7. Frei Njootli, *Being Skidoo*, 2017, Video 9.52 minutes.

like oil spills from ships en route close by, carrying oil to market. Haida Gwaii's ecological significance and Indigenous heritage provide a rich backdrop for her exploration. The artwork incorporates augmented reality. Flames slowly appear emerging from the intersections of the weaving's images of oil and water presenting viewers with a landscape "on fire", refecting the effects of fossil fuel extraction, climate change, and wildfires in Canada, and fostering engagement with vulnerability and environmental issues.

As the curator of the Rovaniemi Art Museum and co-curator of this exhibition, Ulla Viitanen highlights the museum as an educational hub where art inspires and provokes thought. She observes that visitors typically arrive with open minds, eager to absorb new ideas and deeply engage with the displayed themes. Viitanen's curation expands the audience's knowledge about climate change and enhances their existing views of the world. She champions the museum as an inclusive venue where individuals from various backgrounds can equally appreciate and learn from the artworks. Viitanen said the exhibition has spurred significant conversations and fostered community experiences. It has been engaging for visitors, allowing them to discover new insights and discuss the artistic differences and similarities between Canadian and Finnish artists.

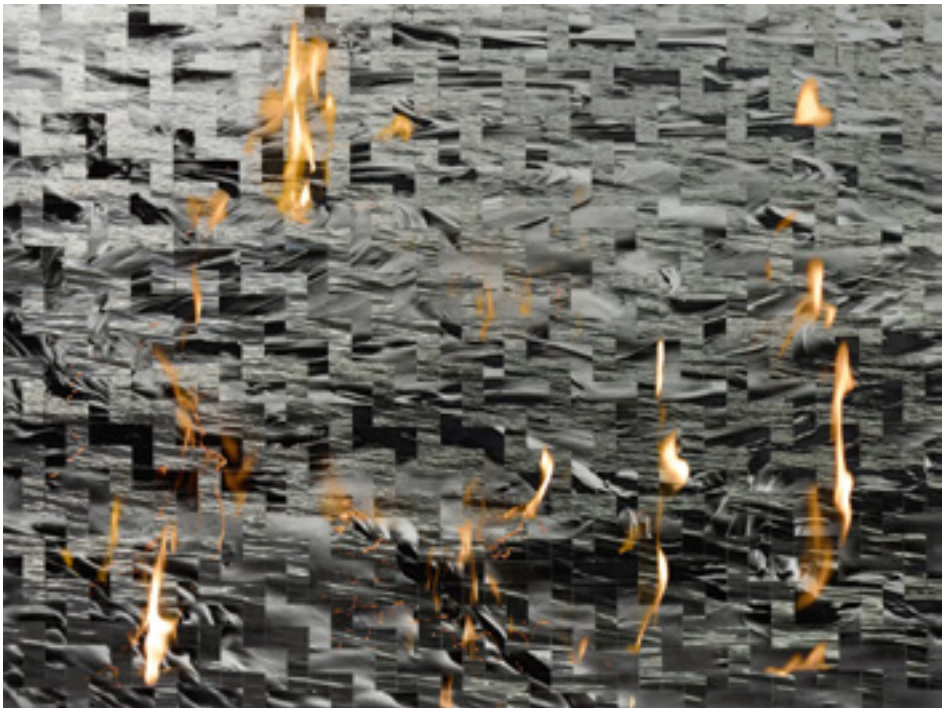

Figure 8. Ruth Beer, *Oil and Water*, 2023–2024. Photograph: Ruth Beer / Rovaniemi Art Museum, 2024.

New Genre Arctic Art as Informal Education

SG artists are engaged with community members in the processes of developing their ideas and producing and presenting their art work. An important strategy for many of the artists has encompassed a research, or learning approach whereby developing relationships with others, for example, local activists, educators, elders and knowledge keepers has been crucial to their work. Collaboration has also been at the forefront of many of the works presented. These collaborations include other artists and also exchanges with others, for example, documented informal conversations with community leaders, fishers, people involved in the legalities of industrial, mining, and other contributions from local community members who share skills and deep local knowledge of living

on the land. Many of the SG artists who have become immersed in the problematic ethical stance of the commodification of land and water and its consequences to climate change and sustainability absorb these concerns, along with aesthetic considerations, as essential elements of their artwork. Numerous artworks focus attention on revitalising cultural and material heritage ways of knowing. The majority of the exhibiting artists are also art educators sharing their knowledge with youth, graduate and undergraduate students, guiding and nurturing diverse local and global perspectives of future artists and art educators on subjects and issues embedded in the SG exhibition,

The project, which collaborated with artists and educators in the northern regions of Finland and Canada, illustrates that art, through its aesthetic and interactive engagements, can serve as a transformative educational tool. It encourages reconsidering established paradigms and promotes a more holistic and inclusive view of our environmental relationships. This underscores the importance of informal education in remote and rural contexts and affirms the role of art as a vital agent in advocating for social and environmental justice.

Recognising the constructive potential of artistic creation, New Genre Arctic Art is informed by theories of socially engaged and relational aesthetics, northern and Indigenous ways of knowing and relationships to the land and situated and embodied knowledge. This approach encompasses a broad spectrum of research that explores artistic practices' ability to mobilise alternative representations of complex issues and lived experiences. It aligns with the pedagogical turn in contemporary art (Podesva, 2007; Camnitzer, 2011), whereby educational learning strategies are pursued in informal sites (Rogoff, 2010). It draws on traditions of artmaking and contemporary site-determined practices to promote change, including more sustainable natureculture relations (Doherty, 2004; O'Neill, 2011; Kester, 2011; Sholette et. al, 2018), helping to better understand place (Lippard, 1997; Simpson, 2014; Martineau & Ritskes, 2014) in the midst of unprecedented environmental change (Davis & Turpin, 2015). This integration aims to deepen the understanding of place amid unprecedented environmental changes, emphasising the necessity for art to reflect and actively participate in shaping future ecological and cultural landscapes and contribute to informal education connected to these matters.

Conclusion

The SG exhibition provided a platform for creative encounters with the everyday experience of changing ecologies in rural and remote communities in Finnish Lapland and

northern Canada. The art exhibition and this chapter demonstrate the powerful role of art in engaging and educating communities about environmental sustainability and cultural resilience, particularly in Arctic regions affected by climate change and resource extraction. The exhibition showcased artworks that have – in the phase of the creation of art in the landscape and with community members – transcended traditional educational frameworks, fostered critical dialogue, inspired action, and deepened connections to the land. In the case of SG, New Genre Arctic Art served as informal education through creating art as part of naturecultural activities. The exhibition, this chapter, and other narratives of the artworks expand the educational impact of art. However, research on how exhibition visitors reflected on the exhibition is beyond the scope of this chapter, as we do not have research data on visitors' experiences.

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Pathways to go Beyond the Borders of the Immediate: Siunissaq

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In Greenland and the Arctic, the social problems are distributed very unequally in the population. In small communities, they are often very visible and can affect the social life situation of all. High rates of violence are a challenge to some areas in the Arctic, including Greenland. Violence divides a community, creates fractures, and breaks links between people. Violence fragments and separates. The same applies to high levels of social challenges, such as sexual violence, drug and alcohol abuse, suicide, bullying, harassment, and neglect. These are social phenomena that break social connections and create networks around problems rather than cohesion, solutions, and empathy. From a social perspective, such networks are a form of non-coherence, replication, and implosion in rigid and repetitive fragmentation patterns.

The traditional sharing system has been undermined, even though collective forms of solidarity in the Inuit community are becoming revitalised and echoes in a vibrant culture of identity-building literature, symbols, images, events, music, and theatre, and other ways of art. At the grassroots level, this is also reflected in young people's call for more sense of community, more social cohesion, more mutual respect, more cooperation, more peaceful conflict resolution, more care and more love and better economic and educational opportunities for all (Berliner & Enghoff, 2019).

The situation in Greenland, especially for the educationally and economically less favoured young people, is in some ways like that of young Inuit in other Arctic areas and, to some extent, young people among Indigenous peoples in the world (Snodgrass, 2013; Valeggia & Snodgrass, 2015; Kirmayer et al., 2011). While many children and young people thrive, many also suffer from social and mental challenges. Too many young people experience feelings of low self-esteem, being marginalized, and sadness.

There is a significant degree of economic inequality and thus relative poverty. Relative poverty encompasses income and access to other societal benefits, demonstrating that people have varying levels of citizenship with different access to civil and social rights.

However, there is also a vibrant culture characterised by prominent levels of commitment and great creativity. A self-determined culture is emerging, rooted in the strengths of the living culture, including competence, mutual respect, security, trust, and social

Figure 1. Untitled photo taken by young participants in Siunissaq workshop, Nanortalik 2017. © Siunissaq.

support. Siunissaq is part of this development, contributing to social resilience and sustainability at the community level through psychosocial and aesthetic, i.e., community art activities for children and young people (figure 1).

In this chapter, we will present the Siunissaq project in Greenland and its art, locality, and identity activities for young people as a project that challenges borders of fragmentation and discrimination by creating a psychosocial and community art education for young people in local communities, aiming at building an inclusive community with mutual appreciation, support, and equality, which are core to social sustainability. The Siunissaq approach combines psychosocial principles of shared learning through dialogue and peaceful conflict resolution with aesthetic expressions and art (Fairey, 2017; Premaratna & Bleiker, 2016; Stephenson & Zanotti, 2016). The goal is to build communities with social responsibility, Human Rights for all, environmental stewardship, and

democracy. The learning dissolves discrimination and inequality by opening spaces for freedom of expression, including art as a way of wonder, felt sense, shared experience, and playing creatively with materials to build new images and awareness (Hammond et al., 2018). Examples of Siunissaq activities include among others: "the safe group" where we remember experiences of feeling safe in groups and then performing the principles of a safe group in the here-and-now; making sculptures of our body; and taking portraits of the participants and of people in the community. We have described the activities in Berliner and Enghoff (2019) and De Casas Soberón and Berliner (2018).

The research method applied here is storytelling and reflection by the participating artists and psychologists in the project. It is action research, as this reflection is part of the project's further development. The research is a double loop of learning. Building on the interviews, we reflected on the principles of the project in the light of theories of art, community, and social learning.

The project (figures 2–6) integrates the locality and the globality by bridging localities in the Arctic through a durable link to three other Arctic art-community-sustainability projects in the Nordic Arctic, including the University of Lapland, Umeå University, and Nord University, Bodø. These projects are part of a continuous cooperation between the UArctic Thematic Network: Arctic Sustainable Art, Design and Visual Culture and the Children in the Arctic. The figures 2–6 are documents from the project Sustainability Portrait Project—Art, Location, and Social Responsibility for Sustainable Development in the Arctic.

Association Siunissaq

The project Siunissaq has existed since 2013. Siunissaq means future. It is a psychosocial and community-art project aiming to build social resilience with children and young people in different localities in Greenland (Berliner & Enghoff, 2019). The concept of social resilience originated from climate change research, is holistic and systemic (Keck & Sakdapolrak, 2013) and is closely related to sustainability. In the system, there are many agencies, including human and non-human, and information and transformations through intra-actions and networks.

Siunissaq is a learning concept created together with young people in Greenland. It constitutes educational social learning through co-creation in workshops of 4–5 days of duration with psychosocial activities and aesthetical expressions. Series of four workshops a year ensure continuity and learning. Siunissaq builds on baselines, which we did in local

Figure 2. A young participant in a sustainability portraits workshop makes a portraits together with two members of the community. Maniitsoq, 2023. © Siunissaq

communities at the start of the project. The baselines showed that many young people in Greenland experience (1) low self-esteem; (2) challenges in talking about feelings; (3) diffuse knowledge of the body and sexuality; (4) lack of trust and mutual respect between young people, and adults; (5) low access to educational opportunities; and (5) challenges in resolving conflicts peacefully and constructively. Thus, Siunissaq set out to build a learning space that (1) increases self-esteem; (2) opens for talking about social taboos and one's own feelings; (3) gives knowledge of the body and sexuality in a framework of sexual and reproductive rights; (4) builds trust; (5) opens pathways to education, jobs, and creativity; and (6) gives skills of peaceful conflict resolution. From these first baselines, we have developed our approach to become less descriptive and less problem focused.

Siunissaq aims at peacebuilding at the local level, the microlevel, i.e., as micropolitics, meaning in the direct connectivity between people in a situationist perspective. It

is peaceful conflict resolution at the interpersonal and group level as communication. Humanisation is to engage in a dialogue that expands the human potential of listening, reflecting, creating new perspectives, and caring for each other. It is to develop ourselves as a group of people living together by unfolding our full potential as human beings in dialogue, cooperation, and freedom. Collective learning is to unlearn patterns of understandings and interactions that emerge from being traumatised by physical, ideological, and cultural violence and to produce alternative ways of thinking, speaking, and doing in support of the fuller humanization of us all. Creative connectivity means that opening alternative pathways and aesthetic expressions convey novel ways of connecting to each other and our environment through creative additions to the present in practice. We do it, we build it, we construct it, we create it. It is a multivariate creative process of unfolding, forming, and moulding, including revealing visions and initiating the unforeseen, the unchained, and, at times, the startling and wondrous. Siunissaq has applied diverse modes of aesthetic expression, but photo as visual art has a principal place.

Siunissaq builds on the notion that individual well-being, competence, and development arise from the community through social support, appreciation, and socially built options. Social sustainability is a system of mutual respect, trust, cooperation, and support. Project Siunissaq sees itself as a contributor to this system by providing spaces for trust, protection, respect, and cooperation (De Casas Soberón & Berliner, 2018). The bearing principle of the project is to show in practice, how to build these spaces in the encounter between people and between people and institutions, infrastructure, environment, and economy (livelihood). The learning theory in Siunissaq is social and systemic (Capra & Luisi, 2014). We learn by seeing, experiencing, feeling, connecting, listening, expressing ourselves, and creating together. It is a philosophy of ethics and aesthetics in practice.

Our approach is closely related to decolonising approaches in design, craft, and art, including art-based research methods as the goal is to build collaboration through equity and appreciation of self-determination (Hormazábal et al., 2021; Beaulé et al., 2021; Nimkulrat, 2021). From that point, we engage in the ever-changing networks in the community as a team with an active agency in the defining and building of a community from the visions and aspirations of the participants.

Siunissaq is informed by theories of, and our experience in, psychosocial support of people impacted by disasters, including organised violence, natural disasters, industrial disasters, pandemics, colonialism, and other form of systemic and structural oppression.

The approach differs from individualised methods to mental trauma by collaborating closely with local communities to strengthen social resilience. The approach addresses social and intergenerational trauma by building a safe space (Anasarias & Berliner, 2009). Soon, we added peace psychology to our practice, inspired by our involvement with the Space for Peace in Mindanao in the Philippines and our involvement in psychosocial programs for refugees, torture survivors, and other groups impacted by violence. Then local communities in Greenland invited us to apply a similar approach in an equal, collaborative, and explorative approach to overcome mental and social sequalae of colonialism, inequality, violence, and neglect by supporting self-determination, local ownership, and social support. The approach includes freedom *from* suicide, domestic violence, sexual violence, substance abuse, mental and social suffering, discrimination, and cultures of silence. It also includes freedom *of* expression, equality, local knowledge, and self-determination. It is a social healing from local resources, values, and visions.

Figure 3. Social portraits – creating a portrait together. Maniitsoq, 2023. © Siunissaq

It is decolonisation and de-coloniality by listening to local voices without submersing them into dominant narratives of epistemology, service designs, elitism, and exclusion.

Siunissaq aims at building a safe space with rapport as a platform for gradually daring to open other connections (to people, materials, art, and environment) than a replication of symptoms and to try these alternative connections out in practice. The community psychology approach in Siunissaq shows in confronting symptoms and suffering by acknowledging their collective dimensions, i.e., that many of us suffer from similar symptoms and that there is a systemic and structural background to them. They are between us, rather than solely in each of us separately.

The Study

The production of knowledge in Siunissaq holds kinship with poetic epistemology (Franke, 2015) and with ecological ontology (Meurer & Eitel, 2021), which understands learning as the total, self-correcting development in a system of both human and non-human actants, including materials, locality, and environment. Learning occurs throughout the system, not solely in the human functions of the system, as there are multiple co-creators of the learning (Latour, 2005). In Siunissaq, we use the term *formation* to denote systems as living and as movement, and we are part of the movement. Siunissaq is dialogue-based social activism aiming at shaping social justice, equal opportunities, and access to participation in the community for all. We have developed a practice combining psychosocial activities and aesthetic expressions to achieve these highly set goals.

Here we present a study on social change through psychosocial interventions and community art. Our qualitative material is experience, storytelling, and reflection. We are informed by research methodologies in community psychology and art-based action research (Jokela & Huhmarniemi, 2022; Hammond et al., 2018; Gårdvik et al., 2022) in a framework of systems theory (Berliner & Enghoff, 2019), sustainability research methodologies (Clark & Harley, 2020), new materialism (Gamble et al., 2019), and engagement theory (Vlieghe, 2018; De Lissovoy, 2018). As mentioned above, it is also informed by poetic epistemology. Bachelard (1994) wrote about poetic images as poetic epistemology, a way of understanding the space, we live in and our emotional belonging to that space as a way of sensing our existence. Following that, Frank (2015) shows that poetry was the first format of scientific knowledge as it reflected on our connection to and being part of the world. These methodologies all reflect on respectful listening to people and

on the relation between the mental and the material aspects of the object of study. We find that core to studying learning processes of aesthetical expressions and psychosocial development as it helps us to avoid separating these two dimensions of the learning.

We find inspiration in case-study methodologies in psychotherapy and family therapy research, especially systemic epistemology, which argues that the observer is part of the system. This understanding is well established in science theory. As the observer is part of the system, then epistemology, methodology and knowledge produced are also part of the object being studied. Hence, knowledge is autopoiesis, intra-action within the system that reflects itself in a feedback loop to learn – and when it even reflects on how it learns in the feedback loop, it engages in a double feedback loop of learning (Argyris, 1977; Argyris, et al., 1985; Capra & Luisi, 2014; Varela et al., 1974; Barad, 2007). It has been argued that feedback depends on a feed-forward process that is reciprocal to the feedback (Logan, 2015). That is important to a project with the name Siunissaq.

The object of the study is the shared learning. The learning, the building of joint knowledge, is our research object. It is also our method as the knowledge stems from our shared learning.

The learning is transformation, but moving forward may involve viable cultural traditions of social support, peaceful conflict resolution, and stewardship of the land. However, even though the movement may be diverse and manifold, it must be seen in the light of principles such as freedom of speech, sense of belonging, safety, and other concepts that links learning to Human Rights, the Rights of the Child, the Rights of Indigenous Peoples, and other defined rights. It must be linked to sustainability. This also includes action research as part of the learning. It is linked to building a sustainable world, providing social, cultural, environmental, and economic sustainability. This type of research is pragmatic, its value is linked to its contribution to Rights and sustainability.

To study how we integrated psychosocial activities and community-based aesthetic expressions, the first author interviewed the visual artists Tina Enghoff and Soeren Zeuth, and Psychologist Elena de Casas. They are founding members of Siunissaq and have made more than fifty workshops on community-based psychosocial development and aesthetic expressions in Siunissaq in seven local communities in Greenland. They are hands-on co-creators in the workshops, together with the participants and with local artist, educators, and members of the community. Besides Siunissaq, they all hold extensive experience in making workshops of community art and artivism in the Arctic, the Near-Arctic, and globally. In other texts, we have presented the young participants'

and locals´ feedback (Berliner & Enghoff, 2019). In short, the young participants said that the workshops gave a sense of unity, friendship, connectedness, and trust in each other and themselves as part of the community and that they felt freer to express themselves.

As our focus in the present text is on the combination of psychosocial activities and community-focused aesthetic expressions, our data here are interviews, i.e., dialogues, with the facilitators of the workshops. It is a self-reflection to develop our conceptual framework. The method is the sharing of experience and reflection. It is action research as it is part of the further development of Siunissaq.

Furthermore, it is inspired by case-study methodologies in psychotherapy research, especially systemic epistemology that argues that the observer is part of the system. This understanding is well established in social science and states that the epistemology, methodology, and knowledge produced are all part of the object being studied as it includes the observing subject in a movement of autopoiesis and intra-action (Varela et al., 1974; Barad, 2007).

The object of our study is the shared learning, movement and the joint creation of supportive social networks and aesthetic expressions. We do not study people, local communities or cultures. We are not observing, describing or interpreting others. We are reflecting on a collective learning process, a social movement, in which we are embedded and have a sense of belonging. We are not educating or studying people; we are engaged in a shared creation of a supportive and sustainable community, and our object of study is this creative process.

The interviews focused on the interlace between the psychosocial approach and the artistic approach and showed four principles in Siunissaq. The first is to build a safe space and use it to let creativity grow. The second is that social support and creativity are in-between us. The third is to go beyond the immediate and creatively add new images and new subjectivities to the immediate. The fourth is that a double loop of creativity as the safe space opens for acts of creativity, contributing to the continuous creation of the safe space.

To Create the Safe Space

In the interview with Tina and Soeren, we set out by reflecting on the gaze, the seeing, the way, we look at and understand ourselves and each other as a reflective practice. In the psychosocial practice, we change the way we look at ourselves. I asked the artists if

photos taken by young people can open multiple ways of looking, of seeing, of creating images and visualisations.

Tina responded, that both the psychosocial and the aesthetic activities "touch on feelings." She emphasises creating a platform, a space of safety, where young people can address and share feelings.

Tina, Soeren, and Elena concurrently mentioned that building a safe space is core to the principles of Siunissaq. Soeren said: "Until we get there, nothing really happens. But there is a pathway to it and that is to be present in the shared space, we create together." Together, we create the safe space, it is an addition to the present by performing it, doing it. Soeren continues: "The safe space grows and comes into being when the participants have known us through a few days, and then the courage to create something comes. It becomes a shared creativity."

Elena reflects on the safe space: "We aim at building a safe space where we all can develop skills to be free of the story that tells us that we are not free!" The safe space is a principle. It is not an instructive practice but a way of being in the here-and-now. Tina says: "We take the participants seriously as human beings. It is the keyword of Siunissaq. We always take people seriously and listen to their needs." This is to see everyone as an expression of life, of being and becoming, of life in existence.

Social Support and Creativity are In-between us

> We are all involved in making community. We are invited into the community by the welcoming of people. Then we engage in ways to go beyond traumatizing, oppression, and violence, that blocked our free development and caught us in replications and unimaginative ruminations and suffering. We open a dialogue in a safe space and then we expand this space and face conflicts and challenges together. We build openness and hope together. We are more like guests to the soul of what really happens in the experience of the young people, and then social support starts to grow. - Elena

Here, we notice the systemic, collective approach, reasoning that we create social and cultural resources in between us. The creative power of the group strengthens connectivity and mutual support as it opens a space for everyone to participate. It is not about the secluded performances of the individual but to build shared experience and aesthetic expressions. This space expands as the young participants invite all in the

community to participate in community events with presentations, exhibitions, food, and togetherness. Together we create pathways to social sustainability by unfolding and making additions to the present, both in the psychosocial and the aesthetic actions. The aesthetic expressions are created, shared, seen, and enjoyed together. We all own them in the local community. That is the core of social support, resilience, and sustainability – that it is social. It is community-building as it sees everyone as a part of the shared creative process.

The idea is not that the community reach out to include vulnerable members, but that the community exists through that we all contribute to the shared learning, events, and artwork. Therefore, we never give an award for the "best photo" or the "best contribution" to the making of a socially sustainable community. It is not that we all created a social learning or an artwork, which belongs to us; it is that we all belong to the learning and the artwork. It is a sense of belonging that exists in learning and creating the artwork, participating in the community event at the end of each workshop, and in the exhibition of the artwork.

Thus, we see the sense of belonging as externalised. We conceptualise the collective learning and the artworks as the *actants*, that build a sense of belonging to the community. It is an experience, and it can turn into a "*luminous memory*" (in the words of Elena), a beacon that can show a pathway forward. It can be carried on as a social skill but to begin with it is in the connections between us (and in between us and materials, non-human agents, the environment, and the culture). It is a shared space. It is common, it is communal, and we can all belong to it.

> Community cannot be done just by yourself; it is always happening because you're recognised by others in their full presence - Elena says .
>
> We stand out as a photo-team and the young people play a part in that and in the community and therefore they make more effort than just taking the first layer of pictures. - Soeren continues
>
> It is community art because it is interesting for the participants and for people in the local community, and it is all collaborative. It's wonderful when art turns into collaborative activities. - Tina adds

The psychosocial and aesthetic contributions open for a change of positioning in the community. It is a change of how the community sees the participating young people. The community welcomes the psychosocial and artful contributions of the young peo-

ple; they become givers of shared experiences. Giving is a core part of building a community. The community recognises the young people, with approval, as contributors to defining and building the community. Accordingly, the young people build community as an ongoing process.

Another related reflection recognised in the interviews is an externalisation of the creative agent. In one perspective, we can see this agent as the individual or the team of young people. In this perspective, Siunissaq allows everyone to contribute to the shared creativity. In the externalised perspective, creativity is the agent, the moving subject, the promotor of community building, and the actant that opens a space of belonging for all involved.

If we play a bit with this perspective, we can argue that creativity comes into existence in the shared learning process rather than being something each person brings to the table. The creativity is in between us and the engagement it conveys is communal, i.e., not owned by anyone, but by the process itself. In a framework of systemic and network theory, the creativity and engagement are between us and between us and the materials, we work with, the environment, and the land- and cityscapes, we move in.

The same externalisation can help to explain why Siunissaq is not art therapy even though it aims at *healing* dialogues and creativity. Often psychotherapies focus on healing or curing symptoms of singular cases, whether individual, familial, or a group. In Siunissaq, the curing and education are not of the participating people, but of the dialogue, mutual appreciation, and freedom to use our full human potential.

To go Beyond the Immediate

Tina and Soeren tell that the safe space opens for a creative process that goes beyond the immediate. Soeren says that the safe space makes it possible for young people to dare to go out and make expressions of diverse moods, not solely of joy or beauty.

> In the safe space, the participants suddenly create pictures of something that is more deeply felt then the immediate. (…) We encourage the participants to go out and take photos again, not just as a repetition, but as a creation.

