

Ásthildur B. Jónsdóttir

Artistic Actions for Sustainability

Potential of art in education for sustainability

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I dedicate this thesis to my children Sóley Hrönn
and Kristófer Daði who inspire me every day!

We got a job to do

We got to

Save mother earth

Be the ocean when it meets the sky

"you can make a difference, if you really try"

Be the magic in the northern lights

"six days....six nights"

Be the river as it rolls along

"it has three eyed fish and it's smellin' strong"

Be the rain you remember fallin'

"be the rain, be the rain"

Neil Young

Abstract

This review focuses on the potential of art in education for sustainability in the context of teacher education and art creation. Both action research and art-based research are used to explore the role that art and art education might play in Education for Sustainability (EfS). These two approaches created a space where I was able to gain a better understanding and awareness of EfS. Two courses conducted annually within the Iceland Academy of the Arts teacher education programme formed the foundation of the research which spanned six years. Findings were presented in 7 articles, three exhibitions and this review, in addition to being discussed at conferences and regional courses.

Sustainability is a contested concept and EfS takes several forms depending on the definition of the concept. In this research I used the definition of finding a balance between well-being and the integrity of nature. Concepts from critical, place-based, and visual culture art education are fundamental to this research.

In the early stages I focused on my own work practices and context to explore the core of the pedagogy I wished to understand. I saw two important issues emerging in the discourse found in the practice and education of art teachers for sustainability. One issue led me to design interventions addressing virtues and values, in particular the spring workshop in the Botanical Garden of Reykjavík. The other issue was the significance of participation in developing the kind of conduct, character and manner needed for action competence, a core concept in planning sustainability education. By developing different settings for learning with student teachers, several forms of pedagogy could be investigated.

Sustainability issues were identified by participants and extended through an art-based approach. Collaborative work practices aimed at making an impact on students' and museum visitors' understanding and sharpening their awareness of environmental, cultural, economic and social issues. To this end I used contemporary art, artistic examination, experiments, installations and purposeful curatorial practices in the art exhibitions. When working with project-based learning that incorporates participatory pedagogy both the student teachers and I have learnt to understand the role that art might play in our development and understanding of EfS. Nurturing supportive learning conditions allowed us to develop our efficacy and working with others with shared motivation has led to collective efficacy. The artistic actions are dynamic and are dependent on time as

people move and grow.

Towards the end of the research I was ready to construct a four-stage heuristic device to guide my future work in EfS, based on two concepts, values and culture, and in line with the range of experiences and observations emerging in the work with students. In each of the four stages the user is required to question both values and culture, while taking note of the presence or absence of EfS principles.

My view of learning incorporates transdisciplinary approaches that allow for different perspectives and types of knowledge. This research study has shown how collaboration in community-based practices and participatory pedagogy are central in developing an understanding of EfS. It also highlights the importance in EfS of student driven initiatives with a strong connection to lived experience. For student teachers to develop action competence and collective efficacy they should experience learning environments where young learners are expected to find their own ideas and voices, and express themselves meaningfully. Creating work settings for choice based learning empowers educators and students as they discover conditions and settings in which they become empowered.

This research supports the conclusion that through combining artistic approaches and by connecting practice to theory, art has great potential in education for sustainability.

Ágrip

Möguleikar samtímalistar til menntunar til sjálfbærni eru rannsakaðir og metnir út frá sjónarhorni kennslufræða og listsköpunar. Verkefnið byggir á starfendarannsókn og listrannsókn. Rannsóknin fór fram í listkennsludeild Listaháskóla Íslands þar sem ég starfa sem lektor og fagstjóri. Tveir lykiláfangar voru lagðir til grundvallar starfendarannsókninni, Listir og sjálfbærni og Kennslufræði sjónlista, þ.á m. verkefni sem unnið var með kennaranemum og grunnskólanemendum í Grasagarði Reykjavíkur. Í áföngunum þróaði ég mismunandi aðferðir til að læra með kennaranemum. Lögð var áhersla á þátttöku og tilraunir sem tengjast áherslum gagnrýnnar kennslufræði (e. critical education). Ég kannaði hvernig hægt er að skynja, túlka og skilja hugtakið sjálfbærni með því að skoða, skapa og túlka samtímalist.

Hugtakið sjálfbærni er umdeilt og í stöðugri þróun og til eru margar skilgreiningar á því. Hér er stuðst við þann skilning að kjarninn sé jafnvægi á milli ‘hins góða lífs’ og virðingar fyrir þeim takmörkunum sem náttúran setur. Skilgreiningar á hugtakinu sjálfbærni ræður því hvaða kennslu- og námsaðferðir verða fyrir valnu. Gagnrýnið listrænt grenndarnám (e. critical place-based education) er sú aðferð sem ég aðhyllist.

Ég þróaði eigin starfshætti með því að ígrunda starf mitt. Ég athugaði hvernig náms og kennsluáðferðir hafa hentað best í þágu menntunar til sjálfbærni og hvernig ég gæti þróað þær áfram. Ég greindi gögnin mín og fann kennslufræðilegan kjarna sem einkenndi starf mitt.

Í upphafi rannsóknarinnar lagði ég mesta áherslu á eigið starf og samhegi menntunar við líf og reynslu kennaranema. Með því að þróa ólík verkefni sem kröfðust þátttöku á vettvangi fengu kennaranemar tækifæri til að gera tilraunir og prófa sig áfram við að tengja saman fræði og framkvæmd. Það fólst meðal annars í því að skynja, túlka og nýta reynslu úr mismunandi umhverfi. Með vinnu á vettvangi gafst nemum tækifæri til að tengja eigin reynslu við fræði og finna nýjar leiðir til miðla sjálfbærni í gegnum listir.

Á þeim sex árum sem rannsóknin stóð yfir þróuðust áfangarnir og áherslurnar. Það leiddi til þess að rannsóknarspurningarnar tóku breytingum. Með greiningu á gögnum fann ég lykilatriði áfanganna. Undir lok rannsóknarinnar þróaði ég greiningatækni sem tók mið af eigin reynslu, hvort í senn því sem heppnaðist vel og því sem betur mátti fara. Tækninni er skipt í fjögur stig þar sem notendur spyrja

spurninga sem tengjast eigin gildismati, menningu og sjálfbærni.

Fræðilegt framlag rannsóknarinnar á sviði menntunar til sjálfbærni var í formi sjö ritrýndra greina/bókakafla og listrænnar túlkunar á viðfangsefninu sem fólst í þremur myndlistarsýningum, auk þessarar ritgerðar. Það var þýðingarmikið að vinna með báðar rannsóknaraðferðirnar samhliða. Með því móti var varpað ljósi á niðurstöðurnar bæði með hefðbundinni skriflegri greiningu og með myndlistarsýningum og eigin listsköpun. Þessar ólíku rannsóknaraðferðir gerðu mér kleift að þróa eigin starfskenningu og fagmennsku sem kennari á sviði kennaramenntunar og listkennslu.

Á hverju ári hefja nýir kennaranemar nám við Listaháskóla Íslands, sem hafa í farteskinu fjölbreytta reynslu og þekkingu frá fyrri störfum. Mannauðurinn í kennaranáminu felst m.a. í því að virkja þá þekkingu.

Niðurstöður mínar gefa til kynna að menntun til sjálfbærni krefjist þverfaglegrar nálgunar sem gerir ráð fyrir fjölbreyttum sjónarmiðum og breiðri þekkingu á fyrirbærinu sjálfbærni. Samvinna í samfélagsmiðuðum verkefnum hefur einnig reynst mikilvæg. Virk þátttaka í að tengja kennslufræði og framkvæmd getur hjálpað til við að auka skilning á sjálfbærni.

Tiivistelmä

Tämän väitöskirjan aiheena on arvioida taiteen mahdollisuuksia kestävästä kehityksestä edistävällä kasvatuksella opettajankoulutuksen ja taiteen tekemisen kontekstissa. Tarkastelin sekä toimintatutkimuksen että taidepohjaisen tutkimuksen avulla, millainen rooli taiteella ja taidekasvatuksella voi olla kestävästä kehityksestä kasvatuksella (Education for Sustainability). Kahden eri lähestymistavan käyttäminen loi tilan, jossa kykenin saavuttamaan paremman ymmärryksen ja tietoisuuden kestävästä kehityksestä kasvatuksesta. Perustana tälle kuusivuotiselle tutkimukselle ovat olleet kaksi Islannin Taideakatemian opettajankoulutusohjelman puitteissa vuosittain järjestettävää kurssia. Tutkimuksen tulokset on esitetty kuudessa artikkelissa, kolmessa näyttelyssä sekä tässä kirjoitelmassa. Tuloksia on lisäksi käsitelty konferensseissa ja alueellisilla kursseilla.

Kestävä kehitys on kiistanalainen käsite, ja kestävästä kehityksestä kasvatusta saa useita muotoja riippuen käsitteen määritelmästä. Tässä tutkimuksessa käytin kestävästä kehityksestä määritelmän tasapainon löytämistä hyvinvoinnin ja luonnon koskemattomuuden välillä. Kriittisen, paikkaperustaisen ja visuaalisen kulttuurin taidekasvatuksen käsitteistö on olennainen osa tätä tutkimusta.