Then the first, the immediate, layer "is scraped away and then we get down to the next layer, where there are other stories that touch your emotions and are engaging." He concludes by saying: "Then the making and the products, the creations, are received as art

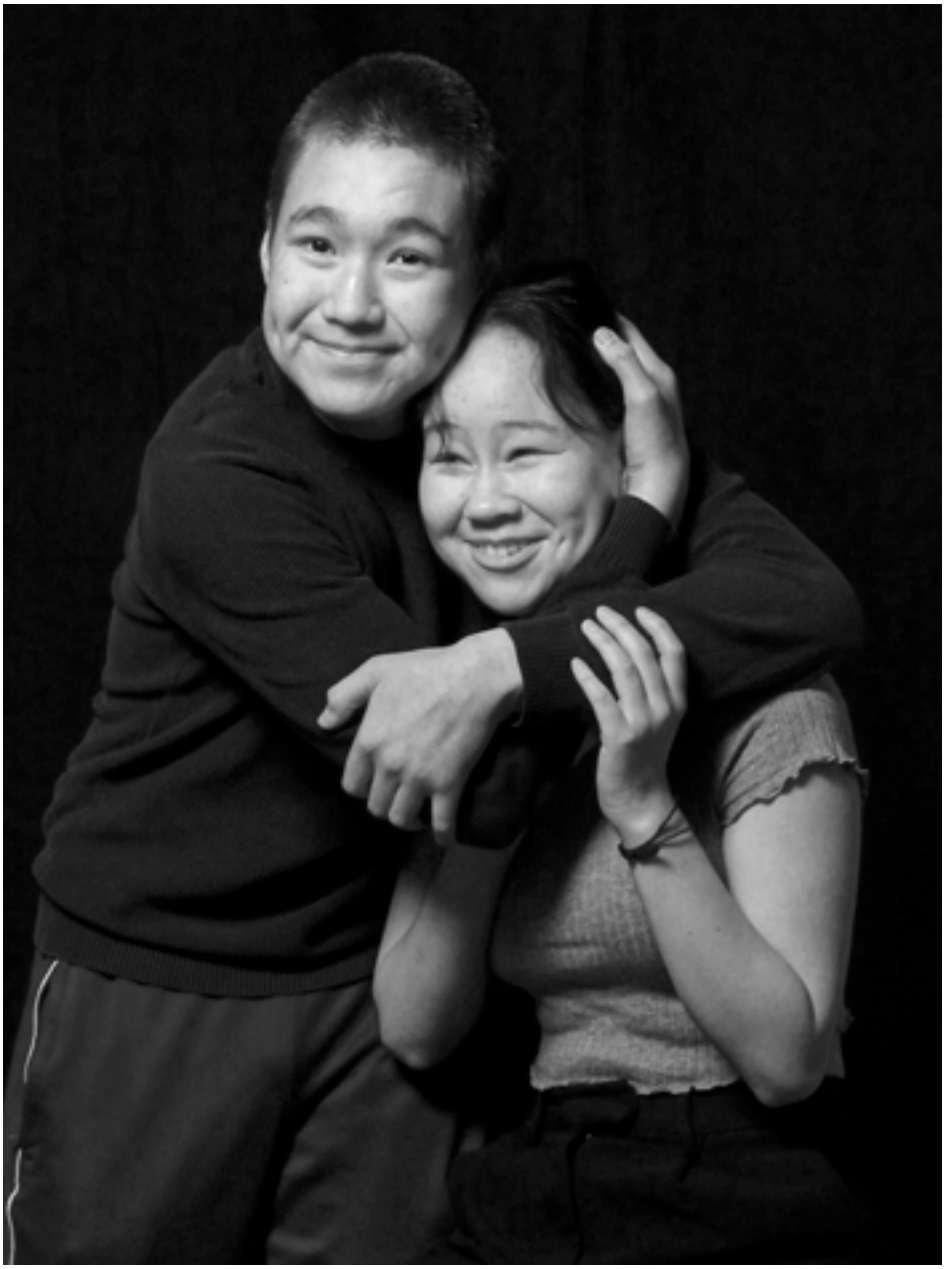

Figure 4. Portrait taken by the young participants in workshop, Maniitsoq, 2023. © Siunissaq

– and it is. Art has a message for us, it tells us something, it impacts on us. There is an idea, an experience, an expression in it." Tina follows up by saying: "Involvement is the heart of creating art."

Elena talks about a comparable creativity in the psychosocial activities: "In the psychosocial activities, we change our connections with the others, the world, the landscape, the present, and the future." Elena explains that the creative action is social creation of capacities and unlearning of imposed narratives. It is a process of creativity as it establishes new positions of more mutual trust, appreciation, and support. We widen our subjectivity together through appreciation of the human dignity of all.

> In the moment we tell our narratives with hope and dignity, with mutual respect and support, we can share dreams and visions as well as our pain, fears, and exposure to neglect, violence, and abuse. Hence, we can share our passion for life. And others will look at this novelty and find inspiration. Art adds to reality and becomes part of it. The same happens in the psychosocial creativity; we add to reality by humanising it to entail human dignity, social support, and freedom to develop.

The Double Loop of Creativity

From the interviews, we can define the double loop of creating a safe space and creating photos that adds more diverse ways of understanding and presenting the community. The creative double loop expands ways of being together (building a safe space) and the aesthetic expressions of feelings and sense. The double loop encompasses multiple forms of expressions and of connecting to other people and to the environment. The double loop weaves the creation of a safe space and aesthetical expressions together through an ongoing feedback loop between the psychosocial and the aesthetic activities. Hence, they are folded into each other. The artistic expressions open for a deeper understanding of social support (through articulation of feelings and showing connectedness) and the psychosocial safe space opens for courage to go deeper into multiple feelings and understandings. The psychosocial activities and the aesthetic expressions add something to the immediate, the instantaneous, the fast, through a process of transformation. It holds a message, an intention, an action of forming our world, and connecting to it, being embedded in it, and creating it.

This transformation of the immediate can be, in theoretical terms, understood as spatial, to expand our view and pathways through networking, adding new meanings.

Figure 5.
Social portrait taken by young participants in a workshops, Maniitsoq, 2023. ©Siunissaq

It can also be understood as vertical, i.e., as going deeper or beyond the instantaneous. These two theoretical frameworks are both used in Siunissaq as a multiverse in producing knowledge. However, we are aware that the idea of a vertical process of understanding differs from a horizontal one. It may include revealing a deeper truth, while the horizontal view includes a manifold of understandings at the same level, a "pluriverse" or "multiverse", of discourses. The combination of these two perspectives, although partly contradictory, provides an option for expanding our understanding into narratives of self-determination and social support. In both perspectives, we try to avoid interpretations as they replicate colonial positionings of the "other" as less knowing and, historically, in the colonies as people with less rights as citizens, maybe not even citizens. Interestingly, we find these theoretical positions both in the interview on the aesthetic expressions and in the interview on the psychosocial activities. From this concurrency, we can infer that the positions contribute to the overall entity of the psychosocial and art-based activities.

The double loop creativity is that psychosocial creativity, which starts by building a safe space, opens for going beyond the immediate through the above-mentioned additions and contributions. The double loop occurs in the reflection on the principles that can be extracted from the single feedback-loop in the practice of Siunissaq. There is a horizontal loop – a parallel process – between the aesthetic creativity in the art-based activities and the psychosocial activities. The double loop is when we combine these activities into a joint process in which the aesthetic creativity makes a feedback loop to the psychosocial activities and these activities then feedback again to the creative, aesthetical activities. This feedback is a folded double loop feedback, a spiral of adjustment and evolution. It is a series of connected single loops, turning into a double loop that includes both human and non-human actants and materials (Azoulay, 2015; Aladro-Vico et al., 2018; Goris & Hollander, 2017; Hammond et al., 2018; Bagge & Berliner, 2021). In short, we can formulate this as creating the freedom to create.

The double loop reflection starts when we reflect on our reflection. It is a meta-position, but still part of the system we are studying and engaged in. It goes beyond borders of psychosocial and aesthetic expressions of the immediate, and borders made by fragmentation and individualisation (Beer, 2023).

Discussion

Siunissaq fits into the overall theme of this book by: (1) going beyond borders between psychosocial and aesthetical activities, (2) combining felt sense impressions and cognitive knowledge, (3) overcoming fragmentation, separation and discrimination by equitably inviting all groups in the local community to participate, (4) embracing process and product in the creative movement as all steps of the processes are part of the artwork. In this text, we focus on going beyond borders between psychosocial and aesthetic approaches to building community.

Often, borders are separations, but they can also be meeting points, nodal points, and infrastructure bringing people together, valuing the uniqueness as well as the similarities. It depends on the positioning, not just of people, but of the border. The border becomes an agency, an organiser of exchange. Still, at times and moments, borders become a process of splitting that cuts families and local communities apart and gives different values to people according to which side of the border, you are on. It is a process of fragmentation where social bonds are severed, and differences produced. Fragmentation is this splitting the social life into distinct sections, structured as racism, classism, elitism, male chauvinism, or other forms of dividing people into groups of superiority and groups of inferiority. We see the double loop of art and psychosocial activities as creating connections and overcoming fragmentation and separation through providing alternative stories of self-determination, equity, and dialogue.

Siunissaq emerges as a co-creative, dialogue-based alternative to socially imposed logics of fragmentation and discrimination by respecting the human dignity and the rights of everyone. The concept of respect is core to the Convention of the Rights of the Child and to the practical approach of Siunissaq. It includes respect for Human Rights, fundamental freedoms, the child's parents, culture, languages, and values. Moreover, the approach supports the children and young people as responsible citizen, "in the spirit of understanding, peace, tolerance, equality of sexes, and friendship among all peoples, ethnic, national and religious groups and persons of Indigenous origin" (United Nations, 1989, Article 29).

Siunissaq opens for freedom of expression through multiple means, including art. Siunissaq aims to cross borders and make it open land, a zone of transition, where we can meet in respect of our freedom of expression and to make that expression happen through multiple means so that no one is left behind in silence and without being heard and respected with human dignity.

The interlink between art and psychosocial development in Siunissaq is informed by experience in the encounters with the participants and by theories of humanisation

and aesthetics. Psychosocial growth is an art, the art of becoming more human and creating your life with freedom (Freire, 2005; Vlieghe, 2018, De Lissovoy, 2018). Berlin (1958) wrote about freedom to and freedom from. This binary has been disputed, but in Siunissaq we are aware of very basic aspects such as freedom from violence, neglect and abuse and freedom to express oneself and to participate without fear in the community and the society.

Nietzsche (2006) wrote about the Übermensch, which is a person that educates themselves to reach freedom from conventional moral restrictions. Our focus here is on the educative dimension to this becoming, without succumbing to the ideological dimension of dividing people into vertical hierarchies of being "beyond" or "inferior."

Figure 6. Portrait taken by the young participants in Siunissaq workshop, Maniitsoq, 2023.
© Siunissaq

Our point here is Nietzsche's idea of a creative power to transcend present oppressive ideology of fragmentation and individualisation through a creative process. This aligns with Arendt's (2018) concept of humanisation as embedded in dialogue and free communication. Foucault (1984) wrote about the aesthetics of existence as a lifelong education aiming at a dignified life. Bergson (2022) argued that life exists as a flow of creative evolutions, i.e., that creativity drives emergence of the new (Gaut, 2010). Whitehead (1978) argues that reality, all the universe as a vibrant entity is driven by creativity. Existentialism reasoned that human beings must make choices to create meaningfulness of life (Sartre, 2018). Dewey (2005) wrote about using aesthetic experience to overcome conflicts and to lead a fuller life as a human being in a social context, as art may open for critical thinking by looking beyond the immediate and open for a wider understanding of our shared world. Dewey sees art as a crucial component of this process because it fosters critical thinking, emotional engagement, and a deeper understanding of the world. Here, we focus on creativity as part of the ongoing development, i.e., education of us as human beings through history and through our shared life now. Bergson (2022) and Whitehead (1978) may see creativity as a principle of evolution while existentialism sees it as a personal responsibility. Arendt and Freire understand humanisation as a product of human action, i.e., as an act of creativity.

Thus, Siunissaq seeks inspiration from these theories about educating for humanisation and forming our lives through creativity. However, as Arendt, Freire, and Dewey, we see the creative development of life and humanisation as social, including cultural, environmental, and economic sustainability. We hold a social view of creativity. The double loop of creativity in Siunissaq is that we create a life together as a creative art and that art and aesthetic expressions are core to creating life as an art of humanisation.

Conclusion

Siunissaq embodies five fundamental principles: peacebuilding, humanisation, collective learning, connection-making, and creating handmade products and activities. These involve both psychosocial approaches to addressing the root causes of violence and trauma and the aesthetic imagination in shaping materials. Through a dual process of psychosocial activities and aesthetic expressions in community art, Siunissaq introduces new elements into our lived reality, fostering togetherness, humanisation, wonder, and a sustainable present and future.

We found strong support in the above presented theories for our understanding of a double loop of psychosocial activities and aesthetical expressions, as an art of building a life with our full potential as human beings. The Siunissaq project inspires young people by engaging them in learning through community art, where they plan and implement local art events. This is seen as a gift of the young people to the community, transforming both their role in society and the shared vision of the future. This transformative process redefines perceptions of the youth and the shared future, engaging with sustainability across social, cultural, environmental, and economic dimensions.

In practice, Siunissaq activities begin with listening to young people, followed by jointly listening to the sounds of nature, life, and the hopes and dreams of the present moment. Siunissaq is not a method in the conventional sense; it is a way of being. It is about listening, visualising, and adding to the present. Metaphorically, Siunissaq can be seen as a sound, a picture, a movement, or an engagement—but above all, it is about listening, dialogue, and enhancing the present by embracing the unforeseen through creativity. This emphasis on dialogue and listening ensures that everyone's voice is heard and valued, fostering a sense of inclusion and community.

As a psychosocial and community art project for children, young people, and local communities, Siunissaq seeks to eliminate discrimination. Equality, freedom, and human dignity are central principles of Human Rights. Discrimination and the suppression of free expression pose significant challenges to the Rights of the Child and the Rights of Indigenous Peoples. Siunissaq supports sustainability by practising social justice, equity, and freedom of expression at the micro-level.

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Shielin-bough: Building Collaboration Across the North

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The interdisciplinary and ecocultural approach to revitalisation and regeneration aims to cultivate education for cultural sustainability amidst the pervasive challenges posed by globalisation, urbanisation, and climate change (see e.g. Auclair & Fairclough, 2015; Dessein et al., 2015). The project which we draw upon to formulate the case study for this chapter is *shielin-bough*, a multi-stage collaboration between The Glasgow School of Art and the University of Lapland. This collaboration coalesced around the concepts of shelter, food and storytelling. The title plays linguistically with the name of a Scottish vernacular building used for seasonal inhabitation, a *shieling*, and bough, or branch, denoting our interest in the cultures of wood and wooden shelters. Therefore, *shielin-bough* comes to represent both

Figure 1. *Shielin-laavu.* Photograph: Gina Wall, 2024.

a place of shelter and an idea, it is a term which arches over the project making space to collaborate and learn together (Figure 1). This space was enlivened through inter-cultural exchange; storying ourselves, our places, and our experiences through building, making and being together.

Sustainability and heritage have been core principles for the project, both of which are understood as commitments to ways of being and doing that are attentive to time and landscape. Material sustainability was reflected in the choice of local, untreated timber and low impact approaches to building, and cultural sustainability was honoured through the exploration of deep connections between landscape and vernacular cultures of building in Scotland and Finland. We think of heritage as both action (Härkönen, 2020) and inheritance (Derrida, 2013, p.41), acknowledging the potential impacts of our choices as they arc through many possible futures, and valuing historical cultural knowledge as an ingenuity of place which can inform those futures. Cultural sustainability has been defined, in terms of cultural heritage, as the vitality of local communities and societies, and also as the cultural change required to achieve sustainability (Dessein et al., 2015). Recent regenerative futures scholarship presents the case to move beyond sustainability, towards models of practice which promote net positive outcomes and support the conditions for growth and renewal (Camrass, 2020). Regenerative practice has impacted a range of disciplines with an emergent interest around regenerative pedagogy (Damus, 2024; King, 2021; Milstein, 2020) in a range of educational settings. Working with people in place through Art-Based Action Research (ABAR) supports the revitalisation of northern communities through the participation of knowledge holders which surfaces knowledge that already exists in place (Jokela & Huhmarniemi, 2021). We explore this way of working by practising across geographical, cultural and disciplinary boundaries in order to understand some of the challenges faced by Arctic regions and northern inhabitants. Our case study, set in the context of higher education, exemplifies this approach.

Shielin-bough incorporated creative, hands-on learning experiences through participatory pedagogical methods while innovating traditional shelters, namely the Finnish *laavu* and the Scottish *shieling*. The project began with conceptual exploration and co-design in Autumn 2022 and culminated in practical outcomes during a field school at The Glasgow School of Art's Highlands & Islands campus in Autumn 2023. Various approaches to working beyond established borders ranged from hybrid workshops in new learning environments to interdisciplinary, inter-cultural, and intergenerational collaboration. The methodology of the project employed innovative processes, practices,

and actions which took account of the inter-connectedness of ecological and cultural realms, blending tradition with innovation, and engaging with the materiality of northern landscapes. It was crucial for the project to take a longitudinal approach which gave the time and space to develop relationships through online meetings, virtual seminars, co-design workshops and a field school.

The Scottish Government (2019) has acknowledged the importance of fostering Scotland-Arctic relations, and through the Arctic Connections Fund, has aimed to support opportunities for exciting regional collaboration. The *shielin-bough* project aligns with the University of the Arctic's (UArctic, n.d.) objectives in higher education, research, and outreach, to enhance human capacity in the North by sharing northern knowledge embedded in the lived experience of working with wood in the Arctic region. This collaborative project forms part of the activities of the UArctic Thematic Network on Arctic Sustainable Art Design (ASAD) which enables us to reflect on its outcomes in terms of the northern knowledge system (Jokela, 2019; Jokela & Huhmarniemi, 2020a). Situated at the intersection of materials-led pedagogy and ABAR, the *shielin-bough* project exemplifies successful cross-border collaboration in the north and serves as a valuable pedagogical prototype for similar initiatives. This chapter will commence with an outline of the cultural context in which we share background information on the *laavu* and the *shieling*. Following on from this we give an overview of the critical framework within which the project has operated. The project acknowledges the significance of deep regional epistemologies, and the importance of northern knowledges will unfold as we share the critical framework. This will lead in to a discussion of the methodology for our work and lastly, we will present the findings of our project.

Cultural Context

The intertwining of landscape and cultural tradition was an important starting point for our work and we took direct inspiration from vernacular eco-shelters, the Finnish *laavu* and the Scottish *shieling*. The challenge lay in designing a structure which took account of these shelters and adapted this for contemporary purposes. This undertaking required meticulous attention to the surrounding landscape, a sensitivity to local materials and the application of innovative design principles, along with interpreting history through diverse sources of historical knowledge, communal perceptions and personal testimony.

The project commenced with online collaborations and fieldwork, which engaged with both historical and contemporary concepts of the *laavu* and *shieling*. This process involved extensive desk and archive research, online meetings, field research, community engagement and workshops, which enabled participants to connect with and interpret cultural traditions drawn from historical research and first hand experiences. Through working with the natural and cultural landscapes of the Scottish Highlands and Finnish Lapland, the project empowered students to collaboratively reimagine and redesign a shelter inspired by these traditional buildings.

Laavu

The *laavu* is a Finnish eco-shelter which symbolises the deep connection between Finns and their forests. Originally constructed by hunters and fishers for overnight stays, *laavus* were built using locally sourced materials like pine branches and spruce boughs (Järvinen, 1956). Figure 2 shows a temporary *laavu* built by log drivers from birch and spruce, heated by a traditional fire made from two logs called a *rakovalkea* (Figure 2). *Laavus* share characteristics and functions with the temporary dwellings of Indigenous Sámi cultures, known as *lávvu* in Northern Sámi. However, these vernacular *lávvu* structures were traditionally formed of long poles stacked to an apex and covered with reindeer hides and their temporary nature was designed for a nomadic lifestyle across vast, often treeless plains.

As part of the *shielin-bough* project, Finnish students visited a community *laavu* at a historical logging site in Meltosjärvi, a small village in Northern Finland, maintained by an active village association (Figure 3). Today, this logging site and its *laavu* are central gathering spots that invite everyone to participate in local events and explore logging and forestry, giving a very practical demonstration of the revitalisation through sharing and using northern knowledge. Although the design and function of *laavus* have evolved, over time they have remained an integral part of the Finnish landscape and outdoor culture. Today, they have transformed into permanent communal gathering spaces, commonly found along hiking trails, at sites of natural interest, and even within urban settings, reflecting their integration into modern recreational activities. The *laavu* is a powerful symbol of revitalisation and regeneration, emphasising the close relationship between nature and the people of Finland, which we consider in this chapter to be exemplary of an ecocultural approach

Figure 2. (Above) Log driver's *laavu* by a *rakovalkea*. Photograph: Sakari Pälsi, 1923. Courtesy of the Finnish Heritage Agency.

Figure 3. (Below) Community *laavu* at a historical logging site at Meltosjärvi Village. Photograph: Ella Haavisto, 2022.

Shieling

Shielings are small, temporary farm dwellings found mainly in the Scottish Highlands, but also in less density in the Lowlands and Borders, which were fundamental to the region's pastoral lifestyle. They were modestly constructed from locally found materials like stone, wood and turf, often rebuilt seasonally (Figure 4). Strategically positioned on hillsides and near water sources, *shielings* supported a system of transhumance, the seasonal movement of families and livestock between winter homes and summer pastures. This system fostered a blend of agricultural activity, community and cultural life, underpinned by shared land use and clan systems. Although *shieling* usage waned in the Highlands around the early to mid 19th century under pressure from landowners' pursuit of sheep farming and land improvement (Taylor, 2016, p. 61), in the Outer Hebrides, on Lewis in particular, the practice persisted until the 1950s (McRobert, 2020). Ongoing initiatives to support the Gaelic language supported by the National Gaelic Language Plan, currently in its third iteration (2023–28) (Scottish Parliament, 2023) underpinned by the Gaelic Language (Scotland) Act 2005 (Scottish Parliament, 2005) support an increasing interest in traditional ways of life, including regenerative approaches to farming. Contemporary efforts are being made to revitalise this distinct element of Scottish culture and contemporary educational programmes such as An Àirigh / The Shieling Project (n.d.) highlight the importance of re-engaging young people with traditional and indigenous practices. These efforts aim to revitalise biodiversity and support the acquisition of traditional knowledge, countering the deep impacts of the demise of the of the clan kinship system, which was exacerbated by the global expansion of Empire and accelerated by the Agricultural and Industrial Revolutions (Taylor, 2016, p. 3). This was further intensified by the steady increase in concentration of landownership in Scotland amongst the wealthy few through the steady acquisition of common and church land (Wightman, 2015, p. 5) leading to the depopulation of large areas of Scotland (Figure 5). There are significant questions to investigate, specifically for us through an ecocultural lens, which centre around the relations between language, place and belonging in both the *Gàidhealtachd* and Lapland. While there is not sufficient scope to discuss it here, this is an area of concern for the broader *shielinbough* project. We anticipate this to be an area of future inquiry, informed by the intersection of indigenous research methodologies. For example, *Dùthachas*, an ancient Gaelic worldview and way of life, which Meighan (2022) develops into a Scottish Gaelic Methodology, learning from indigenous research practices to support ethical kincentric and relational approach to community-led research.

Figure 4. (Above) Reconstruction of a *shieling*. Photograph: Gina Wall, 2024. Courtesy of the Highland Folk Museum.

Figure 5. (Below) At the *Shieling*, Dava Moor. Photograph: Gina Wall, 2022.

Critical Framework

The *shielin-bough* project is informed by the critical paradigms of post-humanism and new materialism, and acknowledges that the marginalisation of ecocultures and traditional practices has been shaped by political narratives, enacted by colonial histories, and exacerbated by contemporary challenges like climate change and globalisation (Milstein et al., 2011). Our approach foregrounds the entanglement of the cultures and materials of place, and respects their importance for learning. In addition, we believe in the significance of the role that art and design education can play in the revitalisation and regeneration of cultures, places and people. The key terms which we will introduce in this section of the chapter are ecoculture, the northern knowledge system, revitalisation, and finally we will explore the impact of these framings for regenerative pedagogies of place.

Ecoculture has a compound form which emphasises the inter-dependence and interconnectedness of ecology and culture. It is a generative proposition for our work because ecoculture's foregrounding of the entanglement of ecology and culture asks us to think beyond our human-centred positioning. The dualistic structure of thought that has permeated Western industrial society, which defines our relationship with the natural world through a hierarchical dichotomy of nature and culture (Foster & Martusewicz, 2018; Plumwood, 2002), is challenged by ecoculture which acknowledges the interplay of ecological and cultural realms. As Parks writes:

> Ecoculture, as a focal term and conceptual framework, reminds us to decenter [*sic*] our own socially constructed anthropocentric perceptions and seek more place-based, ecologically centred perspectives that can reinstate value and agency to the more-than-human world. (2020, p. 70)

New materialism, aligned with post-humanist principles, emphasises intra-active engagement and coexistence with more-than-human species (Barad, 2007; Haraway, 2003). Ecoculture emphasises the significance of physical locations and materiality (Jokela & Huhmarniemi, 2022), and Haraway's assertion that '[n]atures, cultures, subjects, and objects do not pre-exist in their intertwined worldings' (2016, p.13) reminds us that the categories nature and culture are inseparable (Haraway, 2003). Wildcat calls upon us to learn from millennia of Indigenous wisdom and ingenuity, or 'indigenuity' (2023) to learn from the earth.

The intrinsic connectedness between nature and culture embodied in the concept of ecoculture has a significant bearing on epistemology. Following Haraway (2003) and

Barad (2007), we can argue that that knowledge emerges intra-actively in and from place, which means that thoughts and ideas are generated from hyperlocal and regional knowledge systems, which we will go on to discuss in a moment. Ecocultural relations with place are framed through different epistemologies such as traditional ecological knowledge, Indigenous knowledge, tacit knowledge, and local, situated knowledge, including the northern knowledge system, conveyed through visual language and transmitted across generations (Helander-Renvall & Markkula, 2017; Jokela & Huhmarniemi, 2022; Kimmerer, 2002; Kimmerer, 2013; Malone, 2016; Valkonen & Valkonen, 2018). In our study, these frameworks offer insights in to building meaningful connections between people and their environments, including more-than-human world (Cajete, 1994; Demos, 2017; Haraway, 2016).

Sustaining northern cultures and their traditions requires us to value ancient knowledge that has enabled survival in harsh Northern conditions (Lempinen, 2018). Our study applies learning from Huhmarniemi and Jokela's conceptualisation of *northern knowledge* to explore the cultural traditions and tacit understanding within local communities and ecosystems in the north, respecting their specific contexts and ways of relating to the world. As Huhmarniemi and Jokela write:

> We describe the nature of the shared dialogic heritage of the Arctic as the Northern Knowledge system, following ideas of an indigenous knowledge that consists of traditions, a historic understanding of humans' interactive and responsible nature relations and the use of natural materials in livelihoods. (2020b, p. 10)

Through the *shielin-bough* project we stress the diverse ways of knowing prevalent in rural, communities close to nature in the north (Jokela & Huhmarniemi, 2022), emphasising the connections between local traditions and the landscape expressed in vernacular building practice.

Developing dialogues between participants from differently situated ecocultural knowledge systems necessitates a serious commitment to foregrounding intercultural awareness and respect, actively promoting processes of exchange that create spaces of encounter among diverse beings, knowledges, logics, and practices (Walsh, 2005). While Indigenous peoples are among the most vulnerable to societal impacts in the changing Arctic (Stephen, 2018), the region also includes other cultural minorities whose traditions and identities require collaborative integration into local cultures (Chartier, 2018; Härkönen, 2020; Hiltunen et al., 2020). This is evidenced by various Arctic art projects (Jokela & Huhmarniemi, 2021; Jokela & Huhmarniemi, 2022; Härkönen, 2020).

Cultural revitalisation is essential for revealing previously silenced local environmental knowledge and fostering dialogue about landscape change (Rodríguez, 2017). In line with the growing focus on culture, linguistic and cultural revitalisations have become crucial for decolonisation in the Arctic (Nordic Council of Ministers, 2015). In various parts of the world, local revitalisation projects are progressing in areas such as traditional foods, economies, education, language, cultural practices, and rights (Pilgrim & Pretty, 2013). Given the complex nature of Arctic ethnicity, revitalisation should be extended to multi-ethnic and non-Indigenous communities as well (Huhmarniemi & Jokela, 2020b). We adopt their view of revitalisation as a socially constructed process that revives traditional practices within a contemporary socio-cultural context, fostering cultural continuity, reconstructing ancestral skills, and supporting local cultural identities (Huhmarniemi & Jokela, 2020a; Jokela & Huhmarniemi, 2021). In our project, we understand that revitalisation encompasses language, arts, crafts, and other cultural practices, which can play a role in rejuvenating places, villages, and regions. This approach leverages local uniqueness and vitality to promote regional identities. Strong human-nature relationships are typical in northern communities throughout the Arctic region (Valkonen & Valkonen, 2018) and revitalisation draws on the aforementioned ecocultural and situated knowledges of place.

In *shielin-bough*, we have applied the principles of incorporating local knowledge and practices in order to foster a more inclusive, contextually relevant and place specific educational experience. Huhmarniemi and Jokela call on us to reflect on the remit of art education in the Arctic north in particular:

> The idea of situated knowledge as part of ecocultures also challenges art education. What kinds of traditions should we aim to pass on to new generations through art education, and what should artists learn in art universities in the Arctic? (2020a, p. 4)

Aside from Haavisto, Jokela and Wall, the participants that engaged in the project changed with each iteration, which brought many voices and many ideas to the table. This transient learning community, comprising of students, technicians and academic staff, gave space to a contingent pedagogy which operated in a non-hierarchical way, during which all participants brought both individual expertise and the personal space to learn. This way of learning together supported what Puig de la Bellacasa calls 'thinking-with', a relational thinking that 'creates new patterns out of previous multiplicities' (2017, p. 72). This relational modality of learning operated across generations, disciplines and cultures, encouraging playful learning and cross-disciplinary skill sharing.

This gave rise to high levels of collaboration through the project, which was one of its great rewards. With each iteration, *shielin-bough* was brought to life by those who participated in various ways. Although we had an end goal in mind it was not only the final outcome that mattered for the teaching team involved in the project, the learning itself was equally important. This emphasis on the ways of doing rather than outcomes was translated from our overarching philosophy that the project should support engaging, high-quality learning above all. Central to this was bringing materials, stories and people into place to enrich ourselves, enhance our surroundings and leave a joyful legacy.

> A key feature of regenerative fields is the lack of focus on outcomes alone and an equal emphasis is placed on 'ways of working'. Entrenched manners of thinking are challenged to achieve epistemological change. (Camrass, 2020, p. 405)

Through our project the learning and teaching opened up to a regenerative way of working. This was a pedagogy which valued ways of learning together and gave creative ownership to the group, which during the live build was led by students. The shelter, part architecture part public artwork became, as the students from Mackintosh School of Architecture described it, a framework upon which the group could hang their ideas. It is also a platform which supports experimentation and play for future students, a structure with a legacy full of the potential for future learning.

Methodology

In its entirety the project has utilised a qualitative, mixed method approach, employing desk research, field research, multisensory workshops, participatory architectural co-design (facilitated by the In the Making collective) and a live build pedagogical field school. Ella Haavisto engaged as an equal as did other students in the process, emphasising collaboration among participants as a core aspect of ABAR activities (Jokela & Huhmarniemi, 2022). In this chapter we have utilised a variety of materials collected in the series of workshops, including photographs, drawings and observational data. Group discussions which ran concurrently with the project will be reflected upon in Haavisto's Masters thesis in art education.

Materials-led pedagogy and Art-Based Action Research (ABAR) served as our methodological orientations for designing and implementing the project, focusing on practical skills, participatory engagement, material handling and reflection. As a method, ABAR was developed in response to the sociocultural and sustainable development

needs of the north, addressing real world concerns and community change (Jokela, 2019; Jokela & Huhmarniemi, 2018), and our project learns from practice-based research which develops specific insights through the handling of materials (Bolt, 2006; Carter, 2004). *Shielin-bough* mobilises the strengths of each methodology. Materials-led pedagogy, informed by practice based research provides significant insight in terms of learning with and through materials, and ABAR is especially apt for use in participatory, sociocultural contexts.

One of the touchstones for this project was the necessity of learning through making and through material thinking (Carter, 2004). The project explored the cultural significance of vernacular systems of shelter in the north, and our ambition in the latter stages of the project was to facilitate a field school which enabled students to work in an interdisciplinary learning space to build such a structure at scale. In the increasingly risk averse educational environments of the United Kingdom, it is challenging to develop cultures of learning through live build, and the team felt that too much is lost in the absence of this type of learning space, especially in terms of material literacies and skilful handling of tools. In 'Materializing Pedagogies', Barbara Bolt argues that through material thinking the eye and mind become productively entangled. Although writing primarily about the knowledge generated through artistic practice, we feel that this is equally relevant to learning through making. As Bolt writes:

> Material thinking offers us a way of considering the relations that take place within the very process or tissue of making. In this conception the materials are not just passive objects to be used instrumentally by the artist, but rather the materials and processes of production have their own intelligence that come into play in interaction with the artist's creative intelligence. (Bolt, 2006)

Thus it can be said that the intelligence of the materials intra-acts with the intelligence of the learner/maker. Vernacular materials are embedded within a long history of use in specific localities, which we might argue, constitutes some of the intelligence that they carry. Through these materials we both learn and make place (Sivtseva, 2020).

By merging online collaboration with hands-on fieldwork, the initiative facilitated a collaborative design process involving students and tutors from two campuses at The Glasgow School of Art in Scotland and one at the University of Lapland in Finland. The practical field school activities were built upon the co-design groundwork contributed by students in the previous semester, which was critical for laying the project's conceptual foundation. This initial phase culminated in a unique hybrid

co-design event featuring preliminary model sketches. Students utilised a digital platform for collaborative research using a Miro® board, where they could share and save their research findings, sketch ideas, and find others' contributions. This approach to co-design not only bridged geographical distances but also enabled a rich exchange of ideas, where cultural insights could be shared and embodied into the design process.

The live build took place over two iterations and central to this was the acquisition and development of embodied, skill-based learning with materials at scale, and the majority of the work was completed with hand tools. There was a generosity to this learning, with all of the students working for the benefit of the collective, each developing responsibility for significant aspects of the build. Acting with care and concern for fellow students was a value that was quickly established by the student-led team. Team work was essential, a bodily understanding of the relative weight of beams and lengths of wood was developed as they were manoeuvred with care around the site. Understanding how heavy a piece of wood actually is, determined the approach to undertaking tasks safely on site which was navigated thoughtfully and respectfully, with acute awareness of the field school as a place of relational care for all.

The inter-cultural aspect of the project also meant that there were many languages spoken on site at any given time. The shared language for verbal communication on site was English, but at times the significance of body language and by extension, drawing, came to the fore as a common space in which ideas would be shared with exceptional clarity (Figure 7; Figure 8). In her article on learning-by-making, Sivtseva cites the importance of drawing as a tool for mutual understanding and learning, during an analysis of a live build undertaken by a group of her Masters' students in Northern Siberia. Sivtseva articulates this as follows:

> The participants understood the process most easily through live hand-drawings and oral explanations. These two methods seemed not to work separately, only in combination…Thus, it was a process of collaborative thinking through drawing. (2020, p. 106)

We can also learn from the community engagement facilitated by this *Growing Structures Project*, which tested the opportunities of 'civic engagement, through construction: not only literally growing plants and buildings but also growing networks and institutions for civic action through collaborative architectural making.' (Sivtseva, p. 97) The learnings from our project can be applied to other pedagogical settings, such as col-

laborative learning opportunities between the GSA Highlands & Islands and our local community. In order to lever these opportunities to maximum effect, it is perhaps worth reflecting on what literacies may be developed for this approach to be iterated effectively with participants from non-Art School backgrounds. How might visualisation be facilitated in co-design workshops with, for example pre-secondary school children, or intergenerational community groups? What might a materials-led pedagogy look like for these participants?

At the start of academic session 2022/23. The students at Mackintosh School of Architecture intensively workshopped the design in response to detailed feedback from the structural engineer. This element of live professional learning was helpful in terms of the calibration of expectation and refocusing the team on the buildability of the structure. The design came to life during FieldSchool, held at The Glasgow School of Art's Highlands & Islands campus. This field school served as a hub for interdisciplinary learning,

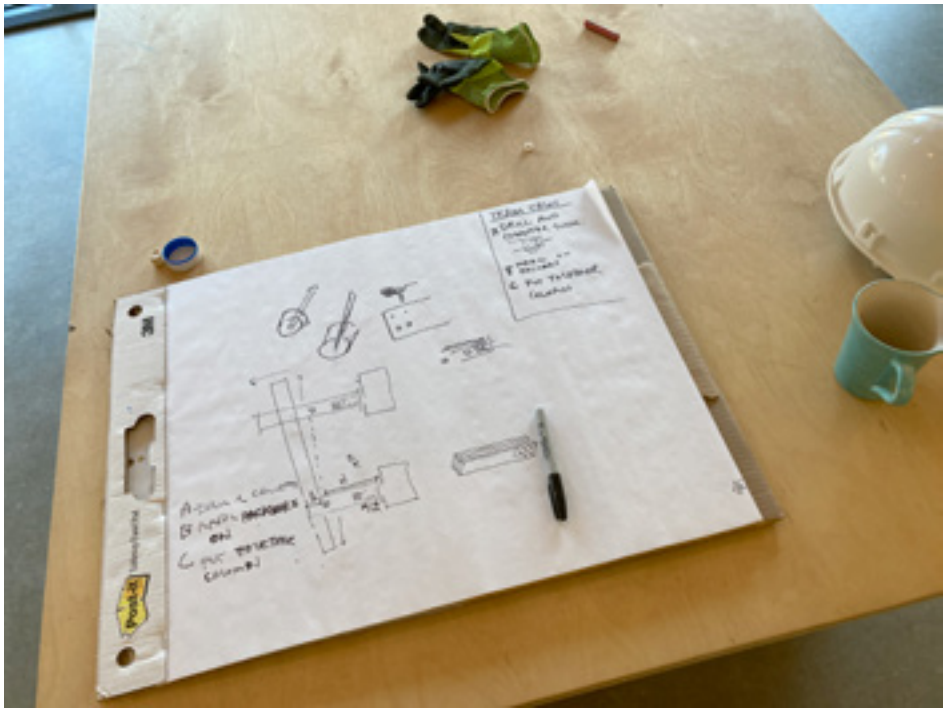

Figure 7. Thinking collectively through drawing. Photograph: Gina Wall, 2023.

Figures 8-9. Architects at work and levelling the foundations. Photographs: Gina Wall, 2023

bringing students together from architecture, environmental design, and art education, with a common focus on the cultural and practical aspects of materials. The hands-on interaction with materials enriched students' knowledge of their characteristics, limitations, and potential applications. The construction process itself was highly collaborative, with students working alongside experienced architects, technicians, and artistic practitioners/teachers (Figure 9).

Through the materials-led pedagogy of FieldSchool, participants had access to locally grown pine which came from within a 60-mile radius of the campus. All of the wood was processed at a neighbouring sawmill, Logie Timber, which became an important collaborating partner in the project. Working with local materials enabled the design team to order bespoke timbers which were untreated and sustainably sourced. This sensitivity to the environmental impact of the structure was a value shared by all of the participants involved. The traditional construction methods were characterised by their collaborative processes, encouraging community participation (Figure 10). Working with a growing awareness of vernacular materials led to experiments with heather thatching (Figure 11), a traditional roofing material and biodegradable building processes used in *shieling* construction. This was a moment of creative hybridity, when the *laavu* received a local Scottish treatment, blending Finnish and Scottish traditions.

Figure 11–14. Collaborative construction. Photographs by Gina Wall. The photograph top right corner by Ella Haavisto, 2023.

Figure 15. *Rakovalkea* lamp. Photograph: Gina Wall, 2024.

In traditional settings, the *Rakovalkea*, an overnight campfire (Figure 2), was constructed from dead pine wood selected for its appropriate thickness, ideally as straight as possible (Järvinen, 1956). The space between two logs would be filled with birch bark and spruce boughs (Järvinen, 1956). Due to regulations prohibiting open fires at the build site, the *Rakovalkea* concept was adapted into a lamp, crafted from similarly sourced Finnish dead pine wood, maintaining the ambience and warmth of the traditional campfire (Figure 15). As dusk fell and the firelight glowed, *laavus* became venues for storytelling, showcasing the deep ties between Finnish folklore and forests. This storytelling tradition was encapsulated through laser-cut plywood signs that illustrated students' reinterpretations of the *laavu.* In contemporary *laavu* culture, visitors engrave personal marks on wood, creating a guestbook embedded within the structures. Participants inscribed their signatures on the plywood board, which represented their home country (Figure 16). This practice embodies the communal essence of the *laavu* and the symbiosis between material and cultural practices. The *laavu* was engraved with a compass, orienting it in relation to north, pointing towards its place of inspiration (Figure 17).

Figure 16. (Above) Engraved wood, maps of home. Photograph: Gina Wall, 2023

Figure 17. (Below) North, compass engraving. Photograph: Gina Wall, 2024.

Findings

The following section reflects on three key strengths of cross-border collaboration. First, the hands-on approach, where theoretical knowledge converged with practical application, facilitated exchanges with architects, designers, and art educators. This integration resulted in the construction of a physical structure embodying the intangible elements of the *laavu* and *shieling,* their history and their cultures. Students were motivated by the opportunity to create something tangible and enduring, which would be utilised by others.

The interdisciplinary approach aligns with the principles of new genre Arctic art, which parallels and enhances the future-oriented approach of ABAR by exploring strategies that unite communities through interactions with traditions, ecocultures, and local environmental issues (Jokela & Huhmarniemi, 2022). This approach integrates art, design, and crafts within a unified field of creation and education (Jokela & Huhmarniemi, 2022), emphasising the material aspects and examining how natural materials influence and interact with cultural and educational practices (Huhmarniemi et al., 2021). In the *shielin-bough* project, architecture students were introduced to environmental art practices, encouraging them to integrate principles of ecological awareness and sustainable art practices, including the use of natural materials and exploration of ecological dynamics.

The revitalisation of ecocultures has been fostered through art projects using local materials and traditional methods, sharing stories and beliefs through public art (Härkönen, 2020; Huhmarniemi & Jokela, 2019). Jokela et al. (2021) introduced the concept of new genre Arctic art, paralleling new genre public art (Lacy, 1994), to describe contemporary artistic interventions, public art, and performances that include activism and engagement with current issues. This approach combines beauty and practicality, art and design, and other northern ways of knowing embodied in creative production. Our pedagogical method adhered to the principles of new genre Arctic art, focusing on sharing traditions and passing on the material cultures of the Arctic to new generations.

Another significant strength was the integration of diverse geographic settings and international participants, which facilitated the sharing of local knowledge from across the globe through cultural exchanges. Huhmarniemi et al. (2021) suggest cultural encounters are an important part of revitalisation, which aim to share northern knowledge with international participants by inviting international students to collaborate with local communities, learn cultural practices from the Northern and Arctic regions. Besides students from Scotland and Finland, the design process welcomed international students, primarily from China, further enriching the cultural exchange. Students inter-

preted local materials and practices through their cultural lenses, fostering a multifaceted approach to knowledge creation. The team composition evolved throughout the project, with most students participating in FieldSchool being newcomers. This continual integration of new members and ideas brought fresh perspectives, making the process dynamic and adaptable. As Haraway (2016) suggests, meaningful change often arises from unexpected collaborations, and this collaboration exemplified how new participants can invigorate and transform a collaborative endeavour.

The project also delved into the intangible elements of food, culminating in a celebration where participants recognised their achievements over a communal meal and traditional food explorations. This phase, alongside group discussions, personal reflections, and feedback sessions, was pivotal for integrating lessons learned and assessing the project's impact. It underscored the significance of cultural exchanges and the project's successes in fostering these interactions, emphasising the vital role of food cultivation and preparation as carriers of intangible cultural tradition. These practices, often dismissed as mere acts of neighbourliness in today's consumer-driven societies, are deeply rooted in ancient worldviews and knowledge systems that prioritise caring relationships and the health and happiness of communities (Foster & Martusewicz, 2018). This collaboration demonstrated that these traditional practices are relevant in fostering a sense of community and cultural continuity within contemporary education contexts.

The third strength of the project was the seamless integration of tradition and innovation through the reinterpretation of vernacular shelters, which acknowledged the profound connections between people and the land. The design required a balance between interior and exterior elements, enclosure and openness, symbolising both the protective nature of the shelter and its relationship with the landscape. Discussions about the *shielings* and *laavus* sparked broader conversations on sustainability, land ownership, and the cultural imprints of colonial practices on Indigenous lands. These conversations align with the concept of ecoculture, which we have already seen, places an emphasis on how land and culture are intricately interwoven.

Revitalising local ecocultures and integrating them into contemporary higher education is crucial for the acquisition of forgotten skills, fostering cultural continuity, and promoting cultural pride (Jokela & Huhmarniemi, 2022; Auclair & Fairclough, 2015). Engaging students with local communities and immersing them in the cultures of the northern and Arctic regions has proven effective in achieving these objectives. For example, at the Meltosjärvi logging site in Finland, villagers brewed coffee and shared meals by the campfire at a *laavu*, recounting stories from their early log cabin days to

current efforts to rejuvenate their dwindling village. This experience raised awareness of local challenges and highlighted how the *laavu* can serve as a setting for the revitalisation of ecocultures from an educational perspective.

The intertwining of the *shieling* and *laavu* allowed students to infuse these shelters with new meanings. While the *laavu* holds contemporary significance in Finnish culture, the nearly forgotten *shieling* was reinterpreted through student research into the enduring traditions of the *laavu*. Students explored common themes such as connections to the landscape and the harsh climate. Discussions also revealed the need for inclusivity in the traditionally male-dominated *laavu* tradition, reflecting on community engagement in the *shieling* tradition. These insights shaped the welcoming atmosphere of the newly created gathering space, inviting everyone to experience the rich landscape of The Glasgow School of Art's Highlands & Islands campus together.

Conclusion

Although we feel this collaboration is a valuable and important contribution to revitalisation of ecocultures and northern knowledge, it only represents a beginning. The interdisciplinary and intercultural nature of the project successfully merged the communal and ecological qualities of both the *shieling* and the *laavu*. This integration not only strengthened connections across ecocultural traditions but also bridged diverse cultures, disciplines, and communities within the Arctic and beyond. The revitalisation process in our study weaves together ecological and cultural elements, blending tradition with innovation, and emphasising the dynamic interplay between the human and the more-than-human in northern landscapes. We hope that this collaboration provides a platform for further study and our insights gained may be applied to future live build collaborations.

Our results underscore the transformative potential of cross-border collaboration in higher education, demonstrating innovative ways to seamlessly integrate traditional and contemporary elements. This collaboration extended the educational experience beyond conventional architectural training, incorporating elements of environmental art, intercultural collaboration and intangible heritage. Students critically examined how their designs interacted with the environment, fostering a holistic approach to architecture. The field school reinforced practical construction skills alongside promoting student leadership in safe working practices, while deepening students' appreciation for the complexities of designing in harmony with natural and cultural elements.

Reflective discussions highlighted the project's success in preserving the traditional values of both the *laavu* and *shieling* while incorporating innovative design elements to meet contemporary needs. Although the online design process occasionally caused students to feel disconnected from the project's natural and cultural context, potentially overshadowing some traditional aspects, participants acknowledged that the project ultimately strengthened their ties to the landscape and local materials, enriching their understanding of ecocultural revitalisation through architecture. The project's unique significance lies in its blending of cultural aspects, introducing novel elements to the Scottish landscape. The constructed artifact was celebrated for its inclusive approach, fostering a sense of community and collective benefit, enhancing the landscape for everyone, not just its direct users. By pursuing more interdisciplinary and intercultural partnerships, we can uncover further innovative approaches to ecocultural sustainability.

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Stitching through Boundary Lines: Collaborative Art for Connectedness

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This inquiry is centred on examining dimensions of collaborative art process in the context of new genre Arctic art. We concentrate on fostering culturally sensitive revitalisation of traditions and their visual symbols, enhancing cultural diversity and vitality in the North. We explore eco-mythological symbols transcending geographical and generational borders from Ukraine to Karelia and the Arctic, and community empowerment in joint craft-making endeavours. Our main focus is on the revitalisation of embroidered symbols, and a sense of connectedness in the crafting process. Our aim is to understand different levels of the experience, meaning and impact of the collaborative art process.

The research emerged in the early summer of 2023 when the authors discovered a shared interest in sun goddess embroideries. The first author, Kovero, has partial roots in Karelia and Kravtsov's maternal lineage hails from Ukraine, both regions steeped in the tradition of embroidering goddess figures on ritual textiles called *käspaikka* or *rushnik*. The research is art-based action research (ABAR), to foster a sense of connectedness and empowerment among participants in the crafting process. Collaboration was carried out with Ukrainian newcomers to Rovaniemi, Lapland. The research tackles two questions: How can collaborative crafting create a sense of connectedness to different layers: nature, the cosmos, humans and other species? How can the embroidery of shared symbols enhance feelings of empowerment among participants?

Beyond Borders with the Ancient Craft Language

Our common ground with our workshop participants was built through the art process by revitalising the ancient craft language. Our base for the crafting is similar to Kailo and Heiskanen (2013), who have used an eco-mythological approach in their artistic work when crafting story-textiles. They derive their inspiration from ancient power symbols and ornaments that tell about the life forces and social missions of women. They refer to the nature-based communities, such as Finno-Ugric people, where women have had a powerful symbolic language related to spinning, embroi-

dering, weaving, sewing and creating. Even though the original culture and traditions are not reachable in the former forms, Kailo and Heiskanen (2013) have concentrated on the continuation and renewal of the best practices and values of the ancient cultures. They refer to the traditional ecological knowledge, which contains a deep knowledge of the relations of nature and humans and the rules of living together caringly and respectfully. Their focus is to regain past knowledge and move the mythic shuttle onwards, to revitalise the perceivable lively traditions with their Finno-Karelian, Baltic and Uralic nuances.

The embroidery heritage, connecting us with Ukrainian newcomers, is best found in ritual towels called *käspaikka* in Finland and *rushnik* in Ukraine. Säppi and Pelgonen (2018) show that these ritual cloths are connected tightly to Karelian and Ukrainian culture and have wide roots in the beliefs of ancient foremothers, Merisante (2016) reflects the embroideries of the *käspaikka/rushnik* to be quite cohesive in their subject manner in the subarctic regions of northern Europe, and she states that these embroideries do not follow geo-political boundary lines. Kelly (2010) says that these ritual artefacts had immense symbolic value and in use they gathered sacred and healing powers (Figure 1).

Kailo and Heiskanen (2013) reflect that the embroidered ornaments are depictions of the folk beliefs, ranging from Greek to Ukraine and Karelia, and to the northern area called the Pohjola. Kelly (1996) notes that these deeply rooted beliefs are connected to the seasonal cycles of the agricultural life, and that in the embroideries of the ritual cloths there is a dominant feature in the composition, the goddess: bringing the sun to the plants with upraised hands, growing the plants from her hands, protecting the crops with lowered hands and holding the seeds in the cups for the new cycle. Kelly continues that the rites of the seasons and these images of the Mother Goddesses with fertility symbols were necessary to the growth and well-being of fields and family, to the whole cycle of life. She also points out that in Ukraine, the goddess of agricultural harvests is Berehynia, who is often depicted with birds in her upraised arms. Merisante (2016) defines that in the sun goddess embroideries the figure is accompanied by the Tree of Life, plants, certain animals and sun symbols such as swastikas, rayed sun faces and a circle with a cross.

Kailo (2019) mentions goddess images in relation to the concept of the Golden Woman, who is a mythological cross-cultural figure in the Northern and Arctic contexts and beyond. She continues explaining that in northern Eurasia, among many people, there is a tradition that the personification of the Sun is a female deity, like the Great

Figure 1. Ritual cloths called *käspaikka*. Pictures on the left: cloths in the permanent exhibition of the Finnish Craft Museum, photos by Minna Kovero, 2023. Pictures on the right: the most right cloth is from an unknown maker, and the other of them is from the crafter Natalia Parfenova, both from the Finno-Ugric Collection of the National Museum of Finland (CC-BY-4.0).

Mother with different local names in various areas, associated with the Sun, light, yearly cycles, prophecy and peace. Kailo emphasises that in Finnic tradition, the Sun Goddess is Päivätär and that she can be seen as a Finnish aspect of the Golden Woman with her luminous life-bringing manifestations. Kailo and Heiskanen (2013) note that in Karelia the sun goddess Päivätär was later broadly replaced by the Virgin Mary, as were other similar goddess figures from the Baltics to Greece and beyond.

Knowledge about these symbols opens the way toward a deeper understanding of the embroideries with their corresponding myths. Kailo (2022b) notes that avoiding strict ethnic boundaries is a way of revisiting the past and its mythologies that go around and across the borders of the old North. Kailo denotes that textile art with ornaments and symbols, that carry the language of the Goddess, provides information if looked at openly without restrictive ethnic boundaries. She continues that this means considering the close historical connections between the Slavic, Scandinavian, and Finno-Ugric people, whose myths echo each other and whose Northern mythology can be reintroduced and recreated.

Art-Based Action Research to Promote Empowerment through a Collaborative Process of Embroidering

In our research we aim to gain a broad understanding of our research questions with the ABAR method, while pursuing our empowerment goals for the collaboration with participants. Relating to the artistic participatory method, Leavy (2020) points out that "visual art-based practices allow for synergistic practices that foster a holistic view of the research project, where there is a tight fit between the research goals and the methods employed" (p. 252). Jokela et al. (2019) emphasise that the objective of ABAR is to create solutions related to communities with interaction through art. They continue that with process-orientedness and stimulation of discussions, we can enhance the development of practices related to participation and communal thinking in art education. They state it is possible to enhance community empowerment and environmental responsibility by creating spaces for encounters and increasing a sense of community and a better understanding of self and the world.

We carried out ABAR on collaborative crafting together with Ukrainian newcomers in Rovaniemi, Finland. Embroidering sessions were held using natural dyed wool yarns on black woollen fabric. In the research, we focus on the participants' reflections on their experiences within the craft process and their interpretations of the embroideries. We made participatory observations, gathered questionnaires, and made photographic documentation. Visual material captured during the embroidery sessions supports and illustrates the study process. We analyse embroideries and the process with help of questionnaires and our conversations from the craft sessions. The main focus is on the embroideries and the participants' experiences, which are reflected in the answers to the questionnaires. We read and examined the data several times to map references and symbols of connectedness and empowerment. Our thematic analysis focused on evidence of a sense of connectedness and correspondences with the embroidery images.

We adhered to the ABAR principles (Jokela & Huhmarniemi, 2018), actively engaging in the research process by joining craft sessions and reflecting afterwards, as well as collectively gathering and analysing data. Our roles as artist-researchers are multifaceted. We proposed the theme around sun symbolism to be at the heart of our embroidery journey with the participants. Kovero, with an interest in the eco-mythological aspects of embroidered ornaments, and Kravtsov, focusing on nature connectedness and crafting with natural materials, contributed actively to the discussion in the craft sessions. Additionally, Kravtsov's mother tongue, Russian, aided in communicating with participants and translating the questionnaires.

Figure 2. Embroidering together in Cafe Koti. Photographs: Tatiana Kravtsov, 2023.