Tutkimuksen alkuvaiheessa keskityin omiin työskentelykäytäntöihini ja kontekstiin tarkastellakseni sen pedagogiikan ydintä, jota pyrin ymmärtämään. Käytännöistä ja taideopettajien kouluttamisesta kestävästä kehityksestä löytyi diskurssi, josta nousi esiin kaksi avainkysymystä. Ensimmäinen kysymyksistä johti minut suunnittelemaan arvoja ja hyveitä käsitteleviä interventioita, joista tärkein oli Reykjavíkin kasvitieteellisessä puutarhassa keväisin järjestetty työpaja. Toinen kysymys oli osallistumisen merkitys kehitettäessä yhteisöllisten toimintataitojen kannalta olennaisia menettelytapoja ja käytänteitä. Yhteisölliset toimintataidot ovat yksi keskeisimmistä käsitteistä kestävästä kehityksestä kasvatuksen suunnittelussa. Kehittämällä erilaisia oppimisympäristöjä yhdessä opettajaoppilaiden kanssa pystyin tutkimaan useita pedagogiikan muotoja.

Osallistujat tunnistivat kestävästä kehityksestä kysymyksiä, joita laajennettiin taidepohjaisen lähestymistavan kautta. Yhteistoiminnallisuutta korostamalla pyrin vaikuttamaan opiskelijoiden ja museovieraiden käsityksiin ja terävöittämään heidän

tietoisuuttaan ympäristöllisistä, kulttuurisista, taloudellisista ja yhteiskunnallisista kysymyksistä. Tämän päämäärän saavuttamisen keinoina käytin taiteellista tutkimusta, kokeita, installaatioita ja tarkoituksellisia kuratorisia käytäntöjä. Työskennellessämme osallistavaa pedagogiikkaa sisältävän projektilähtöisen oppimisen parissa sekä opettajaopiskelijat että minä opimme ymmärtämään, millainen vaikutus taiteella voi olla meidän kehityksellemme ja kestävän kehityksen kasvatusta koskeville käsityksillemme. Kannustavan oppimisympäristön vaaliminen salli meidän kehittää tehokkuuttamme, ja yhteistyössä muiden kanssa toimiminen sekä jaettu motivaatio johtivat kollektiiviseen tehokkuuteen. Taiteellinen toiminta on dynaamista, sillä ihmiset liikkuvat ja kasvavat ja ovat riippuvaisia ajasta. Tutkimuksen loppupuolella olin valmis rakentamaan nelivaiheisen heuristisen työkalun, joka ohjaisi tulevaa työtäni kestävän kasvatuksen parissa sekä arvojen ja kulttuurin että niiden havaintojen ja kokemusten pohjalta, joita opiskelijoiden kanssa tehty työ tuotti. Käyttäjän on jokaisessa neljästä vaiheesta kyseenalaistettava sekä arvot että kulttuuri huomioidessaan samanaikaisesti kestävän kehityksen kasvatuksen periaatteiden läsnäolo tai puuttuminen.

Näkemykseni oppimisesta edellyttää monialaisia lähestymistapoja, jotka jättävät sijaa erilaisille näkökulmille ja tiedon lajeille. Tämä tutkimus on osoittanut, kuinka keskeisiä osallistava pedagogiikka ja yhteistoiminnallisuus yhteisöllisissä käytännöissä ovat kestävän kehityksen kasvatuksen ymmärtämiselle. Tutkimus korostaa myös, että opiskelijalähtöiset aloitteet, joilla on vahva yhteys elettyihin kokemuksiin, ovat tärkeitä kestävän kehityksen kasvatuksessa. Jotta opettajaopiskelijat voisivat kehittää yhteisöllistä toimintakykyään ja kollektiivista tehokkuutta, heidän tulisi kokea oppimisympäristöjä, joissa nuorten oppijoiden oletetaan löytävän omat ideansa ja äänensä ja ilmaisevan itseään mielekkäästi. Työskentelyolojen luominen valintaperusteiselle oppimiselle sallii kasvattajien ja opiskelijoiden löytää omat voimavaransa samalla kun he keksivät olosuhteet ja puitteet, jotka mahdollistavat voimaantumisen.

Yhdistämällä teorian ja käytännön ja käyttämällä taiteellista lähestymistapaa olen tehnyt johtopäätöksen, jonka mukaan taiteella on merkittäviä mahdollisuuksia kestävää kehitystä edistävässä kasvatuksessa.

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List of abbreviations

ABR	Art-based Research
ActSHEN	Action for Sustainability in Higher Education in the Nordic region
A+EfS	The course Art and Education for Sustainability
AR	Action Research
CTE	Collective teacher efficacy
EfS	Education for sustainability
IAA	Iceland Academy of the Arts
IPCC	Intergovernmental panel on climate change
SDG	Sustainable Developmental Goals
UI	University of Iceland
UL	University of Lapland
UN	United Nations
UNESCO	United Nations Organisation for Education, Science and Culture
WIG	Workshop in the Botanical Garden

1 Introduction

This doctoral project is centred on the potential of art in education for sustainability (EfS). Sustainability is my major concern in education. I believe that sustainability is an issue where art and art education has a crucial role to play in creating awareness of our place in the world. I want to create a link between scientific knowledge and everyday life through artistic actions working with scientific facts in a creative way with a clear connection to lived experience at the same time as it creates tacit knowledge.

In this chapter I present an overview of the aim of the research, explain the research background of the study and the settings in which it is rooted. I conclude with an explanation of the structure of the review. The study took place in two universities, one in Iceland, at the School of Education, University of Iceland (UI) and one in Finland, in the faculty of Art and Design, University of Lapland (UL). I designed this joint degree programme along with my supervisors. It resulted in an article-based thesis as well as three exhibitions. That includes this review, seven articles and book chapters and three art catalogues. An action research (AR) study at UI was complemented by art-based research (ABR) at UL. In two of the exhibitions I worked both as a curator and artist including works by other contemporary Icelandic artists, while in the last exhibition I had a solo exhibition showing seven art pieces and installations.

1.1 A definition of the concept of sustainability

Sustainability is a complex concept and as a phenomenon is studied by a wide range of scholars. Sustainability is an evolving concept but in its most widespread fundamental form it links development to both environmental and socio-economic

issues. Hediger (2004) argues that it involves:

concerns for environmental preservation and economic development, and correspondingly calls for an integrated approach of evaluating trade-offs between conservation and change.

This statement however avoids the value-judgements inherent in the ‘good life’ approach to sustainability often favoured in the Nordic countries (Brúlde, 2007). Dodds (1997), for example, has identified four definitions of well-being used in research on environmental economics: well-being of the individual, well-being of the state, meeting basic needs (cf. Maslow, 1970) and capabilities (Sen, 1985).

In this thesis, I chose to follow scholars that include the term well-being in the definition of sustainability. Thus revealing different interpretations of well-being and what counts for the good life. However these understandings are very much affected by culture, nationality, gender, age, disposition and social class.

There are many values to focus on in EfS. In my work I choose to follow those put forward by the United Nations and UNESCO over the last 30 years. A new agenda was set two years ago for the next 30 years (United Nations, 2015) called the Sustainable Development Goals (SDG). To realise these goals everyone, needs to take part. When teaching about the goals teachers should encourage students to become the generation that changes the world. The goals are officially known as *Transforming our world: the 2030 Agenda for Sustainable Development* (United Nations, 2015). Earlier I followed the Millennium Development Goals (Millennium project, 2006) and the decade for sustainable goals (UNESCO 2005b) which I use as a framework for analysing my data.

In my approach I help the student teachers to develop a set of values that they can work with to approach the 17 goals; no poverty; zero hunger; good health and well-being; quality education; gender equality; clean water and sanitation; affordable and clean energy; decent work and economic growth; industry, innovation and infrastructure; reduced inequalities; sustainable cities and communities; responsible consumption and production; climate action; life below water; life on land; peace, justice and strong institutions; partnerships for the goals.

Early on it was common to discuss the components of sustainability as reflecting three sectors or pillars – environmental, social and economic. Increasingly, for example in the work on resilience of systems (Sommerkorn, Cornell, Nilsson, Wilkinson, Robards, Vlasova & Quinlan, 2013), social and environmental factors are being linked in socio-ecological approaches which work to counteract economic development. In this thesis, however, I chose a different approach, that put forward by Giddings, Hopwood and O’Brien (2002) who have proposed that one could approach sustainability by combining social and economic pillars into one of human activity and well-being as a single sector, perhaps ‘the good life’, which must function within the limits of the natural environment (figure 1.1).

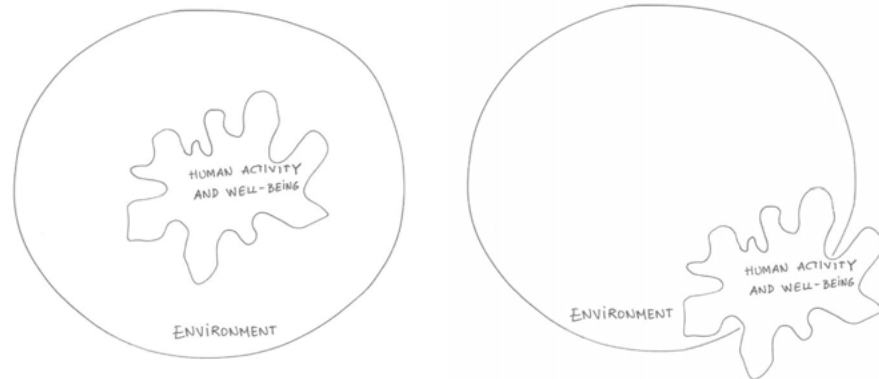


Figure 1.1 Model of sustainability (Giddings, Hopwood & O'Brien, 2002) and adapted model of sustainability (University of Iceland, 2012)

Sustainability is not a reachable destiny; it is more like an endless learning path towards a transformation that one should aim at, affecting moral standards and value systems. Sustainability requires individual involvement and collective participation when questioning and changing unsustainable routines. Therefore, sustainability transdisciplinary approaches are important in order to transcend a singular disciplinary view-point. The transdisciplinary approach allows for different perspectives and types of knowledge (Wals & Rodela, 2014).