Excited by delving into the symbolism of the sun and sun goddess, we embraced the idea of collaborative embroidery alongside fellow enthusiasts. Inspired by the opportunity of cross-cultural collaboration, in September 2023 we met a group of Ukrainian students at Rovala school in Rovaniemi, where we shared our joint project and invited anyone interested, no matter of gender, age and background, in joining us on our embroidery journey. We introduced the project research intention and obtained signed consent from participants to use materials for the study. Throughout the autumn 2023, craft sessions were held with Ukrainian newcomers in various places in Rovaniemi including Rovala School, the library, a cafe, and the University of Lapland. Considering Northern material culture and the tradition of wool embroidery in Finland, we have chosen black woollen fabric as a basis for embroidery and natural dyed wool yarn. We embroidered on squares sized about 15x15 centimetres to make it comfortable to be held in the hands. Some of the participants were experienced with embroidery, while others remembered learning it at school. Together, we shared different stitching techniques, drawing inspiration from both traditional and contemporary embroidery books. Within crafting we shared stories, memories and images related to the sense of place and aspects of darkness and light experienced by living in the North (Figure 2).

Discussions with the participants spanned four languages: Finnish, Ukrainian, Russian and English, intertwining seamlessly as we communicated. We did not view many languages as a barrier; rather, we embraced the diversity and found joy in it. We were intrigued by delving into the names of various things—symbols, plants, and more—in different languages. Additionally, the participants showed enthusiasm for expanding their vocabulary in Finnish, particularly concerning embroidery and crafting. Beyond verbal language, communication through crafting transcended words. "Different languages do not separate people," reflected one of the participants in the questionnaire.

Eco-Mythological Relations through Sun-Related Symbols

In our collaborative crafting, sun and sun-related symbolism served as a tool, mirroring the forces of nature and myths, which are also tightly connected and seen as inseparable in our theories (Figure 3). Kailo and Heiskanen (2013) reflect that with eco-myths we can open the entangled skeins of oppositions, balancing overreactions by having a holistic view. They continue that the goal of the myths is to serve the community by uniting, raising and enlightening, and that myths carry an eternal uncompromising vision to lead

Figure 3. Beginning of the process in the early autumn 2023: studying sun-images and sketching for embroidery. Photographs: Minna Kovero, 2023.

people into a spiritual eco-ethical balanced way of life. The myths are "an umbilical cord to the past and compass-placenta to the future" (p. 27).

Kailo (2019) talks about the Northern areas and the Sun's life-giving powers, which have been particularly important in the Arctic North, where the sun can stay away for many months. She continues deepening that thought with the knowledge that there are numerous ancient motifs, from Siberia to Samiland, cross-cultural presentations of abstract solar wheels and discs and more realistic sun discs and solar goddesses. With these and other sun-related symbols, we found meanings while crafting and connections to our place and time. We talked of the light and atmosphere in our familiar places and embroidered shapes and themes that seemed to arise from different grounds, while bearing similarities.

One sun-related ancient symbol is the swastika. Its vast history has been widely studied, already before the nazis turned the meaning of this symbol upside down. Wilson (1896) refers to the swastika as the earliest known symbol: its history extends to all around the globe and the symbol was widely used in prehistoric times, and in the prehistoric countries of Europe, Asia and America swastika was used in everyday life as a charm or token of good luck or good fortune. Wilson emphasises that it has had many meanings, for example, related to the sun and goddess, but it has always been ornamental. In the U. S. National Museum report, Wilson (1896) states that the swastika has not been used by European people in modern times, except in Lapland and Finland. He continues about national Finnish patterns for embroidery called "oblique designs" which he interprets as swastikas (p. 956). It seems that Komulainen and Tirronen (1979, p. 50) refer to this kind of swastika embroidery with the Karelian name *vääräpää*. It is interpreted to be originally a metaphor for the sun, the source of all life, with a connection to fertility and prosperity.

In our and participants' embroideries, we seem to be close to the ancient sun-related ornaments. Kailo (2022a) says that the ancient matriarchal symbol swastika mediates knowledge, like other symbols. Some of our group's embroideries feature elements of swastikas and some others depict eight-pointed stars, which can also be seen as flowers. Komulainen and Tirronen (1979, p. 51) describe this star-flower image, called *kannuksenpyörä* in Karelian embroideries, to be as common an ornament as the swastika. Kelly (2011) describes these images as symbols of the sun: solar rosettes or eight-pointed sun-flowers and swastikas, the whirling forms with hooks depicting revolving of seasons, and some more simple forms like fire-crosses, spirals and other circular or rhombic shapes. These can all be found in our embroideries as images and combined images representing different symbolic forms (Figure 4).

Figure 4. Embroidered images arranged in four rows by the theme: goddess-flower, swirling sun, star-flower, balanced growth and peace. Photographs: Tatiana Kravtsov, 2024.

Some of our embroideries depict goddesses and some flowers that can be interpreted as goddesses (Figure 4). One of them is *Berehynia*, in yellow and pink with a swirling sun head and raised arms, that was called by her name already during the craft process. Säppi and Pelgonen (2018) believe that *Berehynia*, a symbol of life and fertility, the goddess that protects with raised arms, is the most mystical symbol of traditional Ukrainian embroidery (p. 103). She can also be seen as a version of the Golden Woman, that Kailo (2022a) refers to, the Great Mother of the North, that can be seen as a prototype of the life force principle. Kailo continues that the Slavic and Finno-Karelian embroideries depict the life force as a goddess, combination of a woman and Tree of Life, which is related to the importance of the cycle of nature and the returning growth. She also states that eco-myths forward an animistic worldview. Embroidery images can give us clues on how to personify nature. Embroideries give us mirroring surfaces to embody and understand the rhythms of nature and the power of growth and organic balance.

Many sun and sun-related symbols represent the life-force. In our crafting sessions, sun-related images connected us to forces of nature, enhancing the appreciation towards the sun's life force. One of the participants associated the sun symbol itself with "life, infinity, non-conflict, birth". With the sun we went beyond man-made borders to nature's uniting happenings. We were renewing the visions of a balanced cosmos by meditatively embroidering unity, peace and growth symbols. We expanded our understanding of natural cycles by strengthening the connection to nature through natural images and enhanced togetherness between people and cultures through eco-myths.

Sense of Connectedness through the Embroidery Process and Materials

Kailo and Heiskanen (2013) state that ornaments have been used to strengthen companionships with the living landscape and animals, and to ensure the cycle of life and conditions of sustainable living. They continue that women both embroidered protecting yarns of life to their fabrics and spheres of living and wore the ornaments, which were seen as an important part of the continuity of the creative powers of community and nature. Heiskanen (2017) depicts the crafts in relation to the sense of participation and connection to the creative powers of the world. She says that our foremothers embroidered patterns by creating beauty out of the beauty of nature, and this way they were part of creation, ensuring the continuity of their family and life.

Figure 5. Natural dyed wool yarn, embroidering together, assembling embroidered pieces into the final garment. Photographs: Minna Kovero and Tatiana Kravtsov, 2023.

Engaging in creativity, like crafting, fosters a sense of togetherness, while also providing space for self-expression to thrive respectfully. In a discussion on craft and its essential dimensions, Gauntlett (2011) deepens the idea that 'making is connecting': it appears crucial and up-to-date yet intertwined with a notion of craft—a bond between people, handmade items, and the natural world—that is timeless. We feel aligned with the idea of 'making is connecting' which implies that our society grows stronger and more compassionate when we become more attentive to the voices and narratives around us (p. 227). During our embroidery sessions stories were shared and heard among participants, while more personal and quiet experiences of our own emotional landscapes took place as well.

Engaging in embroidery can be seen as travelling across the black woollen surface, mirroring a journey within the mind. Ingold (2010) explores the terrains of the mental and material being merged: "to walk is to journey in the mind as much as on the land: it is a deeply meditative practice. And to read is to journey on the page as much as in the mind. Far from being rigidly partitioned, there is constant traffic between these terrains, respectively mental and material, through the gateways of the senses" (Ingold, 2010, p.18). While the hands meditatively stitch a colourful image on black woollen fabric, our minds wander through times, places and stories. As one participant reflected: "The process of embroidery calms me, for me it is a kind of meditation…In my thoughts,

I return to Ukraine to my childhood, to places where I felt well and calm. And while I embroider, my journey in my head continues." This experience illustrates how the realms of the mental and material blend seamlessly through the embodied meditative dance of the needle on the soft woollen fabric.

With joint crafting, we strengthened the connection with the natural world through embroidery with natural dyed wool (Figure 5). We enhanced our understanding of sheep and plants, which provided the crafting material to us. Knowing the origin and processes of the wool and natural dyes promoted deeper respect for the materials and togetherness with nature. One participant reflected on crafting with wool and natural dyed yarn, the experienced feeling of "being one with nature, with the care of all living beings for each other". While materials from nature are gifts, the aspects of direct responsibilities we carry towards the natural world need to be considered (see Jakobsen, 2017). As Atkins and Snyder (2018) say: "we are not just visitors passing through, but co-creators in making of things" (p.131).

The dialogue with the natural environment emerges from the embodied experience of the material and verbal communication. During the embroidery session, in our minds together with the participants, we travelled between forests in Finland and Ukraine, sharing knowledge about the plants and mushrooms that can be used for natural dyeing. We also shared experience and feelings related to wool which many of us remembered seeing our grandmothers spinning or knitting. Mäkelä (2019) explains that based on her own experience, a subtle interaction with the material is enabled through sensitivity towards the nonhuman material world, recognizing it as being an integral part of it (p.175). Care and respect for nature and its gifts were brought into the discussion among the participants. Atkins and Snyder (2018) highlight, when we work with natural materials the connection with nature and sense of belonging become present..

Atkins and Snyder (2018, p. 107) emphasise the sacred dimensions of creative processes in alignment with the wisdom of the ancient and indigenous ways of seeing all entities (including humans) being integrated within the creative energies of the natural world. In other words, when humans are recognised as a part of bigger forces of creation, art-making is seen as a 'holy act'. They explain, within this attitude involving a sacred intent in creative making, the materials are gathered and treated with deep care and respect.

Heiskanen (2017) analyses how embroidery is related to caring and connecting to nature. She describes the yarns of nature, the lines you notice by carefully looking around, like the rays of light that fall onto the ground or reflect from the water. She continues that these observed and sensed patterns of nature are mirrored and repeated, embroidered

to pass on the knowledge. She summarises the thought by reflecting that understanding the language of these images makes the cycle of life and nature more close-knit, which helps to create a way of living based on care and affection.

One participant shared that crafting and communicating in a circle is some kind of energy exchange. In the company of others, while crafting, you exchange experiences and refresh the mind. It can also be a place for new ideas to emerge as well as space for meditation and prayer. Heiskanen (2017) states that the embroideries were also seen to be connected to the otherworldly, affecting the creative essence of existence. She continues that in the past, the border of this and the other side has been porous: the sacred and the profane have flowed into each other like states of dreaming and being awake, ancestors experienced the world as an entity of flows where interaction and communication happened through energetic patterns.

Based on these views, we, the authors and participants, have observed and experienced a sense of connectedness across different dimensions. Coming from diverse cultures and places, we bear the wisdom of the Earth passed down by our ancestors. Such wisdom carries a universal essence, transcending the boundaries of place and time. Some of the precious traditional knowledge has been overshadowed by the rapid pace and technological progress of our modern lives. We, the authors, believe that through collaborative crafting with natural materials and reconstructing the ways of crafting symbols, we pave the path to recovery of that wisdom. Atkins and Snyder (2018) state that as we turn our minds to the ancient and sacred, we revive and nurture the sense of connectedness with the larger forces of creation that our ancestors once knew and felt.

Revitalisation of Cultural Heritage within the Arctic Context

New places and times affect stories and revitalise the manifestations of myths. Kailo and Heiskanen (2013) talk about the intricate stories that have moved across ethnic boundaries and been recreated in accordance with time. They say it is central to myths that they are recreated continuously from pieces of old knowledge and crumbs of mythology and that some parts are selected and combined into new cultural stories. They describe myths as eternally moving lines that do not have a beginning or end, and that they are ensembles of symbols, wholeness of meanings that have travelled a long way. Similarly, embroidery symbols are recreated when we adapt to new surroundings. We renewed embroidery figures in our collaborative process, some participants adapted patterns

more to local aesthetics while others stayed tightly connected to rooted figures and stories. The wool materials, local dyes, and stories from the North brought aspects of recreation to most of the figures.

Related to the embroideries of our participants, the connection to sun stories seems to be two-way. The mental images of the sun induce the creation of images that inspire stories, and stories inspire other images. We embroider our stories of the sun, which then leads to more embroideries about the powers of the sun, like images of growth, a common theme in the past sun-related crafts. One example of this kind of past craft is a summer solstice rite that Kailo (2019, p. 123) refers to: the Finns, Sami and other Nordic peoples made special symbolic sun-rings out of leaves which were hung up to honour the bringer of the light. It tells how sun symbolism has deep connections to symbols of growth. In our collaborative embroidery, there are various growing elements and flowers (Figure 6).

Kailo (2022b) talks about reviving art as a matriarchal practice, revitalising art that contains a multidimensional worldview, that combines body and spirit, reason and emotion, human and animal and other opposite mindsets that mark modernity. She promotes seeking and discovering remnants, decoding and re-expressing hints of archaic matriarchal way of living. She adds that it also means art with eco-spiritual layers that guarantees an eco-socially sustainable future. Kailo and Heiskanen (2013) summarise that the embroidered patterns and ornaments that refer to the traditional ecological knowledge presents the community's eco-social identity. Heiskanen (2017) notes that embroideries play an important part in revealing the cultural heritage of women: the meaning of collaborative exhibitions and embroideries is to strengthen women's ecological identity and cultural historically comprehensive relation with nature. This is done by making visible the common heritage of foremothers and nowadays crafters and assembling a conception of the worldview and culture of our ancestress.

When asked about the relations between contemporary and traditional, one participant referred to her fragments of embroideries and recalled that during the embroidery process, she wondered what the people from old times wanted to convey in their embroidery images. For her, craft making was more traditional, but she thought that she would like to transfer it into the contemporary world by implementing it on modern objects. Another participant stated that we are not embroidering in the candlelight, the world is moving forwards and so are our creations, arts and crafts. They are evolving. One participant considers our embroideries to be a modern style with a revival of traditions and reflects that in the process of mixing modern culture with old traditions, new interesting styles are born. She summarises it with the thought that "new ideas echo past

Figure 6. Above: planning the composition. Below: Artwork exhibited at the Relate North Symposium in Umeå. Photographs: Minna Kovero, 2023.

experiences and are rooted in traditions". She also used this approach in the embroidery process by varying methods of inspiration: when experiencing a lack of creativity, she used books on the history of embroidery for inspiration.

The collaborative art piece, *Stitching Light through Boundary Lines,* was exhibited in the Relate North exhibition Beyond Borders, on a branch (Figure 6). It reminded some of us about the folk scarfs with ornamental edgings, which refer to the traditional way of protecting from evil. Merisante (2016) brings forth that the edges of clothing and ends of household textiles were embroidered to create protective symbolic borders that shield both the wearer and the home: edges of the ritual towel, *käspaikka / rushniki*, were covered with magic symbols for fertility and protection, for daily tasks and ritual occasions. She continues that Finnic embroideries, like goddesses with solar symbols, also go around the openings of the clothing protecting their wearer: these kinds of embroideries in the liminal areas are experienced to protect one's porous self by closing vulnerable entry points to supernatural powers.

Our collaborative artwork can be also seen as a night sky with stories, black fabric as a base for the lighter colours to shine from it like stars. Heiskanen (2017) reflects on the ancient ways of embroidering the occurrences of the night sky. According to Heiskanen, the images depict the movements of the stars and tell stories of how they are intertwined with life happenings and mythical levels of the communities. She continues that ornaments have structured the world, reality and cycle of the year, the star-sky embroideries have served as a cultural compass and strengthened the group's identity. The most widespread embroidery image, the swastika, can also be seen as a depiction of the movements of the sky. Heiskanen (2017) says that the rotation of the Big Dipper during different times of the year makes a swastika form, although the swastika is most often seen as related to the sun. She seals the insight with the thought that it is the ornamental language people examine, and from which they interpret the sun's movements and understanding of its nature. In this way, the *Stitching Light through Boundary Lines* has multilayered depictions of the swirling powers of the sky. Meditating the idea that we live under the same stars and sun cycles, can foster the feeling of connectedness.

Discussion: Empowerment through the Craft of Connectedness

Kailo (2019) states that eco-myths of peace and balanced relations can help mend the planet's broken webs, and that images like Mother Earth can provide powerful metaphors for relating to nature and the cosmos, to each other and other species. In our

crafting sessions we were connected on these different levels, with eco-myths, crafting materials and the process. We found connectedness to nature through the sun images and to the cosmos through the mythological levels of these images. The connectedness to each other arose through co-creating and sharing stories while crafting, and with other species through use of natural materials (Figure 7).

Kailo (2022a) notes that we remember our dependence on nature better when we keep all species of nature as part of our life sphere by commemorating them with rituals. Based on this idea, we, the authors, can state that our collaborative crafting moments were *Craft of Connectedness* rituals reaching the layers of cosmos, nature, human and other species (Figure 7). Empowerment arose when the four levels swirled together and intermingled togetherness.

Related to visual art-based synergistic processes Leavy (2020) summarises that the creative process and verbal follow-up can empower participants by giving them control, valuing their experiences, and taking their perspectives seriously. In the ABAR the focus is on the interaction of co-artists, co-researchers and participants, and in sharing and empowering (Jokela et al. 2019). According to them research for the North contributes to 'art of art education' (Jokela et al., 2019), including orientation towards northern environments and cultures, and nature with all of its values, from the inherent value of nature to aesthetic and mythological values. New genre Arctic art education supports decolonisation of the North and revitalisation of ecocultural knowledge, cultural heritage with tacit knowledge, focusing on strengthening diverse identities, cultural pride and well-being (Jokela & Huhmarniemi, 2022).

Kailo (2022a) points out that myths create a feeling of continuity with respect to the past generations, and they also advance the commitment to the local identity, to the local land and regions. We, the authors, have considered the possibilities of integrating into the local culture through craft-making. This experience, engaging in art and craft activities, can foster a stronger sense of belonging to the community. Härkönen et al. (2018) discuss the possibilities and roles of handcraft traditions in contemporary art in facilitating cultural sustainability in the North. They argue for the potential of shared craft experiences in enhancing intercultural dialogue and supporting the integration of immigrants into northern cultures. Such interaction nurtures cultural exchange, mutual learning and bonding between people (Härkönen et al., 2018). In our embroidery sessions, we discussed the northern nature and traditions associated with embroidery and natural dyeing, while the participants shared their knowledge about similar traditions from Ukraine. One participant wrote in the questionnaire: "These gatherings help me feel less lonely in a foreign country."

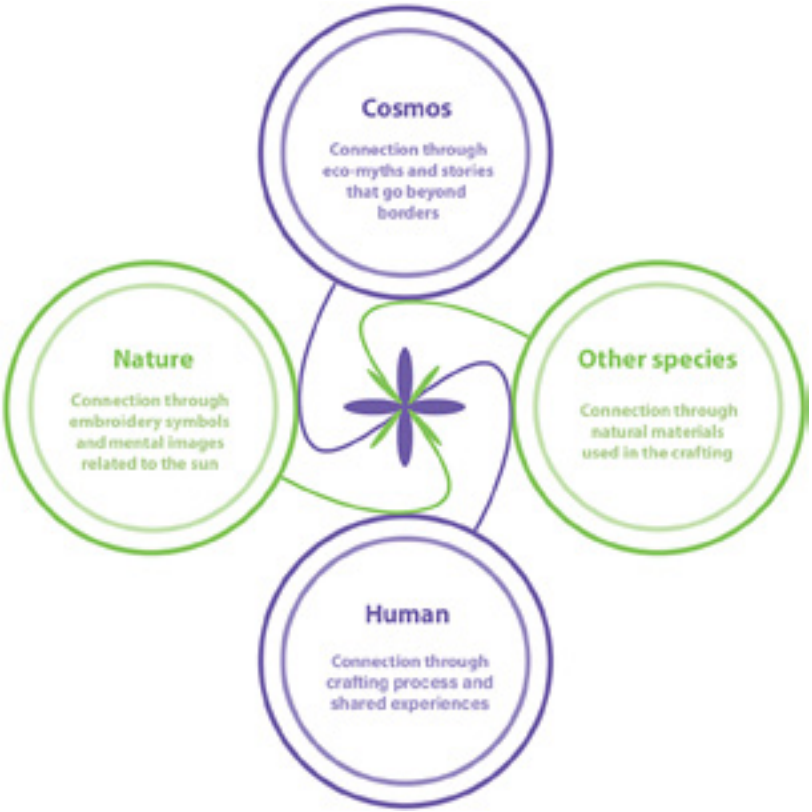

Figure 7. *Craft of Connectedness*, swirling for empowerment. Diagram by the authors, 2024.

The multilayered power of the embroidered images can be seen from the participants' associations. One participant began to sing a song, which combined many themes we were dealing with in our craft sessions and embroidery images, that tell a layered wish for peace. The lyrics tell a story with the sun image in the centre of an anti-war vision. The song indicates that people from old to young want to have a clear blue sky and ongoing radiating happiness without the dark clouds of war. The lyrics also give an idea that by drawing the sun we make pure childlike wishes for the motherlike good in our existence. This resonates with the eco-mythological themes of our project: images of goddesses, caring, light, harmony and connectedness beyond borders.. The participant re-

membered this song from childhood when she heard that the theme for the embroidery was the sun. She continued the idea related to the sun and peace by expressing her feelings through her embroidery (see Figure 4, Bird of Peace). With her embroidery, she wanted to convey her wish for peace throughout the globe. A slow, meditative process of stitching with others allowed a natural flow of emotions and memories.

All of us, participating in the embroidery, took different approaches to creating images through imagination and creativity. Patterns crossed borders from local to different Finnish styles and from the Ukrainian traditional to contemporary. How conscious was this? Can the use of Finnish patterns help to mirror the traditions of the area and help settlement in a new place? Does remembering the symbols of one's homeland ease the missing of one's home and longing for one's root places? Or are all the images more in the moment of now, and reflections of our longing for a balanced way of living? While embroidering sun symbols, the images enable moments for a visual prayer or wish, for the peace of our inner and outer worlds. We have a space in the Arctic light to connect to past memories, visualise new ones, and shape our identities. By stitching the personal stories and memories together we make a connection to a broader sense of place. Cross-cultural communication also enables an imaginary journey across generations and places.

With a mutual desire to share knowledge and learn from one another, the language of embroidery and ornaments was instrumental in strengthening the sense of connection between the participants. The process revitalised traditional crafting and led to consideration of the local material culture, the northern region, and the meanings of sun images. Theories of connectedness and eco-mythological bonds became tactile when crafting collaboratively. The discussion in this chapter highlights the fluidity of borders across generations, cultures and nations, particularly concerning the shared mythological symbols as one principal in the new genre Arctic art education.

Conclusion

In our crafting, we sought connection with newcomers through craft, traditions and the images in reference to them, such as sun images and depictions of female sun goddesses. By transcending geographical and generational borders, we aimed to find traces of a common identity and deeper understanding of each other. One way to do this was to focus on themes and images related to our common craft heritage. By studying and practising crafts and their rooted language with eco-mythological aspects, we crossed the boundaries of nowadays cultural borders.

Collaborative crafting is a form of art education that brings together many levels of empowering knowledge and experiences. Embroidery-based art practice provides a possibility for the combination of traditional and contemporary craft approaches and, thereby, a chance to experience the fluidity of borders, across generations and cultures. Through communal craft-making there is a possibility to study the intersection where the participants' diverse cultures and emotional landscapes converge. Symbolism related to natural elements leads a way to process nature and culture relations and the connections beyond time and borders. Northern material culture, like wool and natural dyed yarns, inspires a deeper understanding and connection to Arctic nature. Woollen embroidery is a good method in the new genre Arctic art education because it is adaptable to nuances between traditional and contemporary. While wool with northern natural colours is bearing strong material connection to locality, embroidery is reaching out to diverse cultural traditions, being a versatile technique to revive figures and symbols with vitality.

The collaborative artwork of our process took the form of a patchwork garment, serving as a manifestation of the collective endeavour to revitalise the symbolism of the sun and its empowering essence. The collaborative process and art-work brought together different interpretations and expressions of sun-related embroidered symbols. In this way the craft, process and result, revitalised the embroidery practices and connections to shared nature-related culture. Ecocultural knowledge, from tacit and material to traditional and spiritual, contributes to creation of empowering connections on multiple layers of life. In the future it would be interesting to test this method and the four-level swirling diagram with other collaborative craft cases.

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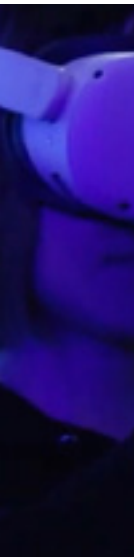

Crossing the Virtuality Border: Immersive Narratives of Local Culture and Histories with Design Students

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Art and design education has always sought new angles and explored techniques, pushing the boundaries of conventional ways of working. In a field where creativity is at the core of the work, new tools, methods, and ways of working can be a source of inspiration and open a world of new possibilities (Jokela & Huhmarniemi, 2018; Meyer & Norman, 2020). Technology offers new means to cross the borders of art and design education, and technology-mediated tools can offer new opportunities for exploration and creativity (Kalving et al., 2024). This chapter addresses the theme "beyond borders" by introducing how immersive technologies and virtual reality (VR) have been integrated into design education. We demonstrate these technologies in the context of immersive narratives, drawing inspiration from the North's history and culture, the Finnish Lapland. We address the challenge of integrating emerging technologies and the topics of cultural history in design education, where the emphasis is on the concept creation and research through design (Zimmerman et al., 2007).

With immersive technologies and VR, it is possible to create digital representations that are experienced as life-like environments and integrate 3D characteristics and dynamicity of movement. For the use of history and cultural heritage as inspiration for design, this gives new opportunities (see, e.g. Škola et al., 2020). By going beyond the physical context, designers can bring alive historical environments and augment the current moment with dynamic digital elements overlaid on top of our tangible world. Old, archived materials can be used as a basis for digital designs, and local heritage and narratives can be illustrated in a fresh manner. Adding interactivity can make these virtual spaces even more immersive and engaging. Creating narratives for virtual environments poses its own set of challenges and opportunities in terms of how to engage the user (Dooley, 2017).

Through a case study conducted in Autumn 2023, we explore the possibilities of designing interactive experiences introducing local history and culture and the process of setting design students on to the task. We describe the concept creation of immersive experiences with local narratives that utilise 3D modelling, augmented reality, and VR technologies to

bring the stories alive. Our research focuses on the design aspects and the holistic user experience (UX) design. We present how the topic of creating immersive experiences with local histories and culture was introduced in a university's master's level interaction design course. We present the process of introducing the design task elements step by step into the education context and two cases that integrated immersive UX design into the design students' coursework. Methodologically, our research approach is positioned in the tradition of research through design (RtD) (Zimmerman et al., 2007), HCI research emphasising empirical methods (Kjeldskov & Paay, 2012), and rapid prototyping-oriented approach, as typical in human-computer interaction and interaction design field. In research through design approach, a larger research phenomenon is addressed through design prototypes. RtD signifies that designers can bring on board valuable input to societal questions, having a more prominent role than just delivering design artefacts.