The notion of the impact of human activity on use of natural resources and building up and destroying cultural and natural resources has been known for long time. One of the most notable and inspiring studies being that of marine biologist Rachel Carson's *Silent Spring*. The book documents the detrimental effect of chemical pollution on the environment. In her study, Carson managed to bring concerns for the everyday actions of humans to everyday awareness. Even though *Silent Spring* helped to bring this to the attention of the public, it took more than fifty years to accept it as a problem. Now in 2017 some of the world leaders are still in denial of climate change as a reality. Today we are facing rapid climate changes that can be traced to human actions (Gray & Colucci-Gray, 2014). The nature of the problem is large and we cannot take another fifty years to turn this development around. We need a change of attitude that promotes change in human behavior that provides the prerequisites for reversing this negative change.

We should not only think about performing more efficiently but also search for ways to do things differently which includes developing new routines and developing new principles and values (Wals & Rodela, 2014).

From a post-modern perspective sustainability requires continuous reflection on our actions, their known consequences, their possible unintended out-comes, and their underlying frames, premises and values.

At the same time it demands a readiness and the capacity to let go, to re-calibrate and to re-orient. (Wals & Rodela, 2014, p. 2)

1.2 Why sustainability and art education?

Learning for the future is important, but learning for the present and in the present and from the past is just as important (UNESCO, 2010). This is the complex task facing schools, teachers and learners: how can school experiences be developed in such a way that meaningful connections are made between place and time? Schools today have many diverse needs to be met. Many scientists have come to the conclusion that students need diverse approaches when learning about nature (Gray & Colucci-Gray, 2014).

We need new ways of thinking about our place in the world and the ways in which we relate to natural systems in order to be able to develop a sustainable world for our children and grandchildren. (Raven, 2002, p. 957)

Sustainability is a contested space which is made up of competing diverse agendas with regard to values, facts and conflicts. Therefore, there is a need to critically interpret the messages that are given out in relation to sustainability. Those messages are often delivered through visual culture i.e. through advertising, news coverage and metaphors, and perspectives that are to explain different concepts of sustainability. Different media connected to popular culture often reflect on what is desirable in society. All that is part of visual culture.

Many researchers have noted that when aiming to effectively address environmental problems, students should be able to distinguish between private and public environmental actions. Stating that the current endowment in science education is in a need of change to be able to fulfil multiple purposes for a globalised future (Gray & Colucci-Gray, 2014; Stern, 2000). The report from the Intergovernmental panel on climate change (IPCC, 2014) stated that the educational options for social transformation in response to climate change, which one of the core issues of sustainability are:

Awareness raising and integrating into education; gender equity in education; extension services; sharing indigenous, traditional and local knowledge; participatory action research and social learning; knowledge sharing and learning platforms. (p. 26)

In order to engage with sustainability, one productive avenue is to work critically and creatively with the visual culture. I adopted tools from critical pedagogy to engage students in this contested space, asking them to question those competing agendas, and doing the same myself. When I was searching for the potential of art in EfS I was also conscious of the need to include in the process of culture making, the making of different types of visual messages through visual culture.

My practice as an art educator has been shaped by an interest in sociocultural topics; on the one hand at a global level working on developments and changes towards a more sustainable society, and on the other as personal intimate changes towards cultural sustainability. My approach using both AR and ABR was aimed at developing for me and the student teachers a more enriched understanding about EfS and learning through art making, writings, participation and qualitative investigation, including for example, taking semi-structured interviews (Brinkmann, 2007) and fostering participation in my artistic processes. The coding of the interviews backed up analyses of my research journal entries providing evidence that I have used to show the educative influence resulting from a range of activities and actions. As a scholar and an artist, I sought to deepen my understanding of my own scholarly work and my own art and to push myself to the edge of my skills.

The core issues regarding sustainability are serious and powerful and they affect all of us. The challenge of sustainability is real and how successfully we deal with it depends on our quality as educators and how well we manage to move people to action. The opportunities for EfS are open ended. EfS calls for integrated systemic thinking (Jackson, 2003; Walonick, 1993), and it could dissolve barriers between teachers and learners, or theory and praxis, as well as across all disciplines of learning. Sustainability includes the complex wicked problems of the present time, problems that are real-world challenges with no simple answers. Each problem is unique; the solution is neither right nor wrong; and sometimes you do not know that there is a problem until the solution appears (Ferkany & Whyte, 2011; Rittel & Webber, 1973; Thompson & Whyte, 2011).

Transdisciplinary engagements need multiple methods, perspectives and approaches in designing actions in order to advance our understanding of learning-based change processes. We need to see the connections and differences between food and nutrition security for all, loss of biodiversity and ecosystem services, accelerating inequity and mismanagement of natural resources. Those issues are complex and interconnected and are therefore often better understood with transdisciplinary approaches which have great potential of affecting values and ethics when addressing the wicked issues of sustainability (Wals & Corcoran, 2012). Many artists are engaged in similar issues as they reflect on values that are important to sustainability. Examples from artistic actions are to be found in the appendix in article 1 and 2 and in the exhibition-catalogue 1.

The values that were introduced as the Millennium Development Goals strategy are still relevant and essential to international relations in the twenty-first century. These include, freedom, equality, solidarity, tolerance, respect for nature, shared responsibility (United Nations General Assembly, 2000). When looking at and interpreting artworks that reflect on those values one can gain insight into comparable issues in a more abstract way.

The seventeen SDG for 2030 continue to frame much of the work ahead.

Scholars and educators need to see how they can incorporate those goals into their works. The SDG (U.N., 2015) focus on eradicating poverty and hunger; ensuring education and health for people; encouraging more equality; sustainable energy use; innovation and development; sustainable cities; responsible consumption; environmental protection, and increased international cooperation. *Transforming our world: the 2030 Agenda for Sustainable Development* has received broad support from NGOs and many international institutions. However a commentary in *The Economist* argued that 169 targets within the 17 goals are too many (The 169 commandments, 2015). Kristín Vala Ragnarsdóttir and her colleagues (a group known as Balaton; an international group of specialists in sustainability) developed a model to demonstrate how the seventeen goals interact and find ways for people to live on the earth in a sustainable manner (H.Í., e.d.). That model can help scholars and students to see the interconnectedness of things.

The SDG have also been criticized for intrinsic flaws in the very concept of sustainable development and the inability to set goals that would stabilize rising carbon dioxide concentration or ensure environmental harmony (Singh, 2016).

There is a pressing need to introduce new ways of thinking, new ways of seeing ourselves as part of a larger whole, where we all take responsibility for our actions and expressions (Cagle, 2014). People have been making art since the beginning of time, visually expressing themselves to make sense of life; considering rough changes in life; contemplating spirituality and expressing it through rituals; creating personal meaning and symbolism; and using arts as a powerful force to investigate, express ideas and ideology. Artists often lead the way in exploring maps and highlighting the importance of social justice and environmental prosperity, that changes the way we see ourselves and our environment. Artistic creativity is an inquiry into existence itself. In many ways, various artists (examples are to be found in the articles and exhibition catalogues that are in the appendix) with their art pieces have created the tools and the ethical attitude and cultural frame which is needed to make a difference in the world.

Sustainability can be seen as the struggle for a balance between the good life and the integrity of nature, resulting in human actions often coming into conflict with the integrity of nature and crossing the earth's environmental limits as a result of over-emphasis on the "good life" (Háskóli Íslands, 2012; Sampford, 2010; Hattingh, n.d.). These worries are shared by other international scholars and the message enhanced by the use of satellite technology:

Increasingly, people believe that the integrity of the earth itself is under threat - a belief that is fuelled by disturbing images and reports from outer space (Tuan, 2004, p. 15).

Even though some scholars emphasise activities which influence nature and the environment, and others democracy and equality or the stability of economic growth it is always important to consider how these factors interact. Jutvik and

Liepina (n.d.) point out that all these factors are founded in culture. Therefore teachers and students should consider culture and the diverse cultural groups that make up each society. Douglas Kellner has connected the methods of critical pedagogy to the multicultural approach. This could promote and strengthen multicultural education and intersectionality strengthening sensitivity toward diversity and cultural differences:

[C]ritical pedagogy can promote multicultural education and sensitivity to cultural difference . . . [It] involves teaching the skills that will empower citizens and students to become sensitive to the politics of representations of race, ethnicity, gender, class, and other cultural differences in order to empower individuals and promote democratization. (Kellner, 2000, p. 1)

Some scholars align EfS with the characteristics of critical pedagogy, including equality and democracy. Paulo Freire pointed out that people must learn to consider their social position in society, because that is the only way in which they can influence society. As active members of society, people develop prerequisites for global development (Freire, 1970).