Our work addresses the research question of "What aspects need to be considered when setting design students to work on concept design tasks which integrate local culture into an interactive application?". Our research consists of two main activities. Firstly, we present design students' concept design task and results utilising extended reality (XR) for local narratives and the results. Secondly, we introduce the reconstruction of an old local school building, which was destroyed in World War II. The school was recreated as a 3D model based on old floorplans and photographs from the 1910s and can now be viewed in (VR). The historical modelling case was then introduced and assessed in the course with design students, and its challenges and opportunities were explored. In addition, we also present and discuss the challenges of addressing this type of design task when educating design students in UX design and in the context of cultural tourism. Previously, Wilcox et al. (2019) completed a survey on Human-Computer Interaction education and concluded that it lacked research on design pedagogy. They highlighted that in the HCI education, the focus is often on interaction design and prototyping. Some specific instructional strategies include, for example, 'technology- and application based approaches' and 'creative design process' (Wilcox et al., 2019).

The work presented in this chapter is linked with an EU-funded project, Xstory - Lapland narratives with experience technologies, which aims to tell local stories by using XR technologies, such as VR experiences and AR applications. The project includes collaborating with local stakeholders and demonstrating the innovation and development potential of these technologies for the use of both locals and tourists. Combining arts and technology through design allows interesting use cases and prototypes to be developed and shared publicly. The first author worked as a project manager, while the second au-

thor was hired to create 3D models based on historical archives. The third author taught the interaction design class and was the principal investigator of the project. Our research adds to the discussion on Arctic Design, where one research direction is entwined with interactive technologies (Häkkilä & Johansson, 2018). By taking the local cultural context and narratives as the focus of the design project, the approach seeks to pave the way to educating design students to create cultural tourism concepts where the designs connect with local knowledge networks and pay attention to the influential environment, which both have been deemed as important in Arctic Design (Usenyuk-Kravchuk et al., 2020).

Cultural Heritage through Virtual Worlds

Local narratives and cultural heritage can provide rich source material that can be utilised, for instance, in education (Turpeinen, 2012) and when designing experience-driven services for tourists (Dionisio & Nisi, 2021) and local citizens (Purkis, 2017). VR offers tools to explore ancient sites that no longer exist and today's sites and locations that are difficult to access or fragile, and the number of visitors must be restricted (Aiello et al., 2019). An example of an almost inaccessible cultural heritage site, simulated as a 3D replica, is a virtual visit to the Salla graveyard from World War II, now located in Russia. Placed in the local museum in Salla, Finland, the virtual graveyard visit allows visitors to explore the 3D simulation of the historical graveyard and place a virtual candle on a grave in the virtual world (Häkkilä et al., 2019). Another example is the UNESCO heritage site Batcave in Sicily, where a 3D virtual model was created with laser scanning and photogrammetry. The purpose of the prototype was to protect a fragile ecosystem that has a high value in nature and historical aspects. In addition, it has provided a tool for studying the morphology of the cave (Aiello et al., 2019).

The power, as well as the complexities of modelling historical environments, have been recognised in prior art. A fine example here includes the 3D model of the city of Athens (Kaskampas et al., 2011). The aim of the work by Kaskampas et al. (2011) targeted building a complete information systems model of the old city centre, considering the aspects of use, legal status, images, and drawings with the spatial information and geometric documentation in 3D. Today, also a vast number of contemporary 3D city models have been constructed, often through 3D reconstruction and data integration, using, for example, photogrammetry, laser scanning, and data with geographic information systems and their combinations (Julin et al., 2018). In addition to these aspects, digital 3D worlds, including video games, positioned in a historical context have been a

source for studies addressing educational, historical, and storytelling aspects (see, e.g., Mortara & Catalano, 2018). Especially the Assassin's Creed game series and its discovery tour feature have been acknowledged for allowing the user to explore the historical environments and experience somewhat of a travel back in time, for instance, to Ancient Greece. Paananen et al. (2022) report that the users especially appreciate the freedom of exploration in the historical world, whereas the usability and game control inputs are often regarded as challenging. Also, 3D worlds can be challenging for users who are less familiar with such technology (Sundar et al., 2015).

The development of different tools has eased up the creation of not only 3D virtual worlds but also capturing single objects in 3D. Technology has provided developers and designers with more possibilities for creating digital content. Photogrammetry technologies, capturing a physical object in 3D by combining the photos taken from different angles, has advanced rapidly, especially with the development of Artificial Intelligence (see, e.g., Murtiyoso et al., 2022). This has enabled the digitalisation of different cultural heritage objects as virtual models and their placement in virtual worlds. The approach enables, for example, keeping the physical artefacts safely and intact in a museum vitrine, while the visitors can explore the virtual 3D model from different angles and zoom in for details. Hirsch et al. (2024) proposed different ways in which technology can support recontextualising cultural heritage as well as how it is communicated and preserved, highlighting the role of multiperspectivity.

Digital Storytelling for Cultural Tourism

Storytelling and immersive narratives are often an essential part of experience design when developing holistic applications that build on cultural heritage or local histories. Digital storytelling applies technology to mediate narratives and often integrates various multimedia elements such as videos, audio, images, animations, and text. This approach enriches the storytelling to a multimodal user experience. Digital storytelling on mobile and immersive platforms allows an interactive UX to be developed. Here, users can actively participate in the story by making choices, exploring different paths, or interacting with different elements within the narrative. Moreover, immersive experiences can be applied by utilising 360 videos or virtual environments with head-mounted displays.

Cultural tourism has emerged as a growing direction for tourism. The notion of cultural tourism builds on the understanding that tourists seek more than just entertaining experiences from the destination (Gao, 2023). Storytelling has the means to offer tour-

ists insights into people's lives, histories and cultures and offer experiences with the local cultural heritage in a manner that demystifies the local communities and dismantles stereotypes that often take place in the tourism market (Sarantou et al., 2021). However, cultural tourism inherently causes the reconstruction of culture as a tourism experience, which can lead to tension and conflicts with the locals in questions related to authenticity (Gao, 2023).

The complexity of balancing the authenticity, visitor experience, and local cultural values in cultural tourism destinations has been highlighted in prior research, and authenticity generally is a very topical theme in tourism research. Three key approaches to cultural tourism in digital transformation have been identified: objective, constructivist, and postmodernist (Shehade & Stylianou-Lambert, 2020). The objective approach focuses on maintaining the authenticity of cultural heritage sites and bases authenticity on the object itself. The constructivist approach aims to "transcend the binary distinction between the authentic and inauthentic" (Olsen, 2002, p. 162), and the authenticity depends on the viewer's perception of it (Shehade & Stylianou-Lambert, 2020). According to Olsen, "authenticity becomes a feature that is attributed and ascribed to some objects and conditions by social processes" (2022, p. 162), for instance, through rituals and performance. The postmodernist approach rejects the problem of authenticity and inauthenticity, which become irrelevant as the definition of reality is centred around the individual. The approach sees that there is no collective definition of reality, and the reality and authenticity depend on the individual's reaction. In the postmodernist approach, the borders that separate the copy from the original disappear, and the authenticity is judged based on the quality of the offering and its ability to convince the audience (Gao et al., 2022).

When digital storytelling is considered, the challenge of balancing the authenticity of the content must be considered. This is especially important, as when seeking to design engaging storylines, e.g., for gamified applications, one must also consider the UX and usability of the whole application. For instance, when utilising historical characters as inspiration for game characters, one must consider their authenticity, life timeline, and correct style of outfits. This design complexity was demonstrated with a history game about the town Kemijärvi, which introduced local histories in the context of a virtual treasure hunt-type errand (Luiro et al., 2019). Various ethical issues in reconstructing cultural heritage (Bülow & Thomas, 2020) and interactive storytelling (Rouse, 2019) have been presented, which can also be necessary for designers to consider. The ethics related to working on such projects have been explored also by Häkkilä et al. (2023), who developed ethical guidelines for a digital service that includes Sámi heritage materials.

Emerging technologies, such as VR, mixed reality, and gestural interfaces, offer new opportunities for digital storytelling. In the northern cultural context, examples where emerging technologies have been applied to cultural-historical digital storytelling include an interactive heavenly hunt installation, referring to the star constellations and traditional stories behind them. The user interacts with whole-body gestures with the installation, and the gestures are visualised as part of the heavenly hunt legend on a starlit sky (Genc & Häkkilä, 2021).

Recreating a Historical Building with 3D Modelling

As part of the study and integrated as a course material and example for students, a 3D model of a historical building was created. The 3D modelling was completed by a second author and featured a school designed by Finnish architect Wivi Lönn, built in 1914 and

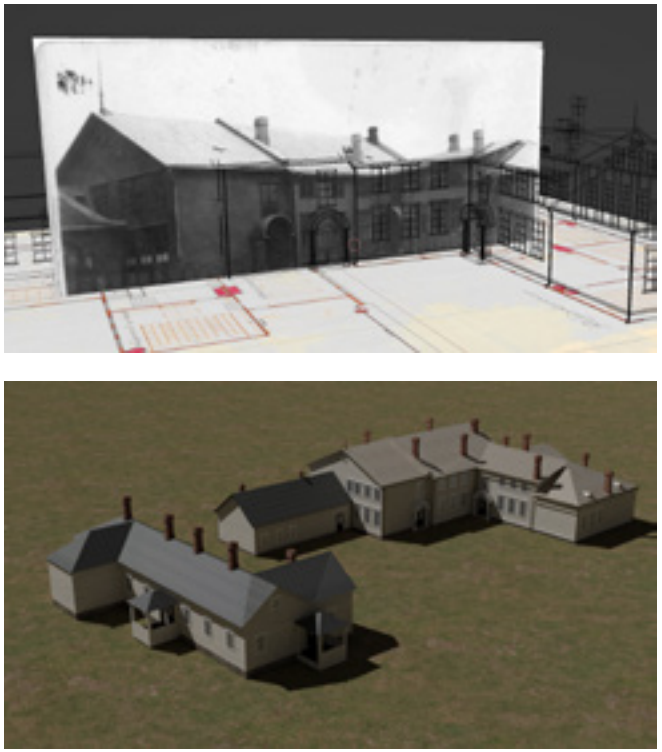

Figure 1. Constructing a 3D model of a historical school located in Rovaniemi, Finland, based on an old photograph and floor plan records (above) and the final model (below). Screenshots: Tommi Kiianmies, 2023.

destroyed during the war in 1944 (Teppo et al., 2017). There were surprisingly many images of the outside found in archives, which was the focus, but the inside was not modelled, and there were not so many photos of it either. The 3D model was built in Blender by overlaying the structure on top of the architectural plans and including archival photos in the scene for more detailed reference (Figure 1). Some decisions had to be made, such as including some later added-on parts of the building that were not in the original architects' drawings but were present in the images. As historical knowledge is never perfect and without gaps, some design choices related to mediating authenticity and believability had to be balanced.

When the 3D model was complete, a rendering was made with grass as the background and with more realistic lighting, as seen in Figure 1. Based on the 3D models, old photographs of the school, and the inspirational lecture, the students were asked to write their thoughts on the opportunities and challenges the 3D-modelled school could offer.

Design Workshop and Task for Students

The study described in this chapter took place in a master's level interaction design course at the University of Lapland, where 18 students were taught by the third author. The master-level interaction design course focuses on introducing different interactive technologies to design students. It includes tasks and assignments where students create interactive application concepts and design user interfaces for them. Students were informed orally about the research project and its objectives, and the project acted as a client during the course.

The concept design exercise with the students featured several phases. Firstly, the first author of this chapter gave an inspirational lecture to get into the topic and introduce the design context. They presented previous work and gave insight into the challenges and benefits of designing for historical contexts and how 3D modelling can be part of the process. Ethical challenges and the cultural context were highlighted, such as how the local culture would be presented. Then, the context of the exercise was introduced briefly, followed by introducing the student task. The class was divided into four groups; each was assigned a different topic.

The four concepts addressed the topics and design contexts of a winter sports site, Arctic Circle, a reindeer farm, and a husky farm, which are relevant for Rovaniemi. The students created a concept related to their context, and the technology they included was required to have a tangible User Interface and a QR code for the user to scan. Students then selected a user group that they would design to make the process easier

for them. In the end, the students were required to prepare a 10-minute presentation in which they presented the context, target group, and concept, including the design process and a physical demo to show during the presentation.

After three weeks, the first author returned to the class and held a short workshop, showing the 3D model and asking the students to put up post-its related to what kind of positive and negative aspects they could think about related to it. The results were then discussed through a group discussion. Finally, the student groups gave presentations on the topic, presented physical prototypes of their ideas, and received questions and feedback from teachers and project XR domain experts in the audience.

Results

We first share the results of the workshop on 3D modelling historical buildings and then the results of the students' coursework.

After showing the 3D model of a local school and sharing some of its history and how it was destroyed during World War II, the students were asked to put their thoughts on the pictures with post-it notes (Figure 2). The focus was on what opportunities (blue) and challenges (orange) this case and similar can offer for designers and applications.

Most of the challenges pointed out by the students were related to the historical accuracy of the digital model, 8 out of 18 post-it notes. Five students also mentioned

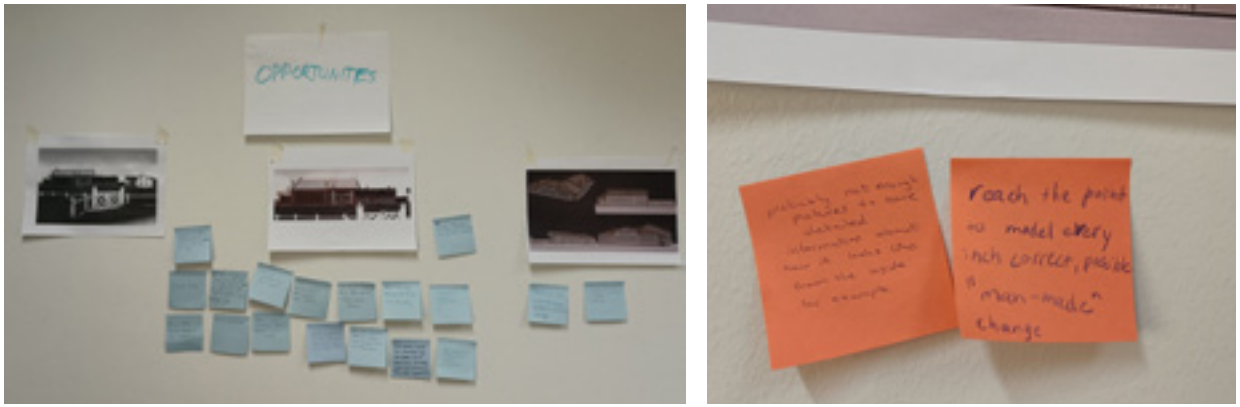

Figure 2. The post-its were placed on old pictures and new 3D models of the old school in two categories: opportunities and challenges. Photographs: Siiri Paananen, 2023.

the inside of the building and were interested in how the interior would be modelled. The aim of having the era shown was called for, “Don’t construct it to be too modern - let that time and vibe show (visual).” There were also doubts about the relevance of the school being selected: “Why is this building interesting? Why not normal houses?”. Critical views of the project were presented as well, such as “..makes more sense as a passion project than as some sort of usable and practical thing” and “since the location no longer exists, it’s really difficult to come up with a use case for something like this.”

Figure 3. Examples from the students’ coursework on creating design concepts for immersive experiences with local history and culture, with four different design concepts assigned randomly. Photo collage by Jonna Häkkilä, 2024.

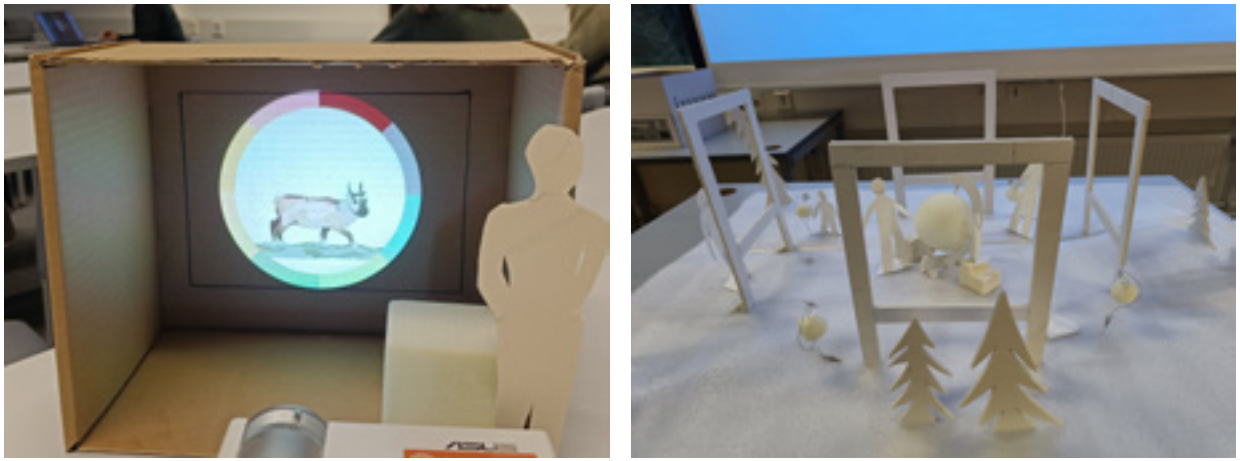

Figure 4. Student concepts. Left, a projected window to the yearly season cycle and the life of the reindeer. Right, Augmented Reality at the Arctic Circle, the frames are used as AR markers, where users can point their phones for immersive content. Photographs: Siiri Paananen, 2023.

In regards to the opportunities, some of the most mentioned were educational purposes, having immersive content, storytelling, architectural history, and showing the 3D model to local people who might remember their experiences. The accessibility aspect was mentioned, "maintaining accessibility to history," as well as "..a very interesting setting for a game." Overall, the 3D model was perceived to be a backdrop for various things that could be expressed through the virtual modality. The immersive nature of the 3D model was noted as "diving into the world of another time, learning." The responses also included using various modalities, such as "Create interaction by letting the user walk around hearing stories from students" and "..you could sit and listen to classes."

All of the student projects had an insightful approach to the design context and used available possibilities, such as landscape, nature, and other local things, in their work (Figure 3). Two of the design outcomes featured Augmented Reality technology, one with a mobile phone and another with a bigger screen; the third one featured 3D content on a big screen, and the fourth one featured VR glasses.

Three of the concepts featured something happening on site, while the husky ride case featured something one would watch after the experience remotely from one's home. The husky ride featured a souvenir that acts as a physical VR controller and can

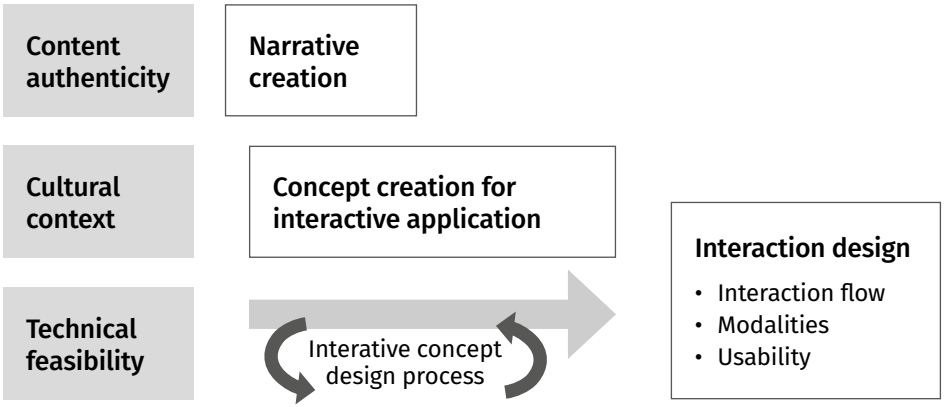

Figure 5. Framework for the concept design process for developing interactive application or service concepts for local cultural context, applied in the design education context. Figure: Jonna Häkkilä, 2024.

be used to reminisce about the trip. All four design concepts included the local context in a big part, such as showcasing local sports history in 3D format or explaining different aspects of the Arctic Circle through many physical frames. The use of augmented reality and 3D can provide a crossing over from the physical world to one with stories told and visualised.

The groups also showed low-fidelity prototypes to test and showcase their ideas; two of the groups made a miniature version of their idea to show to the class (Figure 4), while the other two acted out the scenario in front of the class. In the reindeer farm concept, a forest was used as a background to visualise the yearly cycle of the reindeer and follow the eight seasons of the North while seeing the reindeer's life. In the concept of the Arctic Circle, the aim was for the user to see different topics through each frame and also be able to take photos of themselves in the context.

In Figure 5, we bring together the different aspects that emerged as relevant attributes in the design education context when developing interactive applications or service concepts for a local cultural context. At the beginning of the concept design process, content authenticity, such as historical accuracy, cultural context, and technical feasibility, should be considered. The narrative creation and the interactive concept creation should consider these as guiding factors and be aware of the technical, conceptual or ethical boundaries set by them. During the concept design process, reflecting on the

content authenticity and accuracy, the local cultural context, and technology choices provides ground for iterating and improving the concept idea. After this, the design process proceeds to the interaction design phase, with the conventional steps where the interaction flow is drafted, the interaction modalities decided, and good usability is ensured through design heuristics and user testing. As an answer to our research question, the framework illustrated in Figure 5 can be applied in designing student education when setting the student to a task for developing interactive applications or services that draw inspiration from the local culture. The outcoming concept designs can be utilised and taken into use, for instance, in the domain of cultural tourism or cultural education.

Discussion

This chapter examines the intersection of immersive technologies and research through design, particularly focusing on how these technologies can merge digital and physical aspects in concept creation in interaction design education. Moreover, using historical materials and local heritage also bridges the gap between the past and the present. These themes were visible in the student-created immersive application concepts, which included revisiting experiences, showing the local lifestyle, the reindeer and yearly cycle, and local sports history.

According to our experiences, providing design students with historical materials as inspiration when asking them to create concepts for digital storytelling on local histories offers several benefits. Authentic historical materials, such as the photographs and floorplans of the old school building, provided students with a deeper understanding of the cultural context and set them up with an orientation towards authentic local histories. This approach set an example that helped them to consider more authentic and culturally relevant digital storytelling concepts. This type of task also facilitates the engagement with cultural heritage and local histories through design education, as students are exposed to wider perspectives of cultural materials.

Demonstrating the use of historical archive materials served as an example of using rich visual and narrative sources. Witnessing how to use authentic historical materials can encourage student to visualise authenticity and accuracy in their storytelling concepts. In a world where using generative artificial intelligence for design is becoming more common, using historical archives and building on verified source documents sets an example, which teaches us to conduct research, verify historical facts, and present information in a way that respects the integrity of local histories. Indeed, the idea of

using historical archival materials was directly adopted by one concept, which utilised historical sports photos as a source. The 3D modelling of the old school provided the workshop with reflections of authenticity and accuracy, as well as storytelling through local people. These reflections can also assist in engaging with the ethics of working with cultural heritage, similar to Häkkilä et al. (2023).

Jokela et al. (2021) highlight that in the context of Arctic Art and Design, it is important to consider cultural and social sustainability, meaning respecting cultural diversity and heritage, collaborating with locals, and sharing the benefits with the region. Results of the student work show that addressing local history and demonstrating the use of authentic historical materials helps students build skills in critical thinking and sustainability. Analysing and interpreting historical and cultural historical materials require critical thinking skills and strengthen their ability to construct meaningful narratives for storytelling concepts. It encourages them to think beyond everyday perspectives and to put effort into finding authentic information about the local culture. This is an important skill to develop and learn, and it helps to make informed design decisions with respect to storytelling concepts. Using historical materials in digital storytelling projects raises awareness about the importance of preserving heritage and cultural heritage, thus promoting cultural sustainability. Similarly, making students consider the local context and nature guides them to take the environmental and sustainable aspects into consideration when doing the designs. This is an important skill to learn and can help future designers recognise the topics and mitigate the risks of conflicts that may arise in the context of developing cultural tourism services (Gao, 2023). This also resonates well with design pedagogical objectives, where students are expected to become independent, self-analytical, and critical thinkers (Tovey, 2015).

As a practical note, we acknowledge the limitations and challenges of conducting teaching tasks for design students, including the domain of VR and immersive technologies. Despite the fact that immersive technologies were targeted for use in the concept creation exercise, the practicalities also led us to utilise conventional methods in the classroom. Earlier research has pointed out that the adaptation of VR technologies in design education is hindered by the lack of infrastructure for multi-user groups in classrooms and the additional effort required to set up the technical system (Häkkilä et al., 2018). This was also true in our case study and led to the preference for showing the virtual models in the classroom as 2D presentations as PowerPoint presentations and printed images that everybody could see simultaneously rather than as actual VR experiences. The students, however, had tried out the immersive VR technologies earlier during the course.

Even though providing new opportunities for design, we also acknowledge that using a particular technology and approach may limit the creativity and versatility of the created concepts. For instance, VR technology's limited features supporting multimodality affect the concepts' nature. Moreover, when planning such tasks for design student education, balancing the available resources with the design task needs to be considered. Modelling the 3D content consumes time and effort, and one must keep that in mind when setting up the student tasks as well as preparing the materials for teaching.

In our work, we set ourselves to address what needs to be considered when setting design students to work on concept design tasks that integrate local culture into an interactive application. This is studied by developing a framework for guiding this type of concept design process. As a design pedagogical contribution, we have fused our findings and experiences reported in this chapter into a framework (Figure 5) that aims to support design education teachers, students, and practitioners when setting a task for designing interactive concepts for local cultural settings. The designers should consider the authenticity and accuracy of the content and materials, the local cultural context, and technology choices for their feasibility when starting to create the narratives and the interactive application concept. In our case, historical accuracy, the northern context, its cultural and natural aspects, and the limitations and opportunities of immersive technologies should be considered as guiding factors in the concept design. In the interaction design education context, these aspects should be considered before going to the actual interaction design phase.

Conclusions

We have presented a case of crossing the borders in design education by taking immersive technologies and merging the line between digital and physical in concept creation. The process of including local historical context into an interaction design university course through a lecture, 3D-model, and student projects. Overall, the students grasped the presented task well and developed interesting concepts that took both the local context and the restrictions introduced by the technology into account. The challenges encountered included an adequate understanding of the possibilities and limitations of the technology, addressing historical accuracy, and creating compelling storytelling for the immersive experience application or service concept.

Including local perspectives and context for design education can provide interesting cases and explorations for design students, who, in this case, were a mix of Finnish

and international students. Such tasks can ground their work with local lifestyles and provide different design challenges that encourage them to think about the possibilities and ethics related to including local culture in their design work. We acknowledge that our work is limited by a short design process and the lack of VR implementation. In the future, we will continue our work on modelling historical buildings for VR exhibitions and exploring methods for interactive storytelling.

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Digital Fabrication and Sustainability: Beyond the Borders of Art, Design and Craft

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Digital fabrication technologies in art education and artistic practices have challenged the notion of the borders between and among art, design and craft arenas for the past ten to twenty years. Creative practitioners' and art educators' experimentation with digital fabrication continues to muddle the borders among material literacy, computation, electronics, how we understand the 'digital' and 'physical', what hands-on skill means, and the spectrum of control and expression (Johnston, 2017; Knochel, 2018). Artists and artisans have always explored new techniques and emerging technologies, yet the fluidness of 'hybrid' digital-physical making – how practitioners experiment with adjusting software inputs to hardware outputs to 'handware' – brings computational principles into art and craft in often quite a philosophical manner that goes beyond discussions of tool, process and product.

Moreover, these tools (small-scale laser cutters, 3D printers, milling machines, etc.) emerge from a technical engineering-centric milieu espoused as the 'next industrial revolution' (Gershenfeld, 2005) that aims to democratize technology and push manufacturing to become more ecologically sustainable and more just (Gershenfeld, 2005; Kohtala, 2015, 2017; Stein, 2017). The tools have been much discussed in education research lines of enquiry (and conferences) known as FabEd, MakerEd, FabLearn and similar, particularly aligned to constructionist Papertian and Deweyian approaches – and particularly for science, engineering and mathematics topics (Blikstein, 2013; Song, 2020). As a group of art and design researchers, educators and expert practitioners, we thereby found ourselves discussing together what it has meant for us to take these types of tools out of this engineering imaginary and into art.