The students—no longer docile listeners—are now critical co-investigators in dialogue with the teacher . . . education, as a humanist and liberating praxis, posits as fundamental that the people subjected to domination must fight for their emancipation. To that end, it enables teachers and students to become subjects of the educational process by overcoming authoritarianism and an alienating intellectualism. (Freire, 1970, p. 86)

The Henry Giroux approach to critical pedagogy involves offering ways to think critically and to act with authority as agents in the classroom, but he is also concerned about:

[P]roviding students with the skills and knowledge necessary for them to expand their capacities both to question deep-seated assumptions and myths that legitimate the most archaic and disempowering social practices that structure every aspect of society and to take responsibility for intervening in the world they inhabit. (Giroux, 2007, p. 6)

One approach mentioned above to understand sustainable development is to unite social, cultural and economic components in an ongoing interaction with nature. Teachers can address the goal for economical, ecological, cultural and societal development. The main focus in EfS in Iceland has been on the environmental sector. My intention is to demonstrate the potential of art and art education in EfS. That fits well with Hammersley's (2006) ideas about how different activities have different horizons. It is also in line with Nicholson's ideas as he states: "The arts provided an optimistic space that promised social cohesion and personal freedom". (Nicholson 2011, p. 23)

Artists, in whatever medium they work, can create works that are closely related to social context and are influenced by current affairs. Artists today explore ideas, concepts, questions, and practices that examine the past, describe the present, and imagine the future (Hicks & King, 2007). This thesis reflects on how artists identify, interpret or create new understanding that can be connected to other disciplines. Teaching critical thinking is often part of EfS, increasing the competence of students in identifying values and understanding the importance of taking action and being an active participant in a community (Breiting, Mayer, & Mogesen, 2005). Critical thinking is used in this research as the ability to think and make decisions in a clear and rational way about what to do or what to believe. This includes the ability to engage in reflective and independent thinking. Art projects that engage with sustainability offer a combination of critical and creative thinking, often focusing on perceiving and exposing social and political contradictions, and thereby empowering viewers and participants to transform oppressive conditions (Jónsdóttir & Antoni, 2015).

1.3 The artistic approach and my professional role

The AR part of this study focussed on two core activities of my work at the IAA. The first is my leadership of the IAA teacher education master programme and, specifically, the course *Art and Education for Sustainability* (A+EfS). The second is a collaborative project carried out each spring at the Reykjavik Botanical Garden by the IAA, a local elementary school, the Reykjavik cultural festival for children, and the Botanical Garden itself. The collaboration is based on a weeklong art workshop in the Botanical Garden (WIG) in connection with the Children's Cultural festival, concluding with an exhibition.

For the past seven years as a lecturer at the Iceland Academy of the Arts (IAA) teacher education department, I have investigated, developed, designed, facilitated and implemented different processes and actions to promote EfS. The teacher education department runs a programme at master's level for artists with BA or MA degrees in arts. Most of the students of the department are mature artists wishing to become teachers. In different courses, I have provided settings for the student teachers to proactively build their theory of practice towards addressing issues related to sustainability, allowing them to discover ways towards a sustainable society through education. The most successful component in working with EfS with the student teachers has been the emphasis on student driven initiatives. In the articles that are attached in the appendix and in this review, I reflect on evidence that supports this i.e. in article 7.

This review reflects on my practices as a lecturer at the Iceland Academy of the Arts (IAA) where I connect to the potential of Art in EfS through art education and teacher training; Another source of development and reflection were my own artworks where I represent my care for nature and socio-cultural topics in different

communities; I curated and discuss here three different art exhibitions that offered visitors the opportunity to stop for a while and to interpret and reflect on selected works of Icelandic artists and also my own art that is concerned with sustainability.

I use AR and ABR together to collectively help me unfold the potential of art in EfS (figure 1.2) What the arts-based approach adds to AR is more diverse methods used to understand the parameters that characterise EfS. My project is informed by past projects, but also seeks to extend the possibilities of what constitutes both research and art. This process is creative and emergent, a dynamic process of inquiry (Sinner et al., 2006). It is also characterised by the encouragement of peer collaboration.

The AR principles underlies much of the AR research conducted at the University of Iceland. The latter part of the study builds on ABR at the Faculty of Art and Design, in the University of Lapland. Yet they are not independent of each other. Two years into the doctoral project when analysing my journals, I felt that it was not consistent to look at the potential of art in EfS without using art in my research practice. These were art-based investigations undertaken to gain new knowledge by means of artistic practice, creative outcomes, and through art installations and exhibitions.

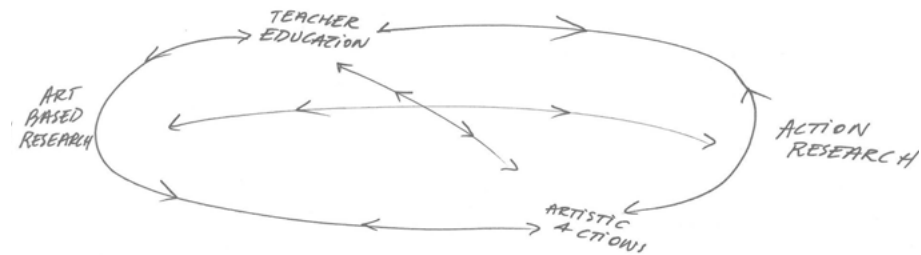


Figure 1.2 Interconnectedness of the research process

The interaction behind the two approaches used in this research gives a rise to a net of research processes (figure 1.2). The findings are presented both in a written form and in an artistic form. Both the articles and the artworks are stand-alone items, each on their own terms. The articles were peer reviewed and each exhibition was evaluated by external experts. Each part of the study has created new insights into the notion of the potential of art in EfS. I did not use the artistic approach as an alternative, nor as a supplement to conventional educational research because I was not trying to replace it. One method is not superior to the other. Instead, all approaches operate equally.

Art-based approaches were used to translate research data that I gathered in a conventional qualitative manner, but in most cases I have used it as an experimental pathway for my inquiry into how I can make my thinking on EfS visible. I have

created artworks with the intention of experientially inquiring into working with my own creative processes as an artist and curator. In my work at IAA with student teachers and in my artistic practice I emphasised participation with others, building on a foundation of personal practical knowledge, theories and practice. The aim of this multifaceted study was to develop comprehensive knowledge on sustainability issues in the world, including education for sustainability. This enabled the participants to connect to those issues and to take action to change their world, based on new knowledge. That is because the arts can integrate knowing, doing and making (Irwin & de Cosson, 2004).

Multiple perspectives are needed when learning about the complex issues of sustainability. When engaging students through the context of transdisciplinary engagements they are more likely to gain deeper understanding (Wals & Rodela, 2014). This doctoral research aims for contributing to advancing understanding that art can take part in the learning processes.

1.4 Starting out - the problem comes to me

We live in a critical time for teacher education in Iceland. All Icelandic universities that take part in teacher education are facing the need for gaining a new understanding of the ecology of our planet and our world at a time when this seems perhaps more important than ever because of climate change and our dominant unsustainable lifestyle. Simultaneously those universities need to reorient their approaches to address sustainability. The term sustainability is being used widely in institutions of higher education. Many teachers are facing difficulty addressing sustainability and its wicked problems (Rittel & Webber, 1973) even though the Icelandic national curriculum for all school levels in Iceland has placed EfS as one of the fundamental pillars for all education and all subjects since 2011 (Ministry of Education, Science and Culture, 2011b). Each school in Iceland chooses how it will work towards sustainability. The National Curriculum proposes a view of EfS based on it being one of six fundamental concerns to be incorporated into the work of school in the widest sense, in the classroom and the school as a whole. There is however no specific guideline or curriculum for how EfS should be incorporated or taught.

Sustainability is an important factor for the arts and art education. It motivates critical reflection about social and political practices, and spotlights human engagement with the cultural and natural worlds. It challenges the present generation to take future generations more seriously. Art can create social and personal transformation, and is generally regarded as having a good influence on societies (Carey, 2005). Sustainability is an issue where art has a role to play in creating awareness of our place in the world. It can create a link between scientific knowledge and everyday life. One way of creating this link is through artistic actions that have the potential to work with scientific facts in a creative way with a clear connection

to lived experience at the same time as it harnesses tacit knowledge (explained on page 19). I have discovered through art observation and art making that one can discover knowledge which has the potential to both serve and lead new discoveries connected to EfS.

In my work as a teacher of EfS I have incorporated a participatory approach for the student teachers at IAA, explained in article 7, and in chapter 5. At the IAA we have examined the making and teaching of art as a social act, considering it within a philosophical, historical, political, and sociological context. We have developed a pedagogical foundation through visual art education, critical theory in art, and participatory pedagogy. When educating artists to become teachers it is important to keep in mind the implications of the fact that different activities have different limits. As a teacher educator I found it important to approach this research with a range of methods both through a written and artistic approach. With the purpose of impacting the profession, I had to model appropriate behaviours in order for those behaviours to be observed, adjusted, replicated, internalized, and applied suitably to the student teachers. “Modelling means exhibiting behaviour that is observed and imitated by others.” (Kauchak & Eggen, 2005, p. 396). It was important to use art to reflect on the potential of art in EfS because that way we experienced a key to develop our thinking (Dewey, 1916). The experience helped both me and the student teachers to form knowledge, as we collected data, reflected on that data orally, in writings and artistically, and developed our theories of practices.

1.5 Peculiarity of education for sustainability

All over Europe there is a great impact of European policy in national curriculum policy-making. That includes an ongoing cooperation on education policy that has taken place for several decades (Nordin & Sundberg, 2016). In this review, peculiar aspects of sustainability are recognised by addressing how I personally developed from being an educational practitioner into educational researcher on EfS. The process has included the transformation of my cultural orientation from normative to analytical, from personal to intellectual, from particular to universal, and from experiential to theoretical. By recognising the peculiarity of education for sustainability and the complexity the process became more interesting and fulfilling (Labaree, 2003).

1.5.1 International perspectives on EfS

Professionals that are responsible for developing curriculum policy need to be progressive when planning changes in educational systems if they want to follow timely transformations. The key focus (Nolet, 2009) for educators when designing curriculum policy for EfS should include the question of how students can utilise their own knowledge to make informed decisions about the future. In article one

(appendix 1) I discuss how art teachers can meet these new demands in education through addressing “place”. It deals with the importance of learners finding ways to connect to their own lives and their local environment through critical thinking about their real needs for a good and fulfilling life, and well-being.

UNESCO (2013) has published a new EfS strategy for 2014-2021 where they put a focus on the human rights and dignity of every woman and man, which they emphasise must be the starting point and the measure of EfS success. That calls for reformation, to build a sharper, more effective, more performing operation:

UNESCO must strengthen its work to release the full power of human ingenuity as a source of resilience at a time of change and as a wellspring for creativity and growth. Cooperation in education, the sciences, culture, communication and information has never been more urgent in this context. ... Education for sustainable development is bound to play a particularly important role in changing habits, values and modes of consumption in order to support the path towards sustainable development. The ethics of science and technology, including bioethics, attract increasing attention. Recent focus is on the role of culture as a vector for sustainable development. (UNESCO, 2013, p. 7-8).

Factors of sustainability, continuity and resilience are paramount in this regard. In the context of higher education, EfS is perceived as an external force aimed at pacifying academic freedom (Holmberg & Samuelsson, 2006). Principles of academia allow scholars to have freedom to communicate ideas and facts without being targeted for repression. Many universities are still in the process of finding space for EfS within the institutions.

IAA is now at the stage of engaging in the fundamental challenge of reorienting teaching, learning and research developing new competencies and innovations that can contribute to sustainable living. Scholars in all of the IAA departments have started to show more interest in EfS, and have initiated more collaboration between departments.

Empirical analytical and reductionist ways of understanding the world need to be complemented with more integrative and holistic ones, as well as methodologies and methods better suited to coping with complexity, uncertainty and contested knowledge. (Wals, 2013, p. 3)

EfS follows an interdisciplinary and multidisciplinary approach and the nature of teachers’ education and training orientations in Iceland welcomes integration of EfS in school curriculum. Bowden stated about organising EfS in higher education:

[H]igher education is duty bound to do all it can to transform prevailing epistemic assumptions and to liberate human and social development in the further pursuit of the considered and inclusively responsible life. (Bawden, 2008, p. 65)

1.5.2 Finding the role of art in the contested space of sustainability

At IAA there are many examples within different departments where the academic staff is seeking to reduce their environmental or ecological footprint often through student-led initiatives. The IAA curriculum also features new courses and modules containing elements of EfS and in some cases the focus on EfS has been integrated in existing study programmes.

The 2011 National Curriculum for pre-, primary, secondary and vocational schools in Iceland lays out six important issues, two of which are EfS and creative work. Other issues are literacy, equity, democracy and human rights, and health and well-being. These concerns resonate with the substance of the five learning pillars promoted by UNESCO in its implementation of the Decade of Education for Sustainable Development 2005-2014 (UNESCO, 2005).

The role of the Iceland Academy of the Arts is to encourage progressive thinking in the arts and to stimulate innovation and development in different fields. The Academy offers education in the arts at the university level and conveys both knowledge and professionalism in the arts to Icelandic society. (IAA, 2013)

The three main official IAA (2013) values for guiding the focus and direction of its work are:

- Curiosity
- Understanding
- Courage

Connecting those values to EfS is fairly straightforward since curiosity encourages us to ask questions about issues related to sustainability. That includes searching for new pedagogical and ideological approaches, sustainable solutions, and discovering different ways to tackle wicked problems. We analyse our answers as we strive to understand and interpret what is foreign to us with a focus on respect for diverse approaches and different viewpoints. When discussing multiple points of views of artistic interpretation, we can refer to the place from which the artist or the viewer looks at the subject. But as it is used in this research, it can also mean the attitude or the opinion the artist is expressing about the subject. In the context of wicked problems it is important, and one may argue, it is an epistemological necessity, to explore different ways of thinking based on different cultures (Funtowicz & Ravetz, 1996; Rittel & Webber, 1973; Westely, Scheffer & Folke, 2014). This also provides opportunities to reflect on different hypotheses for scientific problems as the student teachers can explore different opinions or interpretations of issues related to sustainability. Eisner (2002) pointed out how, in this context, arts have the potential of celebrating multiple perspectives because the arts can teach a complex, diverse form of problem solving that can change with circumstances and

different opportunities (Eisner, 2002). Through understanding and training we have the potential to develop talents and new skills that are required to include EfS as part of our professionalism. In that way I have strengthened my courage to follow through on my principles, values and my artistic actions and vision.

When I started to work at the IAA it was the first year that the school offered a master's programme in art education for artists training to become art teachers. In the spring 2010 after teaching for one year in the department I suggested we would offer a 6 ECTS course on A+EfS. My main argument was that the students needed a foundation course about EfS as it had been defined as one of the fundamental pillars of the Icelandic national curriculum. The suggestion was well received by the dean of the department and I was hired to design this course and teach it in the autumn 2010. This course became the pilot project for the work developed in this thesis.

Education and research in the field of sustainable development calls for interdisciplinary approaches and collaboration while depth and expertise is applied to the individual disciplines. In the A+EfS course I have focused on creating settings that have the potential of increasing local innovation and creativity which is considered one of the fundamental approaches in an information or knowledge-based economy (UNESCO, 1997).

Knowledge is critical to working with sustainability and works hand-in-hand with both tacit and emotional knowing. Freire emphasised the importance and the value of knowing and respecting the life experiences of others and in that way promoting development for the masses (Freire, 1995). Knowledge is a necessary premise for a more sustainable society and is the building block on which we construct our values and make our decisions (Peters & Wals, 2013).

Critical pedagogy is not about polemics or preaching one's politics in the classroom. Rather, it involves authorizing students to share responsibility for their education while posing problems based in students' collective experience in the world around them. Critical pedagogues challenge the status quo both in content and method. (Thelin, 2005, p. 117-118)

Interdisciplinary and cross-curricular pedagogies can bring about general changes in attitudes and lead to a better future for all. Arts are important both for the mind and the hand and have a wide-ranging influence. Works of art evoke a variety reactions, as discussed in the exhibition catalogues (see appendix 8-10) and in the articles 1-7 (see appendix 1-7). Interdisciplinary work has been shown to be good for obtaining results, for instance by intertwining art, creativity and sustainability (Eisner, 2002).

1.6 The power of art

Artworks can have the power to impact how cultural messages are transmitted and received. This gives them the power to alter the culture itself (Vasudevan, 2008). Some artworks reflect on issues that are daunting with regard to climate change

and the unsustainable development we have faced for the last century. That can cause vast disempowerment when thinking of those issues. Some scholars have warned educators from using such scare tactics because they are not likely to change anything (Sterling, 2008). Therefore I think it is important to select artworks that are open to interpretation and encourage critical thinking when reflecting on the problems we are facing in sustainable development, many of which are ‘wicked problems’ (Macdonald & Jónsdóttir, 2014; Rittel & Webber, 1973). Some artists reflect on either governmental or global processes that are distant, intangible and difficult to connect with and allow for more open interpretation when monitoring how things are changing, such as why people are damming the rivers, or addressing the questions of pollution. I think it is important to create a space for this kind of a theoretical perspective while at the same time it is important to focus on whole systems thinking¹ that acknowledges the relationship between EfS and values education.

Contemporary art sometimes faces isolation but if seen in a curated setting, such as where sustainability issues are displayed side-by-side, the combined visual message breaks down isolation and builds up understanding. It is important to create intermediate spaces that increase student teachers understanding of performance expectations and at the same time address, interpret and analyse sustainability issues in the society and the environment with a full range of the potential of artistic approaches.

Some of the artworks selected for the exhibitions (appendix 8-10) were based on a local context, but still they had relevance to some global issues of sustainability. Other works were concerned with perennial issues of sustainability i.e. social justice dealing with equal rights and well-being, and made references to the local context. In EfS we need both local and global perspectives when looking at the potential of art.

When selecting artworks for the two first exhibitions that are a part of this thesis I used the definition of sustainability that includes focus on well-being and environmental integrity.

The intimate space, which is sometimes called the third space (the museums in the case of the exhibitions) gave the student teachers the ability to develop understanding and relationships (Hearn & McQueen, 2016). This is in line with Darling-Hammond (2014), in a recent review of teacher education:

[C]hanges in teacher evaluations call for] a conception of teacher evaluation as a part of a *teaching and learning* system that supports continuous improvement, both for individual teachers and for the profession as a whole ...evaluation needs to be a part of an integrated whole that promotes effectiveness during every phase of a teacher’s career.

¹ Whole systems thinking is a framework for seeing the whole picture, for establishing interrelationships and understanding phenomena as an integrated whole (Capra, 1996; Clayton, Clayton, & Radcliffe, 1996; Sterling, 2008; Tilbury et al., 2005a).

Such a system must ensure that teacher evaluation is connected to – not isolated from – preparation and induction programs, daily professional practice, and a productive instructional context (p. 5-6).

I believe in facilitating settings that provide time and space for student teachers to make connections to their prior knowledge, which is sometimes called bridge methodology (Ritcchard, Church & Miller, 2011). As a practitioner I check in periodically, having the student teachers articulate their thinking in order to track progress and spot difficulties. They write about, discuss and intervene on an individual basis and as a group they conduct a mini-lesson to react to their own thinking processes. I give detailed formative assessments, either written or oral, to help them to move forward. The student teachers make concept maps to follow their own development, and in large and small groups they discuss and write about the connections they make to the literature. These are the first steps in belonging to a learning community.

The A+EfS course expects its students to actively cooperate with the local community within their municipality or local area. All participating students of the course have reflected on the importance of creating projects that connect theory and praxis. They have also found it essential that democratic schools take part in creating a sustainable society of collective responsibility. In the A+EfS I do not aim at developing new subjects or fields of study. The course aims for the students are to develop educational material and attitudes that should be emphasized (Ministry of Education, Science and Culture, 2011a).