Digital fabrication technologies in the context of art education are still surprisingly little discussed in the literature compared to the STEM focus (science, technology, engineering, mathematics) (Katterfeldt et al., 2015; Song, 2020). What *is* this practice, and what impacts does it have on us, our students, on society? Is this a new iteration of Do-It-Yourself (DIY) in art (Cramer, 2019); is it a form of craftivism (Greer, 2008); or is it simply a medium as any other in art education where students explore the interrelation

between material and process? We see there are more nuanced ways to understand digital fabrication as material culture that transverses formal and informal learning environments (Sheridan et al., 2014) and where maker culture, fab labs and makerspaces have become something of the poster child or harbinger of the 'participatory turn' in society (Chilvers & Kearnes, 2016; Smith et al., 2013).

In this dialogical chapter, we explore how we use digital fabrication and making within physical-digital crafting settings, as means to teach and practice art, but also as technologies embedded in practices, processes and communities – and as a way to understand potential pathways for sustainability transformations. As members of the Arctic Sustainable Arts and Design (ASAD) thematic network, we come together from three departments in two universities and from the perspectives of art, design, craft and sloyd (Nordic craft education: see Reincke, 1995), in research, education and practice. Through our dialogue, provocative and critical questions related to technology in society, citizen empowerment, and the role of materiality in understanding sustainability issues also arose. We wondered together if digital fabrication is relevant to crucial sustainability issues in the Arctic, considering its socio-ecological challenges and cultural richness. Such tensions between traditional technologies and products and emerging digitally-enabled technologies are co-present and constantly entangled in digital-physical settings, as seen in Figure 1 below. In the following section, we elaborate more on digital fabrication as a topic of practice and research, as well as our research questions and methodology.

Background

Digital fabrication refers to the use of computer-aided manufacturing tools, such as CNC (computer numerical control) routers and milling machines, laser cutters, and 3D printers, and CAD (computer-aided design) software, in designing and making objects. The tools are particularly associated with those that became widely available to the general public in the last ten to twenty years, are small and desktop in size, are often free and open source, and are intimately connected to fab labs and maker culture.

In the early 2000s, as patents on rapid prototyping technologies used in industry expired, low-cost versions of the equipment were developed and spread, through the ethos of open-source hardware built on FLOSS development principles (Free/Libre Open Source Software). The RepRap 3D printer developed at the University of Bath (Jones et al., 2011) sparked the development of a whole industry of desktop FDM (fused deposition modelling) 3D printers, which members of the public came into contact with in

makerspaces and fab labs. These community technology workshops also began to spread worldwide in the early 2000s, bringing digital fabrication, DIY cultures, and electronics tinkering into the public realm and promoting maker culture as a levelling force that would "democratize" technology, drive development in science and engineering, and foster everyday creativity (Gershenfeld, 2005). Makerspaces were also introduced into museums and libraries, as well as schools, where they were seen as ripe environments for constructionist learning and fostering technological literacies (Blikstein, 2013; Katterfeldt et al., 2015).

Twenty years later, there remains an emphasis on how digital fabrication nurtures invention and skills in engineering and computer science, whether the tools or the fab lab are in a museum or in a classroom. Criticisms of the tools and practices remain, such as the gender gap, i.e. fab labs tend to attract boys more than girls; environmental impacts, i.e. increased electricity consumption and use of fossil-fuel-derived plastics (De Decker, 2014); social impacts, i.e. as equipment only available to higher income populations and those with enough previous education to be able to use it (Lindtner & Lin, 2017); and deskilling, i.e. distancing one from hand-skills working directly with materials. We acknowledge these criticisms and we also propose that the embodied and living relationship that we have with 'technology' is important, not only as a topic in art, but as how we make art, as knowing-through-making.

In this chapter, we explore the following research questions: in art, craft and design, how have we experienced the ways these technologies transform traditional methods, and how do they contribute to new educational paradigms? How have we witnessed the broader societal impacts of digital fabrication, such as fostering sustainability and democratizing technology access? Examining the role of digital fabrication in Arctic or near-Arctic areas, how have, and how can, these technologies support local communities and traditions?

As this chapter is not based on an empirical study in, for example, a classroom, we have employed a rather novel technique of generating and then analysing dialogue among the four authors as domain experts, to gather comprehensive insights (*cf.* Netolicky & Barnes, 2017). That is, we use our discussion as research data, effectively treating it as a group interview of experts. This approach is grounded in problem-centred expert interview methodology, which combines qualitative interviewing techniques to investigate implicit expert knowledge (Döringer, 2021). The method allows us to capture the nuanced perspectives and experiences of our diverse group of educators and practitioners and a deeper understanding of the complex dynamics at play in our fields of study. In

Figure 1. 3D printers and traditional weaving at MIT-FabLab Norway, Lyngen. Photograph: Cindy Kohtala, 2012.

the following sections, we thereby aim to retain some sense of a dialogic narrative among experts, as opposed to presenting interview excerpts. The resulting section themes reflect our research questions, as well as themes that emerged generatively through our dialogue.

Current Perspectives on Digital Fabrication

We see that introducing digital fabrication into art, design, craft and sloyd, and design carries with it certain tensions, many of which have been discussed in both grey and academic literature (e.g. Katterfeldt et al., 2015; Johnston, 2017; Gonzales Arnao, 2019; Needles, 2020; Song, 2020). Tensions that practitioners and educators need to tackle include how digital fabrication techniques are integrated into both discourse and material practice: are practitioners and/or students able to push creative boundaries and explore new possibilities, or do the tools inhibit creativity or foster de-skilling? (See e.g. Smith, 2017; Song, 2020.) We have seen how establishment of a digital Sloydlab creates infrastructure in educational settings that can integrate digital and traditional methods, in order to enhance students' skillsets and prepare them for future challenges. Reflective practice allows us to profoundly consider immediate effects as well as longer term consequences of using digital fabrication, including the ability to cultivate ourselves and our students as *becoming* works of art (or design) in collaboration in the 21st century, as opposed to being individual creators in modernist terms (Rousell & Fell, 2018). Because of the media hype around maker culture and 3D printing, some opportunities become under-considered, such as the transformative potential of digital fabrication to foster cross-disciplinary learning and the ability to combine knowledge and skills across domains, such as in STEAM (Science, Technology, Engineering, Art, Mathematics) education (e.g. Binkley et al., 2012; Katterfeldt et al., 2015; Durall et al., 2022). In the following subsections, together we discuss digital fabrication in current art, design and craft practice and education.

Integrating Digital Fabrication into Art Education and Artistic Practice

Annamari Manninen: I am an art teacher, working as a teacher trainer, artist and researcher at the University of Lapland, Faculty of Art and Design, Department of Art Education. In my teaching and art, I have always been curious to explore new technologies,

including programming, AI and digital fabrication. I use 3D printing, laser cutting and robotics in a media art and programming course, as a way to bring material and real-life dimensions into digitally made art and learning programming, especially for art education students who are more comfortable with traditional visual arts techniques, in order to lower the threshold to the world of digital making and fabrication as tools for making artworks (see Figure 2). I want to show them that digital art and traditional art are not opposites, but rather how the range of media is widening.

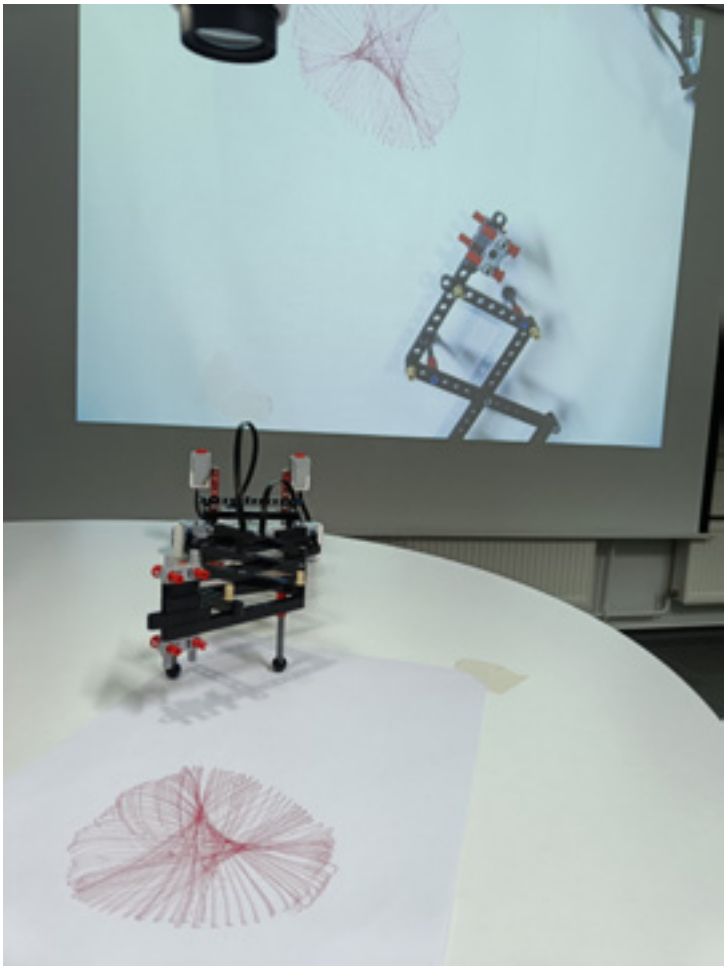

Figure 2. Drawing robot: student work from a media art course as an application to learn coding by Lea Kinnnunen and Ruu Kumpulainen, art education students, University of Lapland. Photograph: Annamari Manninen, 2023.

Today 3D printers are more affordable and available in schools, and some libraries in Finland offer facilities to easily access printing. There are also smaller and easier-to-use laser-cutters which have started to be part of schools' craft/sloyd workshops. There is a science education network in Finland (called LUMA centres) that promotes STEM pedagogy and maker culture (see Aksela et al., 2020) by offering events, training, teaching materials and even lending equipment. In this context, I see it valuable to introduce future art educators to this field, bringing art and design content to widen science education towards art and science education (STEAM, see Needles, 2020; Song, 2020; Durall et al., 2022).

Sara Rylander: I am a teacher educator in the Department of Creative Studies at Umeå University. In my own practice, as an artist, maker, and creator, I am always in a creative process — a kind of genesis of ideas that emerges within the material world and from materiality itself. In my artistic practice, I explore the borderlands between art, design, and craft, combining traditional techniques with modern digital tools (see Figure 3). This blend allows me to explore new possibilities and push the boundaries between the handmade and the digital.

Manninen: In my practice, the use of digital fabrication has expanded the tools and means of making art. This has required experimenting, acquiring new kinds of knowledge and a new approach to the process. As a new dimension digital fabrication brings the blending of the virtual space and actual physical space, the interaction between the material and digital objects and tools. Instead of making prototypes to learn to master a new technique as in traditional art media, different try-out versions help us understand how the equipment works and the logic of getting the results desired (as seen in the differences between hand-modelling vs. 3D modelling and printing explored in Figure 4). The training of the hand has changed more towards the training of the mind in computational thinking.

Digital fabrication questions the uniqueness of an art object, as the digital model can be multiplied and printed several times. The possibility to use and share 3D models makes it even possible to use and modify models done by someone else, questioning even the artist as the maker of the virtual model.

Figure 3. Marquetry is a traditional woodworking technique that involves creating intricate designs by inlaying pieces of different coloured wood veneers into a wood surface. The image shows veneer, cut in the laser cutter with the motif of a caterpillar cluster. Photograph: Sara Rylander, 2024.

Figure 4. The variation of virtual 3D modelling to printed object and hand-modelling to virtual form by 3D-scanning, examples by Annamari Manninen. Photographs: Annamamari Manninen, 2023.

Integrating Digital Fabrication into Sloyd education and craft practice

Rylander: As a teacher educator, my primary focus is on craft/sloyd education. This school subject develops practical skills, creativity, and problem-solving through hands-on crafts and tool use in textiles, wood, and metalwork while also promoting cultural heritage by passing down traditional techniques to future generations. To deepen our understanding of how digital tools can enhance sloyd — a subject rooted in our traditional and cultural frameworks — my colleagues and I (Magnus Wink, Nicklas Burman and Niklas Wahlström) established a digital Sloydlab within our department. This lab aims to explore digital fabrication within the sloyd framework and provide students with insights into modern production techniques.

Digital fabrication transforms our roles, as practitioners, educators and researchers in several ways, one key aspect being the *transition of craftsmanship*. Artisans are increasingly merging digital technologies with conventional methods to create innovative crafts, as highlighted in, for example, Johnston's work (2017), and this evident transition goes contrary to common fears among crafters that traditional methods are vanishing. Integrating digital programs and platforms into traditional craftsmanship has the potential to enrich and broaden craft rather than diminish it. Digital software

Figure 5. The creation of this small series of leather breast bags utilizes a handcrafting process where leather is shaped using moulds cast from authentic breasts, supported by digital fabrication technologies. A fusion of craftsmanship and contemporary technology. Photograph: Sara Rylander, 2021.

and fabrication equipment can facilitate new forms of expression and achieve greater precision. However, this integration also carries the risk of undermining the uniqueness of artefacts by enabling mass reproduction. In craft, the value also often lies in the uniqueness of each piece.

Manninen: I am interested in how the idea of digital and virtual is more approachable through engaging in digital fabrication. At the same time, it highlights the meaning of materiality and embodied learning, which are at the centre of learning and teaching arts and crafts (see Anttila, 2015), and which are often neglected when looking at learning in schools.

Rylander: For me as a practitioner, the inclusion of digital tools in the crafting process leads to a more experimental approach. (See Figure 5.) Nowadays, the laser cutter is an integral part of my craft process. I have a good understanding of its capabilities, limitations, and how to run it, as well as how to create and manage the digital workflow. However, working with the laser cutter changes my process. It is no longer an intuitive dialogue between myself and a well-selected material slowly taking its final form in my hands. Instead, I end up with a trash bag full of various explorative pieces in a material which sometimes suits the laser cutter better than the very object I am making. Although I can visualize the final result and

anticipate issues with digital models, the true essence of craft emerges when I physically handle the object. It is at this point that I fully engage my senses and react intuitively. This hands-on interaction often compels me to make detailed adjustments like fine-tuning the shape or scaling the patterns, leading to further iterations and refinements. Such a process involves navigating through multiple iterations or pieces, fundamentally transforming the traditional craft process into something more iterative and less bound by the singular creation of objects. This shift not only reflects on how craftsmanship is evolving but also on how we adapt to and integrate new technologies into our artistic expressions.

Fostering Design Skills Through Digital Fabrication

Ylva Fernaeus: I am an associate professor in interaction design at Umeå Institute of Design as well as at KTH in Stockholm. My teaching is within the fields of tangible and embodied interaction, with my research focus on hybrid crafting with technology as a careful, playful and critical practice, always at interplay with the fragility and limitations of the material world and the living. My relationship to crafting and digital fabrication thus comes both from my own research practice, but also from the context of teaching interaction design, mostly to engineering students, and most typically with a background in computing or media technology.

I have led several studies related to traditional studio crafts, collaborating with for instance silversmiths and leather makers. Beyond this explicit focus on hybrid crafting, I am interested in scale both in time and space, from the design of tiny interactive jewellery, to large scale outdoor play, as well as studies of technology, from the actual uptake of recent gadgets to a 150-year-old Jacquard loom still in use (e.g. Fernaeus et al., 2012). One thing I want to highlight from my teaching practice is the beauty in how creative and personal expression through the handmade sometimes works as a bridge for entering the sometimes intimidating world of electronics, and how manual making often is a central part also in new fabrication processes.

Cindy Kohtala: I am a professor of design-for-sustainability at the Umeå Institute of Design, Umeå University, and my research focus is on maker culture, open design, and people working collectively and materially on sustainability issues. I have also taught new design students the principles of design processes through the theme of open design and maker culture. Digital fabrication shows students and novice designers how designs can be shared and forked in the 21st century, an emerging design paradigm that departs from old conventions of proprietary industrial design of consumer products.

At the same time, I also see that there is a digital fabrication design aesthetic that can globalize and anonymize DIY material culture, such as the ubiquitous MDF laser-cut press-fit boxes to house circuit boards. This becomes design-from-nowhere (Suchman, 2002) and contradicts maker culture's promise that design and production will become localized according to site-specific community needs.

Manninen: I would also draw attention to the trend in education towards building multidisciplinary and interdisciplinary knowledge and skills as part of 21st century skills (see e.g. Binkley et al., 2012; Katterfeldt et al., 2015); introducing digital fabrication with no superimposing demands inherently combines skills from several disciplines. For example, there is understanding form and the design process, understanding the qualities of the materials and limitations of physics and engineering, added with the ability to control the equipment with numerical parameters. Moreover, I have a research interest in connecting contemporary art with multidisciplinary learning (Manninen, 2021), and connecting digital fabrication in these endeavours ensures promising explorations.

Future Perspectives on Digital Fabrication

We see that the media hype around digital fabrication needs to be interrogated against its promises: claims that digital fabrication represents capacities for communities to produce the things they need on demand, rather than relying on environmentally detrimental mass production chains. Research on local production of open hardware and user innovation highlights cases of community resilience in the Arctic (Obydenkova et al., 2018; Usenyuk-Kravchuk et al., 2022), but there are few such cases documented. In this section, we reflect on digital fabrication and its futures, both inside the art and craft studio and outside of it. Our discussion highlights tensions when considering digital fabrication and ideas about sustainability in society, emphasizing the need to align digital practices with sustainability principles. Integrating sustainability into educational curricula and practice can ensure that new technologies complement rather than contradict sustainable values. Careful consideration and adaptation of digital fabrication processes can help reconcile these tensions and foster more sustainable practices in art, design, and craft.

Can Digital Fabrication Foster Sustainability Transformations?

Kohtala: I see the promises of maker culture that are widely espoused do have potential to hold true, that tinkering and DIY with digital fabrication is a better alternative to mass

production and consumerism. There is potential for more production done according to need, rather than according to the capacity of a factory, the output of which needs to be pushed onto consumers through advertising (See e.g. Carson, 2010).

Moreover, I see the material experimentation that people do, incorporating digital fabrication to explore ecologically oriented solutions and material circularity, to be crucial, to embed new practices into their lifeways (Berglund & Kohtala, 2020). Marres (2015) calls it "material participation", and Schlosberg and Coles (2016) see this as an emerging form of environmental activism, as a sustainable materialist social movement. As early adopters of digital fabrication, these activists are crucial actors in shaping what values and practices become attached to these tools in an ever-increasing digitalizing society.

Fernaeus: The topic of sustainability is increasingly central to my work, which I try to address from different perspectives. Obviously, we need to explore this in terms of materials and technology itself, how we can build things that last, that can be repaired and that have a small environmental footprint. One area that I am currently fascinated by is human-powered technology, that is, how electronic devices can be powered by physical movements and interactions. We currently see this combination of manual and digitally driven fabrication tools, such as in some new Jacquard loom weaving systems (see e.g. Wu et al., 2024).

Much of the maker culture surrounding the practices of digital fabrication draws on the disruptive Silicon Valley dot com innovation frenzy, with the implicit ideal of producing new Kickstarter gadgets. This of course is also grounded in a contemporary mainstream culture of design that is obsessed with, or at least tends to celebrate, the new and fresh, above the care and maintenance of the old. I think with the global environmental, economic and political situation, this will likely change, no matter whether we like it or not. The future will require a more local caring and sensible making and using of products, and here digital fabrication and hybrid crafting could play a major role. Sustainability and digital fabrication for me means repair, local production of e.g. open source hardware, and possibilities to blend different types of making, combining the handmade with the machine made. An example is how 3D printers are used to replace small broken parts of complex geometrical shapes, allowing everyday products to be repaired.

Rylander: Access to digital fabrication tools raises important questions about democracy in technology use. Fab labs and makerspaces have spread widely, but their locations are often concentrated in urban areas or institutions like universities, potentially limiting access for individuals in rural or underserved communities. This geographic and economic disparity prompts a discussion about the true democratic nature of these technological advances. Who is able to access these resources? Could, for example,

incorporating digital fabrication into school curricula help democratize access, thereby creating a more inclusive and equitable educational environment?

Manninen: Another question to consider is if laser cutters and 3D printers have actually reduced consumption, or have they simply added a new kind of product and needs to the market?

How Environmentally 'Sustainable' is Digital Fabrication?

Rylander: Reflecting on the numerous physical iterations that result in waste after a crafting process involving digital fabrication, I am left feeling deeply conflicted, especially given the strong emphasis on sustainability in Swedish sloyd education. This waste directly opposes the core values of sloyd, which prioritize sustainable practices. According to Hofverberg and Westerlund (2021), sloyd education in Sweden emphasizes integrating sustainability in the curriculum through focused interactions with materials. This approach is encapsulated in three key learning outcomes: utilizing material fully to minimize waste, opting for sustainable materials, and valuing craftsmanship to foster a lasting appreciation and utility of crafted items (Hofverberg & Westerlund, 2021).

At the same time, because integrating digital fabrication alongside traditional methods requires not only a deep understanding of materials, but also new skills, we can better prepare students to navigate the evolving landscape of craft and design. Understanding materiality is key: one must know the appropriate materials to use and ideally predict how they will behave and whether they are suitable for the intended artefact. As new materials continue to emerge, understanding their properties is increasingly vital. Craftsmanship, deeply rooted in centuries of material knowledge and refined techniques, becomes even more essential in this context. This traditional knowledge not only helps us effectively and sustainably use these materials but also ensures that we can innovate responsibly in our creations. Blending traditional techniques with modern technological skills fosters a comprehensive understanding of materiality, sustainability, and innovation, ensuring that the next generation of sloyd teachers are equipped to meet future challenges.

Manninen: In the context of making art, I find it contradictory to demand sustainability from digital fabrication if we at the same time use acrylic paint, ceramics (especially with glazing), or other traditional art materials that are not organic nor possible to recycle. The traditional approach to art has aimed to produce artefacts that endure over time (see Sederholm, 1998), which still underlies the traditional drawing, painting, printmaking and sculpting techniques. Considering sustainability in visual arts thus forces us to continue

what the postmodern paradigm change started: from rethinking the aims, meanings and uses of art (see Lacy, 1995), to reconsidering the use of materials from a sustainability perspective. Emphasis on the process has inspired more ephemeral art forms and materials, for example, exploration of natural plant-based pigments (see the guide for natural colours in visual arts by Lauronen et al., 2021). With digital fabrication, this means focusing on the reusability of the equipment and reducing the ecological footprint of the materials. This raises the demand for laser cutting materials and 3D-printing filament that would not be as durable as possible, but plant-based, recyclable or reusable. Thus we need digital fabrication to be seen also as a media for art, not only for utensils that require durability.

Kohtala: Again, we see a tension between our creative needs to explore and experiment and if digital fabrication practices are 'more sustainable' than something else. (Than what? Mass production and consumption? Consumerist values?) Kris De Decker (2014) has addressed the environmental issues in digital fabrication, and many critics draw attention to the wide use of fossil-fuel plastics and printing of useless gadgets or Yoda statues in maker culture (e.g. Morozov, 2014). Therefore we laugh a bit at the fab lab meme in Figure 6, while we know we need to shape digital fabrication and hybrid-craft practices towards sustainability goals.

Figure 6. Fab Lab meme, created by Þórarinn Bjartur Breiðfjörð, 2024.

What Roles Do or Can Digital Fabrication Play in the Arctic?

Kohtala: This is a tricky question and there is no clear answer. I see that digital fabrication serves remote Arctic communities and entrepreneurship in ways that are little discussed. The fab lab in Lyngen in the far north of Norway is more of a community centre than a technology workshop, for example (Kohtala & Bosqué, 2014). (See Figure 7.)

Manninen: Typical qualities of the Northern and Arctic lifestyle are self-sufficiency and resilience. This means the skills to hunt, fish, and pick berries and mushrooms to be able to make a living in an area with no large industries for income all year round. When hardware stores and repair workshops are far away, people need the skills to make, fix and repair their tools, cars, clothes, and so on. Living in small communities and with long distances thus forces residents to take a more active role and acquire craft skills needed in everyday life. Of course, the Arctic areas are diverse and also include urban cities, but the attitude of do-it-yourself might still be more common than elsewhere.

Figure 7. MIT-FabLab Norway, Lyngen. Photograph: Cindy Kohtala, 2012.

The questions of sustainability are even more in the focus in the Arctic, where any changes and effects on nature are very visible and affect the way of living. In the Arctic region's way of living, the border between culture and nature is blurred since the natural surroundings, weather, and the drastic changes of seasons affect everyday lives. This forms a particular Northern knowledge and ecoculture, where the arts and crafts are typically in dialogue with traditional materials and techniques, for cultural empowerment and revitalization. (See Jokela et al., 2021).

Digital fabrication could add a new layer to these skills to sustain a self-reliant way of living in the age of globalization and change. While valuing traditions there is also potential in the Arctic for creative, adaptive and entrepreneurial actions to find ways to make a living, blend the old and new, or simply maintain equipment there already by utilizing also the potential of digital fabrication.

Kohtala: Careful integration of fabrication technologies can indeed supplement livelihoods and bring new meaning to traditional crafts and material culture in the Arctic. Across Latin America, for instance, there is a strong network of fablabbers who support local artisans, but also explore Indigenous cosmologies embedded in traditional craft techniques by experimenting with digital fabrication (e.g. Gonzales Arnao, 2019). This praxis is also explored by researchers in parts of Africa in what they term 'ethnocomputing' (Eglash & Foster, 2017).

Conclusions

In this chapter, we have presented insights into current and future practices integrating digital fabrication in art, design and craft. By addressing questions related to technique, material and process, to broader questions of changing educational paradigms, sustainable Arctic livelihoods, natureculture and democracy, we aim to contribute to the ongoing discourse on the opportunities and challenges presented by digital fabrication and digital tools. More than simply a dialogue among academics, expert perspectives deeply embedded in emerging, experimental practices offer a richer understanding of how we can collectively shape how digital fabrication plays out: shaping socio-technical relationships with such technologies and new practices through profound material understanding and ethical discussion that is locally situated.

We have emphasized the experimental nature of such integration, highlighting the iterative process and the shift in craftsmanship. The evolving nature of art and craft in the digital age suggests that mastering both traditional and digital techniques is crucial

for modern practitioners. Traditional art and craft methods and honing craftsmanship are blended with 'computational thinking'. Experimenting with digital-physical making transcends borders, moving in between embodied and tactile experiences with materials to digital bits and back again, implicating new ways we understand creativity, design, materiality, digitalization, and participation. We thus see digital fabrication, not simply as yet another new technique, but rather as central to our building capacities as citizens and creative practitioners in a digitalizing society.

Throughout history, artists have used all possible media and tools to create art and have challenged traditional techniques; postmodernism questioned the idea of the artist as master of certain materials and techniques (Sederholm, 1998; Efland et al., 1996). Posthumanism has expanded the idea of the author even more widely, introducing collaboration with organisms (bio-art) and technology in artmaking (e.g. Rousell & Fell, 2018). In art and craft, there is freedom to explore, misuse, challenge and criticize.