The A+EfS course has been taught annually since 2010 with an emphasis on the attitude of the individual towards human rights and ecological (environmental) issues, in relation to economic and social equality. Nurturing a sense of self and self-criticism is emphasised with regards to democracy, activism and participation. These are some of the concerns the Ministry of Education, Science and Culture introduced in EfS (2011b).

During the six years I have worked on this research the demands of the project have changed. Some teachers and student teachers have come to terms with the word sustainability and can work with it. But all teachers are still facing the complicated task of developing their teaching practices to meet these new demands and developing their professionalism towards sustainable emphases. This thesis reflects on how the IAA program prepared student teachers for this task over past six years, including connecting in-service art teachers to continuing education possibilities.

In EfS it is important to examine the interaction between the factors that influence human survival and well-being. Giddings, Hopwood, & O'Brien (2002) therefore proposed that the connection between human activity and well-being is linked to ecological issues and the environmental limits of the earth. Well-being itself takes several different forms, including well-being as a state of mind or as a state of the earth, capability for action or a basic needs approach (Dodds, 1997).

1.7 Teacher education and my professional practice adopting EfS

If teachers are expected to develop their professionalism it is important for them to have access to a supportive learning community. Professional learning communities encourage the sharing of power, authority, and decision making (Hord & Sommers, 2008, p. 10). At IAA I was the first to create a research group in connection to EfS where alumni and student teachers come together and get support, i.e. through dialogue, different activities, seminars, conferences and museum visits.

The nature of my work as an academic demands that I should be able to work independently when needed as autonomy is required to be exercised within the limits of shared standards of practice (Hargreaves, 2000). At the same time I have chosen to collaborate with others from my own and other art disciplines, for example, in making both practical and strategic decisions on how to prepare the IAA students as art educators and develop the strength of the programme. The main elements that comprise my work at IAA are academic, including teaching, research, and innovation. As a programme director of the study programme my responsibilities include general participation in the formation and development of the art education department, the organization and preparation of teaching periods, as well as any other management pertaining to these responsibilities. These issues are discussed regularly at different meetings.

I work with clearly defined criteria, for example, with the EfS focus, the MDG's and the SDG. This enables me to make professional judgments about whether the quality of my understanding, productive work and relationships are improving (McNiff, 2002). Through this doctoral project I have connected my own practice as an academic with an approach to research that in turn allows me to develop my practice by analysing it and identifying elements for change and different possibilities. The research process enhances my professional development by fostering my capability as a knowledge maker, rather than simply as a knowledge user.

With the artistic actions in this research, I aim to create settings for both museum visitors and the student teachers with the goals of well-being and sustainability. Many other artists, curators, and scholars have highlighted different ways of how the arts can generate change towards a more sustainable world. (Allen et al., 2014; Neal, 2015).

My research has led to both personal development, as well as the professional development for the art teacher education at the IAA.

1.7.1 My leadership challenges and tensions

Since the 1990s, educational development in Europe has emphasised strategic

educational development using policy as a way of improving quality (Gibbs, 2003). In the IAA art education department there is a focus on strong connection to the grassroots. This has allowed those who work in art education to be able to work within an academic department and a community of practice. Collectively we follow settings that support us in the process of becoming educational developers that support the development of teaching strategies through interventions. Such activities provide indicators of change which we look at annually with the IAA research community to develop our community of practice (Wenger et al., 2002). Boyer suggests that universities and colleges should develop their own criteria to measure themselves, based on their distinctive mission and values rather than using external criteria that restrict creativity rather than sustaining it. This can be done through renewing commitments to service along with research practices (1990).

My own educational experience in Iceland did not prepare me for challenging conditions or asking questions. The role of personal connections or prior knowledge in my own development was little or none. I want to do the opposite; as a teacher educator my aim is to encourage my students to become teachers who develop the capacities of individual students. In my teaching I aim at stimulating active learning and encouraging students to be critical creative thinkers with the capacity to go on learning, not only transmitting knowledge, but also transforming and extending it (Boyer, 1990). It is a challenging task for teachers to create educational settings that give space for developing knowledge, skill, mind, character or ability. I want to follow Boyer's (1990) advice:

We need scholars who not only skilfully explore the frontiers of knowledge, but also integrate ideas, connect thought to action, and inspire students. (p. 77)

Teaching strategies can be thought of in connection with three states of thinking: dependent, interdependent and independent. These states of thinking are aligned with instruction, co-construction and negotiation (Bernstone, 2009). As a scholar it is important for me to understand the structure of knowledge in the field in which I work and how it transforms from one field to another. That requires me to think about each educational setting and the methods and body of knowledge which constitute it. In the case of the students at IAA I have created situations conducive to artistic research. Once an artist enters the field of art education they have to create an intermediate space allowing different communities of practice which include groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly (Wenger et al., 2002).

1.7.2 My professionalism and reflective practice

As a scholar at IAA my role is to work with future art teachers as they take on professional duties and take part in the challenge of society's ever-changing demands with regards to schools and education (Hargreaves & Fullan, 2012;

Newman, 1998). We need to develop empathy and understanding that adds resilience to society. Through educational settings people can take part in finding solutions to problems. The power of art is inspiring as it gives people freedom to work with their ideas and envision a different future.

With my artistic activities, I aim to earn respect, and it also strengthens my professionalism. When curating exhibitions, I create narratives by placing the different pieces by diverse artists next to each other with the idea that the thought they put into their works, both static and material, communicate like narratives. Museums are ideal places where stories can be and encourage visitors to make their own meanings. Bedford (2001) noted:

Stories are the most fundamental way we learn. They have a beginning, a middle, and an end. They teach without preaching, encouraging both personal reflection and public discussion. Stories inspire wonder and awe; they allow a listener to imagine another time and place, to find the universal in the particular, and to feel empathy for others. They preserve individual and collective memory and speak to both the adult and the child (p. 33).

In the exhibitions I have put together visual cues or signs in the forms of different contemporary art works that transmit messages to the viewer. The art pieces that are educational for sustainability are grounded in the real change that people can actually effect and give a tangible sense of what we can do as humans, something that art educators have to learn to interpret. Bedford (2004) argued that exhibitions could aid people to define their values and beliefs so the narratives have the potential to “make connections between museum artefacts and images, and visitors lives and memories.” (Bedford, 2001, p. 30)

1.7.3 Preparing student teachers to become professionals that include EfS

Another source of information useful to building up collective efficacy is to explore the impact of the current official policy on EfS, both at a global and national level. The concept of sustainable development emerged in the 1970s and 80s as a response to the global recognition of the interrelated social, economic and environmental changes facing the world. In 1992 the Earth Summit of the United Nations identified education as the cross cutting issue and the key to success for Agenda 21 (United Nations, 2012). The UN General Assembly formally declared the period 2005-2014 as the UN DESD of EfS development in recognition of the fact that learning and education is at the core of a more sustainable future.

Progress on re-orienting national education strategies towards sustainable development has been more promising, with many countries incorporating principles of sustainable development into curricula and establishing national coordinating bodies for the promotion of education for sustainable

development. (United Nations, 2012, p. 26)

The Ministry of Education, Science and Culture (2013) in Iceland encourages school administrators to shape school activities so that they might serve as a forum for student participation and a study environment conducive to a sustainable society. In the broad curriculum framework of Icelandic schools there is space for putting the policy of EfS into action and at the same time to be mindful of political influences on their decision making. A professional scholar has developed efficacy that allows him/ her to use transformative pedagogy:

[Pedagogy] that relentlessly questions the kinds of labour, practices, and forms of production that are enacted in public and higher education.
(Giroux, 2001, p. 18)

Visual art can improve understanding of sustainability through four strands of sustainable development and their interaction: 1) environment and environmental protection, 2) economic growth, 3) social well-being and 4) equality (Hawkes, 2001; Ministry for the Environment, 2010).

By placing these fundamental concerns and guiding principles alongside different teaching approaches, student teachers ought to acquire the skills to interpret the curriculum and discover how they can develop knowledge for and about sustainability with other disciplines. They learn how they can encourage respect for nature and society, and nurture a sense of shared responsibility for our common future. This could be a step in the direction of reaching harmony in the relationship between researchers and educational policymakers and practitioners. But teachers have to keep in mind that they might be criticized for failing to make their practice evidence-based (Hammersley, 2006).

Most student teachers have pre-formed ideas about teaching and teacher education derived from their own schooling, society and other factors. The approach they experience through their training as teachers will also influence them and form their ideas (Einarsdóttir, 2002). The art education students at IAA have a strong need to discuss their experience and exchange ideas and values in terms of dialogues. It is important to make space for such discussions as they need time to reflect on their own experience when forming theories. Different practices operate within perspectives that provide different pictures of the world that reflect what is of central and what of marginal concern in terms of that activity (Hammersley, 2006, p. 59). My practices of art and teaching do not always have the same perspectives. Teaching quality is influenced by the individual approach of each teacher. It is also connected to a teacher's development of efficacy.

As individuals, professionals have the right to perform their work as they see fit, based on knowledge acquired through specialized training.
(Newman 1998, p. 121)

Art has a great potential in co-creation of knowledge. When learning about

sustainability through transformative activities new forms of learning and engagement are needed. That includes transformative learning and social learning, which is becoming increasingly more complex as scholars have begun to understand the importance of diversity and intersectionality (Godfrey, 2015). When learning about sustainability in transformative activities students realise that the issues at hand cannot be solved but could only be improved. Through expanding their knowledge that results in actions students can become promoters for deeper thinking that can result in changing values and behaviours which are essential for a transition towards a more sustainable world (Wals & Rodela, 2014).