Digital skills cannot replace the skill of the hand and eye in craft, but they rather expand and complement the set of skills required today. This becomes bodily, embodied knowledge, which is inherent for humans in learning (Macrine & Fugate, 2022). We thereby see that integrating digital fabrication into our artistic and craft practices, in art and craft education, helps us raise ethical questions about accessibility, inclusivity, and sustainability in a changing Arctic society and relevant aesthetic questions about authorship, form, materiality and beauty.

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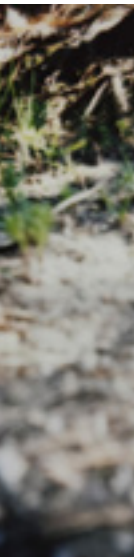

Engaging Northern Children's Perspectives on Sustainability: Collaborative Art-based Methods in Education

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As societies strive for sustainable futures, the need for innovative and inclusive approaches to environmental challenges has never been more critical. These solutions require inclusive conversations that bring together different viewpoints and expertise from various sectors and communities (Stott & Murphy, 2020; Määttä et al., 2013). By fostering inclusive dialogues and innovative approaches, we can better address the complex and interconnected challenges of sustainability, and aim for an environmentally sound and socially equitable future (Fiandrino et al., 2022; Leal Filho et al., 2019). Achieving this vision of a sustainable future requires concerted efforts and a commitment to collective action by learning from the past, embracing diversity, intergenerational collaboration, environmental stewardship, community empowerment, and inclusive decision-making (Vilela, 2010).

This chapter presents two case studies conducted in Northern Finland with an objective of investigating how art-based projects engage children in discussions about sustainability and support intergenerational discussion. The featured case studies relate to two projects: The first one is MY CULTURE, MY ROOTS project (2013–2014), a community art project with children and youth in five Nordic countries at compulsory schools in Finland, Sweden, Norway, Iceland, the Faroe Islands, and Greenland. The second project, Reconceptualizing Boundaries Together Towards Resilient and Just Arctic Future(s) (REBOUND), which includes the sub-projects "Intergenerational Justice, Resilience, and Education in the Green Transition" and "Participatory Design and Art-Based Interventions for Resilience" runs from 2023 to 2029. These ongoing sub-projects are conducted by the Faculty of Education and the Faculty of Art and Design at the University of Lapland. REBOUND is an interdisciplinary project exploring environmental challenges and green transitions through the lenses of justice and resilience. In the project, resilience is understood as the ability to cope with disturbances while maintaining core functions and identity, and it is addressed in the particular context of the Arctic. In these processes, the acquisition of knowledge plays a significant role in enabling a conscious response to changes and disturbances. (Arctic Council, 2016.)

While this study is situated in Northern Finland, it offers geographical relevance, which shapes sustainability based on environmental, social, economic, and cultural factors unique to this area (cf., Saarinen, 2003). Environmental factors in Northern Finland include climate, natural resources and biodiversity, all of which play a crucial role in discussions of sustainability. Social factors refer to the demographics, population distribution, social structures, and community dynamics within Northern Finland, which all influence how sustainability initiatives are perceived and implemented. The subject of sustainability impacts all generations, from children to elderly people, making intergenerational polyphony a significant approach to the discourse on justice. Also, the pivotal role of Indigenous knowledge in offering insights into sustainable living and environmental stewardship and methodologies in this discussion cannot be overstated.

Our chapter explores how collaborative art-based methods, especially participatory photography, can serve as a powerful catalyst for giving voice to children and intergenerational dialogue on sustainability, particularly in the Northern Hemisphere. Our choice of focus on the voices of northern – including Indigenous – children, as well as the voices of elderly people, is based on the fact that these groups often represent marginalised positions within their communities and society at large. These insights contribute to broader conversations and policies affecting their lives, as both children and the elderly have specific needs that may differ significantly from those of the broader population.

Additionally, educating adults and policymakers on how to consider children's perspectives and needs in decision-making is crucial. Promoting education and access to information is crucial in increasing children's participation and influence in advancing sustainable development. In these kinds of work processes, collaboration between families and educators in forums for formal and informal learning is paving the way for a stronger understanding and impact for a green transition. This can include providing children and their families with access to educational materials and tools addressing themes of sustainable development and encouraging participation and action. Amplifying children's voices in building a sustainable future requires diverse and inclusive approaches that encourage creative expression, interactive learning, representation in decision-making, and promoting education and access to information (Gillett-Swan & Burton, 2023). Through these measures, we can ensure that children are actively involved in advancing sustainable development and that their voices are heard in decision-making processes concerning their future and environment.

In this chapter, we highlight the unique perspectives of northern, including Indigenous, children, and examine how creative methods serve as powerful tools for express-

ing and learning about environmental concerns. Our approach differs from traditional educational methods in that it focuses on children amplifying their voices within these projects. Incorporating a decolonial Indigenous perspective diversifies insights and underscores the importance of Indigenous methodologies in educational practices. Our findings highlight that visual and artistic storytelling is not limited to educational purposes but also serves as a powerful advocacy tool, emphasising the central role of children in promoting sustainable futures. Our results also underscore the significance and impact of visual storytelling in addressing themes of environmental responsibility in the interaction between children and elderly people in the Arctic region. Through these projects, we advocate for an environmental policy and education framework where children's agency is strengthened and made visible through participatory methods and experiential approaches. The overarching objective is to amplify voices within the broader context and highlight Northern perspectives on sustainability for the general audience.

Previous Studies

Previous studies have investigated various approaches to fostering intergenerational dialogue on sustainability, highlighting different methodologies and outcomes. For instance, D'Andrea and D'Ulizia (2023) examined the role of digital platforms in enhancing communication between generations and found that these tools significantly improve interaction frequency and ease, which suggests that digital technologies could bridge generational gaps and foster more effective intergenerational communication. Gillett-Swan and Burton (2023) focused on educational frameworks that promote sustainable practices among youth and elders. Henwood et al. (2016) explored community-based initiatives, while Moldavanova (2016) investigated policy-driven dialogues. Spiteri (2020) looked into cultural influences on intergenerational communication, and Wexler (2011) studied the psychological aspects of engaging different age groups in sustainability discussions. These diverse approaches underscore the importance of understanding and improving intergenerational communication to effectively address sustainability issues in decision-making processes.

In the Swedish Sámi area, the perspectives of Sámi children on their own future were explored through the drawings they made and their explanations of those (Jonsson et al., 2012.) According to the study, Sámi children are concerned about climate change and its effects on traditional Sámi livelihoods such as reindeer herding. The research also indicates that the mainstream system does not often hear and recognise Sámi chil-

dren's concerns. Grini (2023) emphasises the need to consider the Sámi perspective and framework when presenting Sámi art and duodji. Sámi art is always an integral part of the Sámi context. We share her view that art should always be examined as part of its context.

Photographs as visual material have been used as participatory tools in storytelling by Ulkuniemi (2010). Art- and place-based research on children's participative practice has been conducted in the context of Finland by Hiltunen (2009) and community art projects and teacher education from a northern perspective (Hiltunen, 2016). In the Nordic context, Porsanger and Guttorm (2011), among others, have written about the complexity of knowledge building between Sámi culture and the surrounding world, and examples of art education and sustainability practices have been presented by Huhmarniemi and Jokela (2020) and Jokela and Coutts (2018). Also, pedagogical approaches in Sámi and the Arctic context have been researched by Laiti and Frangou (2019), who explored the role of cultural context and social learning in learning technologies and new media. They highlight the role of learning together in a social event.

Rusanen et al. (2012, 407) have explored the role of art education in enhancing well-being and overall development of children, particularly by creating opportunities that highlight children's cultural expression. Additionally, they have examined how art education supports identity formation in young people by offering them space for self-oriented artistic activities that reflect their individual interests and preferences. The use of different visual methods, such as writing, drawing, painting, and photography, made it possible for the children to express themselves in multifaceted ways. Similarly, Rusanen et al. (2011) described the power of art-based practice in finding ways for children to express their thoughts and opinions. Earlier findings highlight the connection between children and artefacts in daily life and what impact these objects can have as bearers of identity (Rusanen et al., 2014).

Karlsson Häikiö et al. (2022) highlighted the complexity of the education and upbringing of children in Finnish early education and school and the discrepancies between Sámi education and legislation in the Finnish curriculum. Based on a study with Sámi participants, where the focus was on bringing out their voices, Eldridge (2016) points out the effort art educators can make for Sámi and Indigenous cultures, including supporting decolonisation. Huhmarniemi and Jokela (2020) promote a dialogical approach to overcome opposing positionings of traditional and new practices by proposing the term *northern knowledge* that encompasses an interdisciplinary common practice bordering different knowledge areas but also cultural positionings to create a fertile

and tolerant perspective on differences. They highlight the interconnectivity between the diverse forms of knowledge linked to a specific geographical and cultural context and propose the term *ecoculture* to describe the connection between communities and places (Huhmarniemi & Jokela, 2020). Jokela (2016) presents an art-based project on children's well-being and cultural identity in schools where the children participated in a project where the schoolyard was transformed through sculpting in ice and snow to show how issues of art and inclusion are connected in art education practice. According to Ratinen (2021), the knowledge of climate change among elementary and secondary school students could be enhanced by connecting it with the work and stories of researchers and activists through various community projects and art-based methods.

In light of these studies, participatory and arts-based methods offer opportunities for a community-based approach, fostering inclusivity, community engagement and intergenerational dialogue. Accordingly, a community-based learning perspective has been chosen as the research approach, creating a space for diverse intergenerational dialogue. Such activities may scaffold the process of empowerment and show different perspectives on imagining the future together.

Methodology

The research approach of this article enables an open and iterative research process, facilitating adaptation to changes during the course of action (Hammersley & Atkinson, 2019; Thornberg, 2022). As we explore case studies derived from these workshops and art education, the related work will highlight our methodological approach, emphasising the integration of decolonial and Indigenous frameworks. This perspective enriches the analysis and aligns with our commitment to amplifying voices that bring essential insights into sustainable practices rooted in deep ecological knowledge. By showcasing the effectiveness of visual storytelling through nature photography and art education, we advocate for a broader application of art in environmental education and policymaking. A profound respect for Indigenous perspectives underpins the intersections of art, ecology, and intergenerational dialogue. It promises an insightful exploration of how we can collectively navigate the challenges of the green transition, forging a path toward a sustainable and equitable future (Williams, 2021).

In our case studies, several different methods are used, all of which are based on participatory approaches. According to Pienimäki (2013), the purpose of documentary photography is to present social and societal reality as truthfully as possible, which

is why it suits participatory practices. Knoblauch et al. (2008) highlight the increasing use of visual data in research, both as a key focus of study and as a methodological approach. Visual ethnography expands the scope of visual research, encompassing methods like photo interviews, photo elicitation, and various forms of collaborative research, along with creative applications of diverse research methods (Knoblauch et al., 2008). Photography as a research method has been used in various contexts with Indigenous youth and has the potential to empower the participants (Anderson et al., 2023). Pink (2013) addresses the awareness that the reporting of research results is based on interpretations and perspective-taking, which is also central to the more comprehensive ethnographic field.

In our case studies, children and elders engaged with photography as a means of expressing and sharing their perspectives on diverse themes, such as cultural identity and sustainability. These settings offer a unique vantage point from which to examine how different age groups, united by a shared cultural heritage, perceive environmental challenges and the pathways to sustainability. Our case studies highlight unique data on the diversity of voices among children in the northern region.

Participatory Tools for Local Context

Kolb (2008) sees visual methods and photography as integrative approaches through interactive and participatory practices in different social and cultural contexts, enabling involvement, sharing, and analysis. Through collecting authentic data in the form of photographs and dialogues using, e.g., photo elicitation, valuable insights from social groups can be gathered to understand local structures and processes. The participatory approach can utilise different tangible objects as probes that facilitate research participants' verbalisation of their responses, thus contributing to the data collection beyond the actual photographs themselves. Photographs can function as probes that help participants verbalise their observations and memories (De Leon & Cohen, 2005) and can support the collection of richer data from field studies.

Jokela et al. (2021) have proposed that Arctic Art and Design can support creating a sustainable future for the Arctic and its economies, highlighting the need for local and place-based ways of acting and learning. Jokela et al. (2019) have developed a participatory model on Art-Based Action Research cycles, where several steps and phases are described to stimulate participation and interaction between children, community members, artists, places, materials, and so forth in the Arctic region. Here, observation

is used as well as, for instance, investigation of the socio-cultural and visual context of places as a base for art-based interactions. Previous research has emphasised the importance of embedding design processes with local and cultural contexts. This can be achieved through participatory methods and co-creation strategies (Paananen et al., 2022). Participatory approaches and methods play a central role when community needs are charted, and concepts for solutions are created.

Ethics in the Study

This study adheres to stringent research ethics concerning data gathering, data management, and the overall treatment of the community involved, ensuring that all interactions are conducted with respect, sensitivity, and ethical integrity. The inclusion of Indigenous peoples and minors brings additional dimensions to the research ethics, necessitating culturally appropriate methodologies, extra care in obtaining informed consent, and heightened sensitivity to the vulnerabilities of these groups (Leadbeater et al., 2006). This ensures that participation is voluntary, privacy is protected, and cultural values and norms are respected throughout the research process. An important starting point in research involving the Sámi is the creation and implementation of culturally safe research conditions. The goal is to strengthen ethical dialogue between science and the Sámi community (Heikkilä et al., 2024).

The ethical guidelines for research involving the Sámi people in Finland also point out the researcher situating themselves and considering their role and the impact of their research on the Sámi community (Heikkilä et al., 2024). The authors of our chapter have diverse backgrounds, and the research team constellation is based on earlier cooperation to highlight perspectives on art, education and sustainability and to contribute to knowledge from an inclusive perspective (see also Karlsson Häikiö et al., 2022). The first author and the fourth author of this chapter are themselves Sámi and have worked extensively in the field of Sámi education and educational research. Their positions are particularly related to an internal understanding of and engagement with Sámi culture, as well as a desire to advance research on Sámi education. The other authors have broad experience in art-based education, design, and research within the Nordic countries and Sámi regions. The research team's interest lies in art and design education, northern children's and Indigenous peoples' rights, and sustainability issues and researchers have actively participated in the projects presented in this chapter. Although there is a time gap between the projects, they both represent a continuity of community art projects in

the Arctic sphere and exemplify art-based methods and photography as vital practices in fostering participation for northern children and elderly people.

In the reporting of the research process, ethical considerations regarding empirical data collection, transcription, and analysis, as well as the presentation of the material are taken into account (Tracy, 2010). The research conducted follows ethical rules for reliability in research (Bryman, 2018), and the image and text material collected is subject to the regulations that apply to research following good research practice regarding information, consent, confidentiality, use, and regulations for quality assurance. No sensitive personal data is collected in accordance with the rules that apply to the GDPR (Regulation 2016/679). The participants' integrity is protected through pseudonymisation, and no participants are exposed to physical, psychological, or integrity risks and can cancel their participation at any time. In the transcription phase, raw data and coding are kept separate, and all research material is stored and archived in accordance with the universities data management regulations. Research involving children is guided by strong ethical principles centred on ensuring children's safety, dignity, and ability to express their own voices. Additionally, obtaining children's own consent to participate in the research, as well as ensuring their understanding of the research topic and its implementation, are significant ethical foundations. (Phelan et al., 2013.)

The MY CULTURE, MY ROOTS community art project was conducted within municipal comprehensive schools and was integrated into the educational activities at the schools in collaboration with the teachers. The parents were informed about the art project and the documentation of the art workshops. In reporting the research, photographs of the artwork created, and workshop process are used, in which the children remain unidentifiable to ensure protection of their identity. Since contexts in comprehensive schools in northern Finland are quite small, the de-identification of the children is crucial. The authors have adopted an inclusive perspective to make sure that all children were part of the project, including those who participated in Sámi education.

In the REBOUND sub-project, the ethical issues were considered in detail due to the involvement of vulnerable groups, which required extra care in data collection and management because of the involvement of Indigenous persons, minors and children. This included ensuring informed consent from all participants: from the children and their parents or guardians; as well as from the elders and the Indigenous participants. Detailed information about the study, its purpose, procedures, potential risks, and benefits was provided to participants in clear, understandable language. As for the children who participated, this information was also provided to their parents or guardians beforehand to

ensure that they fully understood the implications of participation. Strict protocols were followed to maintain the confidentiality and anonymity of all participants. Personal data were pseudonymised and securely stored, with access restricted to authorised personnel only. Culturally appropriate methods and materials were used for the study context. This involved consulting with representatives and integrating their feedback into the research design and consent process. Consent was treated as an ongoing process rather than a one-time event, ensuring shared understanding and acceptance throughout the entire process. Participants were reminded of their rights to withdraw from the study at any time without any consequences. The researchers and staff involved in the project received ongoing updates on ethical research practices, especially focusing on working with children and Indigenous groups.

Case 1. Art Workshops with Drawing, Painting, and Photography

In 2013-2014, an art education project was conducted as part of a larger art community project with children and young people in comprehensive schools in five Nordic countries (Karlsson Häikiö, 2016, 2018). In the project, children in Northern Finland participated in art workshops in two comprehensive schools as part of the visual arts teaching. A central idea of the project was to give children from different minority cultures the opportunity to come into contact with and see other children's texts and images, but also to give the children the opportunity to express themselves and create texts and images of their own, based on children's right to participation in their own culture and on the right to give voice and express themselves (based on Article 13 and Article 30 of the Convention on the Rights of the Child United Nations, 1989). The purpose of the project was to, through writing texts and making visual artefacts, reflect on one's cultural identity and one's unique cultural affiliation and to begin to develop a deeper understanding of one's roots. The roots of a child's dignity can be created and stimulated in institutional practices, and through respect for their capacity, the children can learn to understand and value people and cultures.

In the art-based school project involving art workshops, the children had the opportunity to visually and textually narrate their experiences in a comprehensive school context. In the art education project presented in this chapter, the art workshops allowed children to engage in textual and visual storytelling at two comprehensive schools in the northern part of Finland. The children described everyday objects and surroundings as important in their lives.

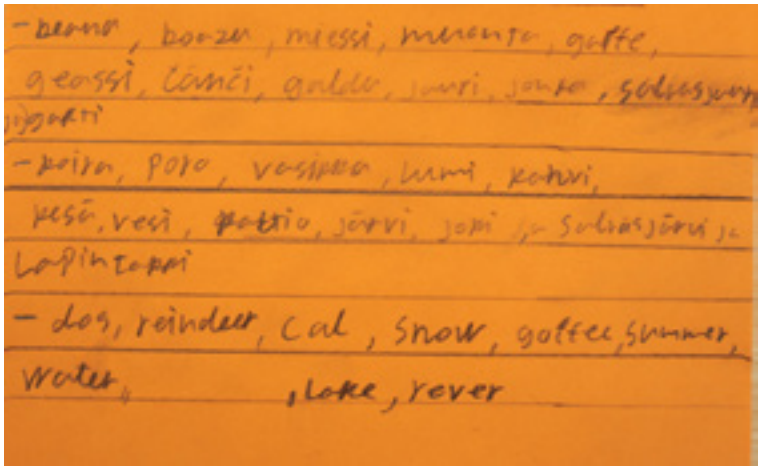

Figure 1 & 2. (Above) Sketching, colouring the reindeer. Photographs: Tarja Karlsson Häikiö, 2013.

Figure 3 & 4. (Below) Writing in three languages and discussion of the photo-documentation of the painting. Photographs: Tarja Karlsson Häikiö, 2013.

The task in the workshop was to write about one's daily life experiences and then to visualise them using freely chosen materials. One of the older children in the class (years 4-6) wrote words in three languages: Sámi, Finnish, and English. He wrote, for example, the following words: *beana*, *boazu*, *miessi*, *muohta*, *káffe*, *geassi*, *gáldu*, *jávri*, *johka* in Sámi; *koira*, *poro*, *vasikka*, *lumi*, *kahvi*, *kesä, kaltiovesi*, *järvi*, *joki* in Finnish; and *dog*, *reindeer*, *calf*, *snow*, *summer*, *water*, *lake*, *river* in English (Figure 3). He did the writing on his own initiative, even though he could ask the teacher about the spelling on occasion. After this, he drew his own reindeer, first with a crayon on a cardboard, and then he painted it with acrylic paint (Figures 1–2). The boy told [to the researcher, who is one of the authors, notification] that the reindeer had a star on the forehead and that he named it Star because of this. Star was his pet reindeer until it grew up, and he took care of it by giving it food and water.

When he was ready with the painting, he photographed and documented it, then showed it to the artist who held the workshop and to his teacher in class. He discussed the choice of colours with the artist and consulted with her in the different phases of the creation process, for instance, about the choice of materials. In the final phase of the creation process, the boy, standing on a chair, presented a photograph of his artwork on a mobile phone. He was really proud of his painting, but also wanted to tell about his artistic choices to the artist (Figure 4).

The paintings were presented at the local nature centre where they were displayed in an exhibition. This provided the children's parents and other members of the surrounding society with the opportunity to get to know the work. The paintings in question later travelled between the Nordic countries in different exhibition spaces, displayed to the children participating in the project, their families and the community. The recently published ethical guidelines for Sámi research (Heikkilä et al., 2024) also emphasise the importance of returning research results to the community. This was a crucial principle in this project, where the aim was to present the children's artworks within their own community and to their own people.

Like in the picture collage in the art-based project, the task given to the child was to draw and write for themselves, a process to learn to know themselves and their interconnectedness to their roots, environment and culture. For example, when depicting reindeer or other phenomena, such as water, usually things related to nature become important. The example from comprehensive school exemplifies that awareness of nature and culture is vital for children in the Arctic region. Through art education, questions of environmental awareness can lead to environmental re-

sponsibility. It is implemented both in the family and at school in everyday life. The personal values and interests came forth in the children's art making in the assigned art project, where depicting and writing about nature and natural phenomena had a prominent role in the children's artworks, reflecting the children's attachment to nature in the Arctic region.

Case 2. Intergenerational Workshops and Photography

Research in the ongoing REBOUND sub-projects is conducted through workshops involving comprehensive school children and elders in Northern Finland. In these workshops, the children and elders discuss sustainable development and the green transi-

Figure 5. Some workshop materials include a Polaroid camera and a 3D-printed prop. Photograph: Siiri Paananen, 2024.

Figure 6. Group discussions about SDGs were held in the workshop with children and elders. Photograph: Henri Mella, 2024.

tion through participatory and art-based research methods. Locally relevant issues have been considered when choosing the workshop materials, as climate change has regional impacts, and green transition measures are particularly visible at the local level.

The workshop materials (Figure 5) were chosen and prepared by the researchers, including 3D and 2D printing and selecting visuals related to the area. Polaroid cameras for photography were chosen for ease of use, and for having physical photographs for the participants to see and explore. They were also deemed appropriate from the perspective of digital safety, as no data are transferred digitally, and no metadata are saved. The cameras will be reused in future workshops to avoid any single-use materials.

The research data described in this chapter was collected from a workshop held in May 2024 in one comprehensive school in Northern Finland. Nine children in grades 5 to 8 and four elderly individuals attended the workshop. The children were recruited through the school, and the workshop functioned as a kick-off to their school's sustainability action group. The elderly participants were invited through a local elderly organisation. All work-

Figure 7. A participant set up a shot of an example of a workshop creation, changing perspectives. Photograph: Henri Mella, 2024.

shop sections were conducted in small groups consisting of both children and elders, with a researcher acting as a facilitator. The data consist of group discussion about Sustainable Development Goals (SDGs) and photographs taken by the participants during the performance of three different tasks (SDGs, recycling and green energy).

First, the children and elders discussed the SDGs together (Figure 6), and each group selected goals they considered the most important. They were also given time to explore the SDG cards in more detail during the group discussion. In discussions about SDGs, the most important values that emerged were 'Good Health and Well-being', 'Quality Education', 'Climate Action', and 'Reduced Inequalities'. The groups justified their choices based on their own experiences and perspectives. The children and elders took turns sharing their experiences, which created a context of dialogue for the activity. In the discussions, emphasis was placed on equal participation and sharing of experiences.

After the discussion, the groups moved outside to participate in the polaroid photography tasks. After taking each photo, the participants wrote down their thoughts

about what they had captured on a Post-it note. For the SDG task, they chose one of the printed SDGs, which they placed in the outdoor environments of their choice, representing their chosen goal. They then took pictures of the compositions using Polaroid cameras. The second task subject, recycling, was chosen as a locally relevant topic for this workshop, which is in line with the principles of sustainable development. The task was to take a photo of a recycling-related issue in the nearby environment.

The third photography task, one related to green energy, involved the participants placing a 3D-printed wind turbine somewhere outdoors and taking a photo of it in their preferred location (Figure 7). In the next phase, all Polaroid photos were displayed inside the classroom on a big wall for the groups. The participants discussed the photos in small groups, each facilitated by a researcher. The discussions focused on what thoughts the images evoked and what the images conveyed about the SDGs. This also included a discussion of the kind of thoughts the action of photographing and seeing others' photographs evokes.

In the SDG photography task, five different goals were selected by the children and elders. 'Quality Education' was the most photographed goal by the participants, who explained that the school next to them was linked to it and that it was the basis of sustainable development. One participant wrote: "I took a photo of my school because we have good teachers and we get quality education free of charge to go forward in our studies. We also receive free school lunches so we can study." The goal 'Climate Action' was photographed the second most often, and it was related to practical things such as biking, nature, and cleanliness. Related to this, a participant wrote: "Let's keep our environment clean". The goal of 'Sustainable Cities and Communities' was mentioned the third most frequently.

In the recycling task, the participants were tasked with finding some recycling-related issue and thinking about a solution. The work of some participants, who needed more time to find an issue to photograph, was facilitated by the researcher with further encouraging questions. The most photographed thing was an interactive outdoor game kiosk in the schoolyard, a technological device that the children found useless, as it had been broken for a long time. The most common topic was the need for more trees and greenery in the yard, as well as waste and sorting it. One child wrote: "If you can put anything in a garbage can, that is not recycling". In the third task, the participants were instructed to think about the meaning of wind energy as part of the green transition and how the 3D-printed wind turbine props could be situated. Many photographs featured an open space for the wind turbine, "I chose that location because there is much wind."

Figure 8. Two participants' polaroids from the workshop were related to the tasks with wind turbines and with SDG 'Climate Action'—collage photograph of participants' work: Siiri Paananen, 2024.

The location of the wind turbine was also connected to energy sources by the participants, such as producing energy for infrastructure.

Based on our observations during the photography workshop, we noticed that the children were eager to try it out, and often quite quickly had a vision for what they wanted to capture, even after a short introduction to the task. According to our observations, the children used photographs to promote their thoughts (Figure 8). On the other hand, while the elderly also seemed to be familiar with taking photos, before taking action they first wanted to put their thoughts into words and tell stories about what they wanted to show in the photo. During the photography process, the participants composed their

images and planned how different elements can be arranged in relation to each other and the camera. The photography tasks encouraged discussions between participants, and they explored their views together through a shared activity. In the feedback survey, one of the elders wrote: "It was nice to see the children's motivation and to share my own experiences with them." We could see that the participants themselves also appreciated the interaction between young people and the elderly. Additionally, they found the activities – the diverse tasks and photography – enjoyable; one child wrote in the feedback that "taking photos with cameras was the best part".

In our view, working with this kind of low-threshold activity of photography can enable the voices of people of different ages and backgrounds to be heard. The reflexive session presented above allowed the participants to see each other's work and explain their polaroid if they felt like it. Overall, the act of photographing and discussing the SDGs and the polaroids supported each other and gave the participants concrete ways to participate and share their perspectives. The style of miniature photography encourages the photographer to get down low and see nature from a new perspective through the camera. This can enable a change in perspective and develop the ability to see nature and the world from different angles. Polaroid cameras and physical props made topics more visible and engaging, encouraging discussions about sustainability and the green transition and linking them to the participants' everyday life. The children and elders made observations in a shared space through photography and discussed them together.