It was critical to me when preparing artists to become art educators that they will have the potential to go out and teach as individuals in different schools and in community settings with knowledge and skills to be professionals.

1.7.4 The IAA as a site for EfS and student teacher professionalism

After running the A+EfS course for two years I found out that the same rule applied to me and my AR that applied to the student teachers i.e. that EfS needed to be introduced in other courses as well. Ever since I started to teach at IAA I have taught the course on pedagogy class for elementary schools, including student teaching in school. All of the student teachers in the IAA reported in interviews that they felt they were getting too little field experience and few possibilities to try out alternative approaches in education, fearing that once they would become in-service teachers they would continue with the same routine year after year and fall into pre-formed ideas of the role of the teacher.

My research journal data showed that this issue needed to be addressed and I approached the principal of the local school and asked if the school was willing to collaborate with us with a week-long workshop in the Botanical Garden in connection with the annual Children's Cultural Festival in April 2013. We got a grant from the city and since then this event has taken place four times and we are planning to continue. All the students in visual art education participate in planning the annual workshop together.

The law pertaining to schools in Iceland requires them to be democratic institutions where all the members of the community, including students, teachers and directors, can take on leadership roles and make progress in reaching the goals of the school and society.

Internationally, the education and the competence that students need to acquire in the 21st century are a prominent topic of discussion.

Participation in the economy and society of the 21st century is seen as requiring heightened adaptability and a constant updating of knowledge in order to keep up with the pace of development. Other skills highlighted include creativity, health, communication, critical thinking

and sustainability, all of which have been incorporated into the recently updated Icelandic National Curriculum Guides. (Ministry of Education and Culture, 2014, p. 7)

Student teachers must be prepared for such tasks, so school levels set goals for the outcomes they wish students to achieve along with the fundamental task of the school. Scholars, directors and students should constantly re-evaluate those values to support development. The research to be reported here focuses on the way in which EfS at the IAA art education department has developed.

Trust must be a key element in professional development among scholars when developing mutual objectives. When thinking of trust it is important to pay attention to values and scholars can indicate their values through different media by participating in conferences, through developing projects and through their writings in peer reviewed journals.

Scholars who are leaders in their field are sure of their values and consistent in their approaches and writings. People develop trust in others when they can associate with their ideas and values. When a professional introduces values but acts in a contradictory way it can harm that trust, possibly permanently (Jónasson & Ingason, 2011).

Like sustainable development the journey to professionalism is endless. Self-regulation for greater professionalism means that there can be no end to learning. Academics are no different from any other occupational group in terms of the expectation that they will accumulate new skills and knowledge throughout the entire life span (McWilliam, 2002, p. 10).

Well-trained professionals make decisions that allow individual student needs to be met. Including the importance of constantly asking oneself the following questions: Why am I here? How did I reach this place? Why do I perform as I do? Is there any reason to change my practice? (Hammond, 2014; Strike & Soltis, 2009). This has been my concentration in all my professional practice, resulting in the focus on student driven initiatives and student teacher artistic actions.

1.8 The role of artists and visual culture in promoting sharing of perspectives

Developing a personal contribution to sustainability is the main focus of this thesis. Visual arts have been used through centuries to reflect on people and their actions. For some people, the visual message of art can be more accessible and easier to grasp than the message in a written text (Vasudevan, 2008). The impression or feeling 'created' by artworks can stay with an individual for a long time. The arts make vivid the fact that neither words in their literal form nor number exhaust what we can know. The limits of our language do not define the limits of our cognition

(Eisner, 1998).

Visual culture has a relationship to the meaning and value of people's daily living habits. Visual arts have been used through the years as a reflection on people and our actions; when looking at art we can see a different perspective of the world. The visual message of art is for some more accessible and easier to grasp than the message in a written text. For example, many people find it is hard to notice the ecosystem loss. The extinction of species is not something that we are reminded of in our daily lives. In this context, critical pedagogy promotes interdisciplinary and transdisciplinary border crossing in order to help students understand the terrains of popular culture and art works (Tarvin, 1999). The massive size of dead zones of the oceans are not understandable in the context of numbers that resonate with us. The melting at the poles does not yet affect our everyday activities. We cannot see the accumulation of toxic chemicals, the rise of carbon dioxide levels, or the unsustainable extraction and depletion of resources. We can easily separate ourselves from these issues because of their abstract nature. But when using visual messages to introduce those ideas one has the possibility to connect ideas and problems with personal lives and inspire emotional responses. In the learning process it is therefore important to have time to analyse, discuss and interpret. When interpreting issues of sustainability though, art students should be offered choices to ensure that the result becomes "expressions of the makers' ideas." (Freedman, 2003, p. 41). When using a critical approach like this the learner becomes the meaning maker. This empowers the learner to become part of the production of visual culture that reflects on contemporary issues.

Art has always been a powerful tool when pointing out injustice, human rights violations or damage to the environment (Desai, 2002). Throughout history artists have often been among the first to notice and be silenced, Leonardo da Vinci's revolutionary innovative ideas, for example, were initially condemned. Artists of all periods have dealt with ecological and social issues and have often contributed to changes in public conscience, values and attitude (Brenson, 2001). Environment, racism, sexuality, fear of homosexuality, gender, homelessness and AIDS, are contemporary issues that artists use as creative inspiration (Desai, 2002). In art education the teacher can encourage students to look around in their everyday life, finding beauty, finding meaning and appropriating it into their lives through art creation. That is one way of feeling whole, and having self-worth. Kagan (2011; 2012) has pointed out that artworks that purposely deal with environmental issues and the integrity of the earth, aim to result in a transformation. Many of these practices are inspired by the works and life of Joseph Beuys and his social sculpture. According to his ideology artists have the responsibility (and many the capacity), to apply their practice for transformation.

Working with visual culture makes it possible to address issues that create connections within a curriculum and with personal experiences. Such learning goes beyond raising awareness by paying attention to underlying issues that lead

to unsustainable practices in our daily lives, and by challenging some of the assumptions that underpin day-to-day practices (Kagan, 2012). Visual culture can help in linking the meaning and value of people's daily living habits (Vasudevan, 2008).

Teachers of visual arts who wish to work with their students need to consider how arts can help students perceive, interpret and understand ideas of sustainability. In EfS, as in other studies, it is important that students see links to their own experience. The concept of experience viewed in the light of Dewey's ideas links the concept to activities and cause and effect. Experience is also clearly linked to interaction between people and their environment. Dewey (2005/1934) described experience as an experiment to change the known by approaching the unknown. Experience is also well suited to link events and to put things into context (Einarsdóttir, 2010).

Many art educators have through the years been concerned about EfS. Scholars that have been working with values and virtues in relation to sustainability are for example: Jan Van Boeckel, with his interest and concern about the world-views and environmental philosophies of deep ecology including indigenous peoples (Boeckel, n.d.); Cathy Fitzgerald and her development of transversal eco-social art practice in a forest (ecoartfilm, n.d.); Mirja Hiltunen and her interest in investigating the possibilities for interaction between rural settings in the north, as well as modern art and ways to enact a communal form of art education (Hiltunen, 2010); Maria Huhmarniemi and her focus on contemporary art as activism, the relationship between contemporary art and visual art education, as well as environmental education. She works on applied visual arts and the use of traditional handcraft in art and art education (Huhmarniemi, n.d.). Helene Illeris and her research interests that include art education in schools and galleries with a special focus on visual culture, contemporary art forms, aesthetic learning processes, social inclusion and sustainability (Agder Academia, n.d.); Hilary Inwood, with her research focus on professional development of teachers in relation to EfS, and on arts-based approaches to developing environmental literacy in school and community settings (Inwood, n.d.); Timo Jokela and his focus on place specific environmental art to promote sustainability (Jokela, n.d.); Peter London and his focus on creating settings for students to retrieve new knowledge and experience natural surroundings in an interpenetrating and harmonious setting (London, 2014); Margaret Somerville and her interest in sustainability literacy (Somerville, 2010); Anniina Suominen and her interest in arts-based environmental and sustainable education (Aalto University, n.d.). Finally, Lee Ann Woolery with a focus on divergent ways of knowing. She pioneered Art-Based Perceptual Ecology, a unique interdisciplinary approach for ecological research (Eco art expeditions, n.d.).

Many art educators use the term visual culture, instead of art, to describe their central concern. It is important for educators to define the meaning of visual culture in the context of art education, and how pedagogy might be developed for visual culture. Modern society calls for art teachers to redefine their field as visual culture with the potential of an emerging transdisciplinary field in its own right

because people are living their everyday lives through visual imagery. Visual culture is therefore the focal point for many diverse cultural concerns (Duncum, 2002).

Relevant discussions about the culture of images have focused on issues such as sexual, racial and national identity and the boundaries that define subjectivity in this context (Burgin, 1996). In his writings about visual culture Victor Burgin discussed how one could adopt an original critical strategy based on different spaces. This exploration is based on the construction of identities in the psychical space between perception and consciousness, where the image is never a transparent representation of the world but rather a principal player on the stage of history based on specific time and space (1996). Those issues are all important when thinking about how to learn about sustainability through contemporary art. The core skills in EfS involve taking a holistic understanding of the current situation. Education can help learners develop skills that influence change within their local society. In doing so the students themselves create a systemic view with which to organise new practices. EfS relies on the strengths of collaboration and cooperation (Brna, 1998) and transformed knowledge (Miller et al., 2010) that leads to action.