Discussion – Comparative Perspectives

This chapter has explored how art-based collaborative methods, particularly participatory photography, can act as powerful catalysts for amplifying children's voices and fostering intergenerational dialogue on sustainability, especially in the context of the Northern Hemisphere. The two distinct art-based case studies presented here demonstrate that children draw upon their own experiences to grasp concepts of sustainable development. Incorporating artistic practices into educational frameworks enriches the learning experience and ensures that diverse voices are heard and valued. This holistic approach can contribute significantly to the ongoing discourse on sustainability and justice, emphasising the importance of inclusive and participatory methods. Consistent with previous research (De Leon & Cohen, 2005; Rusanen et al., 2011), we utilised art-based methods and photography to stimulate discussion. This method sought to empower participants by providing them with a medium to articulate their perspectives

and experiences. Through engaging with their personal experiences, sustainable development goals became integrated into the children's lived experiences.

In comprehensive education, the focus should be on acting in accordance with sustainable development and eco-social education and guiding children towards living a sustainable lifestyle. Ecological and social education emphasises understanding the seriousness of climate change and striving to act sustainably. In comprehensive education, basic knowledge about climate change is primarily taught in the subject of geography, so there is a need for more hands-on approaches that resonate with children and young people, focusing on how they personally experience and deeply understand climate change (Ratinen, 2021). Children should be provided with comprehensive and diverse opportunities to expand their understanding of climate change and to participate in sustainable development. We see that active learning methods and artistic approaches can provide versatile opportunities for addressing children's thoughts on these themes and reflecting on them through action. Notably, both the children and the elderly participants in Case 2 emphasised the importance of quality education as a key value of sustainable development. Also, during the photography sessions, they captured images that underscored the significance of quality education.

As we continue to encourage children's voices to be heard and integrate them into these dialogues, we must remember that children are not just the beneficiaries of our actions but also essential partners in shaping the world they will inherit. By empowering children to express their views creatively, by ensuring their representation in decision-making processes, and by promoting education and access to information, we can lay the foundation for a future where sustainability is not just a goal but a way of life. In this journey towards sustainability, let us reflect on the lessons of the past, embrace the diversity of perspectives, and work together across generations to build a world where nature thrives, communities prosper, and all voices are heard. Achieving this vision of a sustainable future requires concerted efforts and a commitment to collective action by learning from the past, embracing diversity, intergenerational collaboration, environmental stewardship, community empowerment, and inclusive decision-making (Vilela, 2010).

The REBOUND research project is still ongoing, and efforts are continually made to maintain strong connections with local communities. In particular, there is a focus on sustaining intergenerational dialogue. The participatory workshop demonstrated that there is a need for dialogue in changing environments that affect everyone collectively, and that each person has a perspective based on their own experiences of these changing environments. According to our research, both the children and the elderly participants value par-

ticipatory art-based methods and dialogue with one another. There are plans to create an exhibition together with the children and the elderly participants at the end of the research project, similar to what was done in the MY CULTURE, MY ROOTS project.

However, from a critical perspective, the use of documentation practices, such as those in everyday educational institutions like schools, can also be seen as an uncritical acceptance of surveillance techniques (Sparrman & Lindgren, 2010). These techniques are reminiscent of those imposed upon Indigenous people during the historical colonisation of Sámi communities, which led to maltreatment and misinterpretation (Lindblom, 2019). In recent decades, participatory photography as a research methodology has also been empowering Indigenous youth, but it is not entirely without ethical issues and risks (Anderson et al., 2023). For these reasons, various ethical considerations play a major role in projects such as ours, which we have reflected on here.

Through photography, awareness can also be raised to enable a more conscious response to future changes. Education and methods for teaching in-depth knowledge play a significant role in this. A conscious approach strengthens the resilience of both individuals and communities. In the stories of the participants in the photography workshops, awareness of the changing environment emerged strongly. These connections are being further explored in the ongoing REBOUND project.

Conclusion: Empowering Intergenerational Dialogue for Sustainable Futures

The exploration into the role of nature photography series as a catalyst for intergenerational dialogue on sustainability, particularly through decolonial and Indigenous perspectives, underscores the importance of inclusive and diverse approaches to addressing the urgent challenges facing our planet. By highlighting the critical need for an effective and equitable green transition, we have showcased how the expressive power of visual storytelling can provide a platform for marginalised voices, particularly children of Indigenous communities and suburban areas. We argue that art-based methodologies can play a significant role in this discussion and ensure that no one is left behind.

Through the lens of the REBOUND art education for sustainability in Northern Finland, we have witnessed the transformative potential of intergenerational participatory workshops in fostering understanding and action across different age groups, all united by a shared cultural heritage. By integrating decolonial and Indigenous frameworks into our methodological approach, we have enriched our analysis and stayed committed to

amplifying voices that offer essential insights into sustainable practices rooted in deep ecological knowledge. Looking ahead, the intersections of art, ecology, and intergenerational dialogue hold promise for navigating the complexities of the green transition.

Amplifying children's voices engages them in building a sustainable future through allowing them to use their unique ability to perceive the world from fresh perspectives and express their thoughts freely. This proposal aims to create space for children's participation and influence in advancing sustainable development. By harnessing visual and creative expression, such as photography and art, children can share stories about their experiences of their relationship with the environment and sustainable living from their perspectives. Organising photography and art workshops for children, akin to those conducted in the MY CULTURE, MY ROOTS community art project and the REBOUND sub-project and art education for sustainability, allows them to express their views on and experiences of sustainability uniquely. Ensuring that children are represented in decision-making processes concerning their future and environment is essential. This can be achieved by creating forums where children can express their views and participate in decision-making on matters related to sustainable development.

We believe that the interdisciplinary nature of this work can provide fruitful insights into the theme of sustainable futures. The intersection of art, design and education opens up new possibilities and allows for the exploration of novel approaches. Encouraging multigenerational expressions can raise awareness and enhance understanding of new issues, such as the green transition and sustainability. Through art, the voices and thoughts of Northern people can be made visible and brought to the attention of broader audiences, including decision-makers. We look forward to expanding the activities and discussions of the green transition in the Arctic through artistic methodologies.

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Shaping a Teaching Identity Through the Arts: A High Arctic Narrative

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In this chapter, I explore shaping my teaching identity through the arts. I am a settler in Canada of Scottish and English heritage. I am also a full professor at Memorial University in St. John's, Newfoundland, Canada, specialising in arts education. Here, I scrutinise my twenty-year-old experiences as a Kindergarten to grade 12 educator in Aujuittiq (Grise Fiord), Nunavut (pop. 150), Canada's most northern civilian community in the High Arctic. Using a narrative approach (Freeman, 2017) including painting artefacts, I examine the construction of my teaching identity in a new landscape (McLeod & Vanelli, 2020) and how I was shaped by teaching in the High Arctic landscape. Alternatively, how did I shape my experiences? And what did these negotiations of identity mean when I returned South to my familiar landscape in Victoria, Canada?

Some might argue that 20 years ago is a very long time, and that both the High Arctic and I have changed, so my teaching experiences and learnings may hold little relevance now. Nevertheless, the following year I engaged in doctoral studies, which led to me eventually becoming a professor. My formal educational background involved studies in history, art, and education, yet these all were taught to me as separate specialist areas. After returning from the Arctic, I viewed the world somewhat differently in my teaching and learning. I sought increased subject integration, an emphasis on bodily experiences, and the promotion of personal expression.

As an educational philosopher and advocate for teaching through the arts, Greene (2013), compares expanding our vision for the arts in education to the turning colours of leaves in autumn. There are two parts to the turning – people connect with the world, but they also make sense of their experiences in the world and make them their own. One way to engage with the world is to find one's own means of expression. Therefore, given that most of my current post-secondary education students are non-arts specialists, my research question in this chapter is about how my High Arctic experiences sculpted my emerging post-secondary teaching towards teaching through the arts to assist non-arts specialists find their individual means of expression.

At the end of the chapter, I connect my post-secondary teaching through the arts to the approach used by Jokela and Huhmarniemi (2022), who show how art in the North and the Arctic can respond to the needs of contemporary society and decolonisation while fostering education for sustainability.

Canadian High Arctic Colonialism

Canada's High Arctic is sparsely populated, and the climate is very severe. As a result, Ellesmere Island had not been permanently inhabited for centuries. Nevertheless, in response to international political tensions, the Canadian government created Grise Fiord, now known as Aujuittiq, which means the place that never thaws, in 1953 at 76 degrees latitude to assert sovereignty in the High Arctic during the Cold War (Dick, 2001; Tester & Kulchyski, 1994). As well, the government sought to discourage dependency by Inuit on government programs (Dick, 2001; Tester & Kulchyski, 1994). A few families from the communities of Inukjuak (formerly Port Harrison), Quebec, and Pond Inlet, both considerably farther south, were relocated. They were assured there would be homes and game to hunt. However, upon arrival, they found buildings had been erected only for the Royal Canadian Mounted Police (RCMP) who would maintain a small presence nearby. In contrast, Inuit families spent the first few years in tents. Additionally, there was little in the way of familiar wildlife or sea mammals. Although they had been told they could leave after a year, the offer was retracted. Thus, forced to stay, the families faced years of intense hardship which resulted in some deaths.

In 2003-04 Umimmak (Muskox) School enrolled about 50 students in Grades K-11 with five full-time teachers aided by two part-time educational assistants. Teachers used a combination of the still-developing Nunavut curricula (the territory of Nunavut came into being in 1999), and curricula from the Northwest Territories and Alberta. While the majority of the inhabitants of Aujuittuq are Inuit and their first language is Inuktitut, the teaching staff were mostly Qallunaat (southerners or White people) who did not speak Inuktitut.

Integrating Inuit content throughout educational practice is important because teacher education and schooling have served as the tools of colonisation and suppression to objectify and oppress all learners and Aboriginal peoples in particular (Neegan, 2005; Sanford et al., 2012). Also, integrating Aboriginal content is relevant for all learners because it challenges negative stereotypes within mainstream racist culture (Davidson, 2015). Ethical forms of relationality and their enactment in curriculum and pedagogy

have become matters of survival. Indeed, as Donald (2009) writes, "Aboriginal peoples will soon have a responsibility to teach others what it means to be a citizen living on this land" (p. 19).

Arts-based Research and Pedagogy in Higher Education

Arts-based research involves the systematic use of the artistic process, the creation of artistic expressions in any of the different forms of the arts, as a primary way of understanding and examining experience by both researchers and research participants (Barone, 2012; McNiff, 2018). Barone (2012) argues that arts-based research is defined by the presence of aesthetic qualities (or design elements) within both the inquiry process and the research text. Using artistic expressions by researchers as ways of knowing and methods of inquiry encourages a revisiting of social science research typologies and the training of researchers (McNiff, 2018). It draws attention to the constraints of paradigms, fixed methods, and disciplinary language that restrict researchers from exploring issues and asking questions that extend beyond traditional academic conventions. Art goes against the grain, pushing the boundaries of institutional mindsets and values. Engaging in arts-based research begins wherever the researcher finds themselves to be, alone or with others and does not limit access based on artistic talent or training. Art is approached as a transdisciplinary way of knowing, a universally accessible process.

Arts-based research differs from scientific research both in the process in which the research is conducted, and in the modalities used for representing research data. While social researchers who have been professionally socialised to regard research in the various fields of human studies as exclusively scientific may dismiss arts-based research as not useful (Barone, 2012; Ewing & Hughes, 2008), nevertheless, arts-based research advocates and practitioners have now made headway in dispelling such misunderstandings.

Chilton et al. (2015) argue that arts-based research is both a method and a worldview with its own philosophical assumptions. The aesthetic intersubjective paradigm, from their perspective as art therapy professionals (including ontological, epistemological, axiological, and methodological assumptions) allows for access to multiple dimensions of human experience and understandings typically unavailable by usual research approaches (Chilton et al., 2015). Conrad, and Beck (2015) find that an arts-based paradigm is grounded ontologically in a belief that we are all, at a fundamental level, creative and aesthetic beings in intersubjective relation with each other and our environment.

Arts-based research encourages contributions towards honouring relations, human and non-human flourishing, and celebrates art's potential to transform the world.

Findley (2008) uses the term art-based inquiry and argues that it addresses social inequities and is uniquely positioned as a methodology for radical, ethical, and revolutionary research that is futuristic, useful, and socially responsible. Integrating multiple methodologies used in the arts with the post-modern ethics of participative, action-oriented, and politically situated perspectives for human social inquiry, arts-based inquiry has the potential to facilitate critical race, Indigenous, queer, feminist, and border theories and research methodologies. As a form of performance pedagogy, arts-based inquiry can be used to advance a political agenda that addresses issues of social equity.

Investigating culture and identity, Greenwood (2012) examines the relationship between arts-based research and learning asking what questions arts-based research might seek to answer? When we apply arts-based research to educational contexts, what kinds of contributions to the scholarship of teaching and learning can we make? Greenwood acknowledges the value of the less definable and often holistic kinds of knowing that may result through art and aesthetic analysis, and argues for the usefulness of a strategic focus on specific frames of investigation and specific outcomes.

Integrating the arts into higher education pedagogy provides an opportunity for cultivating rich ideas and high-level thinking, capitalising on the creativity that every person already possesses and uses (Simmons & Daley, 2013). Further, Newton and Plummer (2009) note that using creative arts as a pedagogical strategy enables individuals to better understand themselves, [and] stimulates thinking.

Arts-based activities support meaning-making and conceptualising research questions (Simmons & Daley, 2013). For example, the process of creating collages supported post-secondary participants in making their tacit knowledge explicit, in reflecting at meta-cognitive levels, and in transforming their thinking, often in ways they anticipated would affect their future practice.

It is critical for preservice teachers to experience innovative and imaginative learning and teaching in their higher education studies if they are to feel empowered to initiate creative teaching and learning activities in their own classrooms (Ewing, 2007; Lewis et al., 2016), and such opportunities can encourage them to reflect on their beliefs about teaching and how they see themselves as they begin their professional journeys. One example is the a/r/tographic model where shared inquiry can lead to deeper insights into learner-centred pedagogy (Ingalls Vanada, 2017). Such constructivist teaching is active, non-lecture, and may involve art-as-experience, while learner-centred practices

enhance students' balanced thinking and perceptions about their abilities as creative learners.

Feminist pedagogies can provide the theoretical lens through which experiences are analysed (Lewis et al., 2016). For example, an arts-informed approach modeled to pre-service teachers how they could use this approach in their future classrooms to think about inequality while meeting different learning styles.

My Approach

As Said (1993) has argued, "The power to narrate, or to block other narratives from forming and emerging, is very important to culture and imperialism, and constitutes one of the main connections between them" (pp. xii-xiii). Since I am committed to social justice, my research involved critical self-analysis of my internalisation of colonialism, domination, and unjust discourses. Sawyer and Norris (2013) argue that educators should gain awareness of how oppression can be internalised. Otherwise, I might be engaged in action to the disservice of personal reflection and analysis, and lacking such awareness, I as an educator may re-enact oppressive narratives. Consequently, for me, using a narrative approach to research (Freeman, 2017), I engaged in personal reflection and analysis, which involved reappraising my actions, rethinking my language, and repositioning my discourse.

I wrote an individual narrative using pseudonyms and made decisions about what was important for me to convey. I reconciled my perspective with the requirements of the academy. Rereading my narrative and keywords, I looked for common themes. I reflected on my perceptions of cultural artefacts from my life including memories, photos, artworks, and stories. I clarified my assumptions and perspectives through critique and examination of my artefacts. To avoid the abstract authoritative voice, I write in the first person, inviting readers into a discussion.

Narrative – 13 Months in the High Arctic

When I stumbled out of the 12-seat twin-propelled plane at 76 degrees North latitude, 3,460 km north of Ottawa in Canada's High Arctic, I had a pocketful of degrees and certificates as well as professional experience and I thought I was ready to teach. It was light season and I'd come from Victoria, British Columbia to the country's most northern civilian community, Aujuittuq. It is one of the coldest inhabited places in the world

and at that time could only be reached by small and medium-sized planes, and by the annual supply ship in the late summer season. I knew that most of the inhabitants of Aujuittuq are Inuit and their first language is Inuktitut, that community members hunt over a vast territory for seals, polar bears, narwhal, musk ox and beluga whales, and that people are employed in government jobs (hamlet, territorial, and federal), eco-tourism, and forms of art and craft production. I'd read historian Lyle Dick's *Muskox Land: Ellesmere Island in The Age of Conflict* (2001), which focuses on the natural environment and the interplay of European/Inuit cultures. As well, I'd read Frank James Tester and Peter Kulchyski's *Tammarniit (Mistakes): Inuit Relocation in the Eastern Arctic, 1939-63* (1994), about the history of government-enforced assimilation and the reorganisation of Inuit lives based on Western ideas about family, work and community, which resulted in social disruption and cultural disintegration. Finally, I'd viewed Zacharias Kunak's, *Atanarjuat: The Fast Runner* (2001), the first epic feature film written, directed and acted in Inuktitut. Nevertheless, despite my careful preparations I still had much to learn.

I was hired as a high school teacher in early April and immediately found the 24-hour brightness of the light season filled me with energy. Calm days of extreme cold and dazzling sun were visually stunning. They were perfect for long snow machine explorations over the sea ice, and I was fascinated by the physical and cultural environment. Professional development opportunities included instruction in traditional hand-sewing techniques offered by an Inuit educator. Friday afternoon culture expeditions led by men from the community involved qamutiks (long slatted wooden sleds), pulled by snowmobiles or dog teams out on the sea ice. One afternoon, a skilled carver, known in the South for his professional artistry, demonstrated his approach. Using his great snow knife, he expertly sliced blocks of hard snow. Fantastic abstract forms emerged as the other adults and children looked on with appreciation and awe. Riding off I thought about the ephemeral nature of these sculptures. By mid-summer, they would drift away and finally melt into the Atlantic Ocean (McLeod &Vanelli, 2015).

I also relished the chance to practice oil painting on small blocks of wood left from a previous school carpentry program that would otherwise have been thrown away (Figure 1). Our instructor through Arctic College, the artist, Danny Osborne, organised a painting trip far out on the sea ice where I temporarily injured my eyes as a result of squinting for long hours in the glaring light. Nevertheless, this range of exquisite and intense aesthetic and social experiences helped me make an important decision - I would return for the next school year. Then I would serve as both the high school teacher and the principal.

Figure 1. Heather McLeod, *Iceberg in Sea Ice – Light Season* (2003). Photograph: Heather McLeod, 2024.

I also took a once-in-a-lifetime chance of venturing inside an iceberg (McLeod & Vanelli, 2020). Despite the extreme cold, a companion who was skilled at snow machine travel offered me a day trip far out on the sea ice where we pulled up at an iceberg frozen in place. In the brilliant light a cavern beckoned us to explore and the sublime blues seduced me. Climbing inside we found a chamber complete with an internal shelf to perch on. Losing no time, we each snapped a photograph of the other (my face was so cold that

Figure 2. Heather McLeod, *Polar Bear Final Moment* (2003). Photograph: Heather McLeod 2024.

the smile is stiff) and scurried out, well aware of the real and well-documented danger of an iceberg capsizing.

Logically light season was the time for visitors to arrive in Aujuittuq. Most who made their way that far north were invited into the school. With Canadian scientists, students and teachers took an afternoon to measure the thickness of nearby ice; I listened to American scientists talk about climate and space-related research on Devon Island, the next island to the south; an English writer helped us work on writing skills; a performance by a group of travelling musicians moved a child to momentarily become a conductor; and Parks Canada historian, Lyle Dick, shared his research on Ellesmere Island (Dick, 2001). Throughout these rich contributions to our learning, I couldn't help but wonder if, like me, these southern travellers, were learning more than they taught in such a unique place.

The students' energy varied in relation to the light and dark seasons. Light season was a time of high energy and decreased sleep. While school attendance was poor because many students left with their families to go camping on the land (McLeod & Vanelli, 2020), those children who remained in the community often roamed independently in the bright light of the late-night hours.

Throughout the dark season, (the winter months of 24-hours of darkness), I navigated the extremely low temperatures and an icy trek from home to school and back a couple of times a day. Going home for lunch the white moon tended to overwhelm our tiny hamlet, its glow making the route easy enough to navigate. When clouds hid the moon the road lighting was my saving grace, although in a gale the lights swung madly as I trudged my way through the snow (McLeod & Vanelli, 2020).

As I walked, I wondered about the landscape including the weather and the occasional polar bear that might be sited around the community - those who came too close were shot by hunters for safety reasons. While such events provided rich learning opportunities—one even leading to an impromptu field trip for the whole school—in my painting class, I imagined a polar bear in its final moment of life, inspired by the affordances of a wood scrap (Figure 2).

Discussion

20 years is a long time, and since both the High Arctic and I have changed, one might wonder why such teaching and learning is worth revisiting. Nevertheless, I argue that my intense response to experiential learning involving my body in and with the social and physical landscape of the High Arctic influences my research and teaching today.

Before travelling to the High Arctic at university I had studied history, art, and education, but all in separate programs. After my return, I undertook doctoral studies in art education, where I was introduced to the thinking of the educational philosopher Maxine Greene. Greene (2013) argues that the arts in education assist people to connect with the world and to make sense of their experiences in it. One of the crucial ways in which people connect with the world is to find their own means of expression. Now, as a full professor, I seek increased subject integration in my teaching and research and I emphasise bodily experience to assist students in finding such means of expression. This is the basis of my arts-based pedagogy for both undergraduate and graduate students.

Arts-based pedagogy is crucial for my pre-service undergraduate students, who as "generalist" teachers, will be responsible for teaching all curriculum areas, including visual art to primary and elementary school children, despite often having had little or no art education in their schooling. Such pedagogy is also important for my graduate students most of whom are already practicing teachers within K-12 schools. Many educators accept Gardner's theory (2000) that there are multiple intelligences i.e. bodily-kinesthetic, interpersonal, intrapersonal, linguistic, logical-mathematical, musical, naturalistic, spatial, and technological. However most schools only attend to logical-mathematical and linguistic intelligences. Parents and teachers generally agree that students should be able to represent knowledge in multiple ways. However the majority of teachers, who are without a background in the arts, do not learn how to nurture and support diverse forms of intelligence. Therefore, they are not aware of how to teach the creative use of art forms and media to represent knowledge.

Like Ingalls Vanada's (2017) use of the a/r/tographic model, which encourages shared inquiry as a lead to deeper insights about learner-centred pedagogy, my constructivist teaching for pre-service teachers is active, and I avoid lectures. I use art-as-experience, and these learner-centred practices enhance my students' balanced thinking and perceptions about their abilities as creative learners. In my experience integrating the arts into higher education pedagogy capitalises on the creativity that everyone possesses and fertilises the growth of rich ideas and high-level thinking (Simmons & Daley, 2013). Further, arts-based activities support students' meaning-making and their conceptualisation of research questions (Simmons & Daley, 2013).

I also use the creative arts as a pedagogical strategy, encouraging my students to understand themselves better (Newton & Plummer, 2009). I believe preservice teachers need to experience innovative and imaginative learning and teaching in their studies so that they feel empowered to initiate similar activities in their own classrooms. These

opportunities encourage them to reflect on how they view themselves and their beliefs as they start their professional teaching journeys (Ewing, 2007; Lewis et al., 2016).

For graduate students, the majority of whom are non-arts specialists, I teach two courses that aim to allow educators to work creatively through the arts, using technologies and intelligences they do not customarily use but wish to explore (McLeod, 2022). Through practice and experience, as well as through theory, critique, and refection, they gain confidence and courage to engage with their young pupils through the arts.

Final Thoughts

In this chapter, I have used narrative and painting artefacts to help me better understand the impact of my past teaching experience on my current university pedagogy, particularly for non-arts specialist students. I have linked my experience in a tiny K-12 school in Canada's High Arctic to my present time and place and placed a few of my art experiences in one community within a broader framework through reading and reflecting on relevant research. The writing process itself was significant. As Zinsser (2015) argues, writing is a powerful search mechanism which can allow one to come to terms with one's life narrative.

Learning in and through the arts about the Arctic is important for both art specialists and non-art specialists. Jokela (2013) helps us make sense of the North as an intextual narrative. He writes about how as a product of a Western artistic education and a native of a village in Lapland, Finland, he places himself midway between the two, and looks in two directions. The North for him is thus an intertextual narrative in which the local people's stories, meanings and truths are interwoven with Western art and science.

Additionally, Jokela and Huhmarniemi (2022) argue that ecological knowledge, Indigenous knowledge, local knowledge and tacit knowledge are concepts highlighting the diverse ways of knowing in rural communities living close to nature. And further because the interconnection between the ecological and the cultural is evident in the Arctic the term *ecoculture* is useful to emphasise the connection of communities to places. They employ the terms *Arctic art education*, *new genre Arctic art*, and *northern knowledge*, to discuss how art in the North and the Arctic fosters education for sustainability and the revitalisation of ecoculture. For example, artists, teachers, and young participants in winter art projects in Northern Scandinavia and North West Russia transformed northern knowledge to respond to the needs of contemporary society and decolonisation, resulting in winter ecoculture revitalisation and the fostering of knowing with nature.

Through my university's participation as a member institution of the University of the Arctic, in which international organisations focus on increasing knowledge in and about the Arctic, we aspire to increase understanding and appreciation of the many complex aspects of the North. One important way we do this is through collaborative projects involving specialists and students from the member institutions. As an arts specialist I am currently involved in a project, *Lessons of the Land: New Genre Arctic Art and Land-Based Learning,* involving researchers and community organisations from several countries. This project will establish a hybrid realisation model (digital and onsite) for an art education course for student teachers. It will support sustainability, social justice, and well-being for all citizens, especially children and young people in local schools and communities in the Arctic. Using dialogical and participatory art-based methods with Land-based education and digital media education, the activities will embrace and promote respect, cultural sensitivity, and cultural and social sustainability. This means involving and consulting local Indigenous, multicultural and non-indigenous communities about our activities and knowledge construction. We will be learning in the arts with our focus on the Arctic. As Jokela and Huhmarniemi (2022) point out, such projects can transform northern knowledge to attune to the needs of contemporary society and decolonisation, which in turn can revitalise winter ecoculture and nurture knowing with nature. With these developments in mind, I am convinced that new horizons are possible for the arts in education (Greene, 2013), and that learning both in and through the arts in education offers such opportunities.

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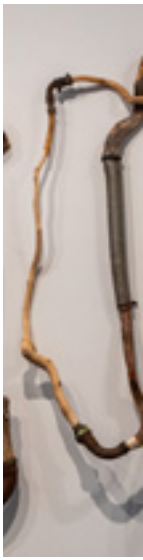
This book examines art, design, craft, and education in the North, Arctic, and near-Arctic regions. The chapters illuminate how contemporary art in these areas promotes and critiques sustainability through education, community engagement, and locally rooted artistic practices. Each chapter offers unique approaches to addressing urgent social, cultural, and environmental issues affecting Arctic regions, with art serving both as a pedagogical tool and a form of activism. The contributions to this eleventh Relate North book showcase the richness and expansion of new genre Arctic art education.

The book will interest a wide audience, including cultural animators, sociologists, artists, designers, crafters, educators, and practice-based researchers. Additionally, it will be relevant to undergraduate and postgraduate students in art, design, and education, as well as to museums, cultural institutions, scholars, and policymakers focused on contemporary art, craft, design, and education.



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