1.9 Developing efficacy through artistic education for sustainability

The psychologist Albert Bandura (1997) defined efficacy as a person's belief in his/her ability to succeed in specific situations or to be able to accomplish a specific task. Settings for students can be created to support students as they develop so they can develop action competence and develop efficacy. In schools Bandura described these beliefs as determinants of how people think, behave, and feel (1997). Developing efficacy beliefs as a vital personal resource has been amply documented in the meta-analyses of findings relating to different spheres of functioning, achieved under laboratory and natural conditions (Bandura, 1997).

When creating settings to promote empowerment among the student teachers I respected their background and acknowledged that art and art-creation is one form of making knowledge. When gaining knowledge through visual culture the individual could discover his own part in the natural world and in society, making it possible for him or her to make connections between different events and see them in context, as part of a whole.

Tacit knowledge is made up of best practices, experience, wisdom and recordable intellectual property that lives within individuals and teams. Since tacit knowledge exists within minds, it cannot be reduced to the digital domain as a material asset, or be manipulated directly. However, it expresses in the social realm as the response ability of individuals (productivity, innovation and initiative), and teamwork (communication, coordination and collaboration). (CDS, 2003, p. 16)

Therefore the key to acquiring tacit knowledge is experience, values and action. It

confronts our senses, tactile experiences, societal skills, and awareness, (Nonaka et al., 2000), all issues that are important in EfS. In the context of critical pedagogy I have often thought of a metaphor used in nursing education that an American friend of mine told me about many years ago when I was studying in NYU. She said that the role of the nursing teacher was the same as a midwife who draws out knowledge and assists the students in giving birth to ideas. The teacher (midwife) role is also to follow the development of the person, creating a nurturing environment for learning. Through reflective inquiries it is possible to bring forth new perspectives and alternative viewpoints. Later during my research I found out that it was Belenky, Clinchy, Goldberger and Tarule (1997) who had come up with the midwife metaphor that fits so well with teacher educators. This way of thinking promotes teachers' recognition of student's tacit knowledge.

There is an important relationship between efficacy and tacit knowledge since both are rooted in self-evaluation that influences decisions about what behaviours to undertake (Endres, Endres, Chowdhury & Alam, 2007). In the journey towards a more sustainable society mastery of the behaviour and an influence on individuals' motivation and behaviour is important and a person that has perceived greater efficacy is more likely to use her own tacit knowledge to select sustainable solutions (Bandura, 1994; 1997).

1.10 A process of learning for action competence

An important goal of EfS is to bring up responsible citizens who have the competence for action. An important part of action competence is the ability of students to take part in deciding on a topic for class actions or discussions (Jensen & Schnack, 1997). This selection of a subject is ideally related to the interests of students. They could be given a choice of factors with which they feel it is important to work. Therefore, it is desirable to elicit the diverse voices of students, to use dialogue and pay special attention to issues that deal with values, equality, social justice and democracy.

Development of a curriculum key by Jóhannesson et al. (2011) was based on covering the national curriculum in Iceland of 1999 and revisions in 2004 and 2005. That research influenced the 2011 curriculum (Ministry of Education, Science and Culture, 2011b) in which several areas of concerns were highlighted. In the national curriculum sustainability is discussed in terms of the interaction between the environment and human existence and well-being in the context of the environment. That includes nature and the environment, democracy, human rights and justice, equality and multiculturalism, well-being and health, and economic growth and future vision (Ministry of Education, Science and Culture, 2011b).

Different disciplines give opportunities for EfS, using different media so that students can formulate a personal vision about their own behaviour and priorities. In art education, teachers can work towards social justice, using works of art as

instruments for the education of society, which emphasises that the rights provided by a democratic society should be for everyone (Garber, 2004).

EfS is a complex task facing schools, teachers and learners: how can school experiences be developed in such a way that meaningful connections are made between place and time? Understanding the arts is important for the mind and can have a profound impact on many people. People are differently motivated to express themselves. For many, art is a language. Artists, no matter what medium they work with, create works that are closely connected to their social context and influenced by current events.

The concept action competence was originally developed by Danish researchers from the Research Programme for Environmental and Health Education, which is now a part of the Danish School of Education at Aarhus University (Læssøe & Öhman, 2010). Action competence has had a strong impact on the values, ideology and priorities of many scholars and learners (Jensen & Schnack, 1994; Jensen, Schnack, & Simovska, 2000; Læssøe & Öhman, 2010; Mogensen & Schnack, 2008). When aiming for an action competence approach quality criteria focus on the development of teaching and learning and the school, and its relation to the community. Teachers and the school as a whole, also learn and develop an understanding of action competence. That includes a focus on democratic values in the community in which the school is situated. To develop action competence there is a need for collaboration with the relevant stakeholders (Læssøe & Öhman, 2010).

1.11 EfS and different learning processes that empower student teachers

As student teachers at the IAA rethink both their values and morals on the journey towards a sustainable life, they go through different processes (figure 1.3) starting with artistic actions that are used as a learning tool. The artistic actions aim for transformative learning where the learner moves beyond awareness into incorporating real change and transformation through empowerment and capacity-building. Transformative learning has the potential to lead to, or allow for more sustainable lifestyles and values (UNESCO, 2012).

The transformation-oriented learning and capacity-building mode of EfS relies on participation, self-determination, free thinking and creating knowledge together.

When the space for participation and democratic involvement is wide, more interactive and transformative modes of ESD are likely to emerge that tend to emphasize capacity-building and empowerment over behaviour change (UNESCO, 2012, p. 23).

When discussing empowerment in this thesis I use the term critical pedagogy to describe a process of empowerment resulting from teaching characterized by caring, commitment, creativity, interaction, and a recognition of the humanity

of both teacher and students. Paulo Freire (1995) believed that social conditions distorted the individual's self-perception and when people understood their own conditions they had the potential to become free. Many scholars have built on Freire's ideas and connected them to contemporary approaches in education (Lange, 2012; Martin, 2010; Tarvin, 1999). In that context education and learning is key to empowerment (Bayes, 2015, p. 6).

This study is under the influence of the social model of empowerment derived from Bayes (2015), that includes a safe and supportive environment; meaningful participation; shared power; individual and community level orientation; socio-political change goals and critical reflection.

The empowering force of art resonates with Victor Turner's views from *Ritual to Theatre* where he explains the transformative nature of art:

Art causes life meaning to emerge, it allows the interpretation of the past and outlines the future scenario. Art is like the insect's antennae, which allow us to move forward to the unseen. Everybody has a right to expressing their own humanity with their own words. Art is a human right. (Turner in Carnacea Cruz, 2016, p. 93)

At the end of the review I reflect again on these issues in relation to my artistic actions and publications.

The manner through which and why we learn is very important (Bernstein, 2000). Pedagogical processes and practical applicability are crucial in EfS. When developing teacher efficacy and action competence through relational learning, participatory education, transformative learning, experiential learning or action learning the learner builds on his prior lived experience, thus making the educational process relevant to learners' lives. To do so the focus is placed on reflecting on solutions to real problems that people are experiencing (UNESCO, 2012).

After developing teacher efficacy one should be able to facilitate learning that begins to develop a sense of collective responsibility for the well-being of the group, the wider community, and the environment. Through interactive or collaborative approaches teachers can develop both efficacy and action competence. They should have the potential of creating learning settings that clearly benefits their students and at the same time as it indicates actions for a sustainable future. The phenomena that promote action competence for sustainability include emotions that create a desire to change conditions; values and contrasting perspectives; taking actions; feeling confident and skilled to contribute; trust and faith; and belongingness (Almars, 2013).

If our way of understanding social matters changes, our way of wanting to change the world changes too, together within the skills, abilities and competences of its professionals. (Carnacea Cruz, 2016, p. 86)

In the critical place-based approach (Grunewald, 2003; Macdonald & Pálsdóttir, 2013), the learner participates in real activities, including visualization and

experience. Critical place-based approach is an approach that combines critical pedagogy and place-based education. Learners communicate freely, and the teacher becomes a partner in the learning process. It is transformative learning that can be described as a process in which individuals alter their frames of reference for understanding the world. In transformative learning all learning processes imply some kind of change, but not all change is transformative for the learner. The collaborative and transformative learning models fit well into EfS (Moore, 2005), because transformative learning opens up new lenses of awareness and strengthens our competence for understanding. This is an important capacity when navigating complex EfS challenges (Mezirow, 2009). There are examples to be found in article seven in the appendix about the project in the Botanical Garden.

Transformation of knowledge is not enough to effect change towards a more sustainable society. Transgressive learning takes the discussion well beyond competence and into a major question of values and change (Lotz-Sisitka, Wals, Kronlid, & McGarry, 2015).

Being disruptive or transgressive is an essential part of sustainability-oriented learning, in part also because it can create substantive rights for persons who as formal citizens have procedural rights but which they cannot exercise. (Peters & Wals, 2016, p. 180).

When organising transgressive settings in teacher education scholars need to be aware of formal education systems and evaluate how they can design learning settings that encourage transformative learning experiences. In university settings there can be some challenges to fit such experiences into the curriculum goals of the institution. Sterling has worked with the Open University systems practice network aiming at transformative learning. It sums up the challenges as follows:

To understand and deliver a pedagogy which enables and provokes students to move across levels of epistemic competence is in itself challenging. To do so requires an awareness on the part of the curriculum designer and personal tutor so that they can facilitate these changes ... it is not always clear that academics and tutors have these competencies themselves. (Sterling, 2010, p. 27)

However there are some examples from higher education that put a strong focus on community engaged research and activities where students activism is fostered. That is a kind of sustainability-oriented higher education where transgressive learning takes place through attention and strong community connection (Peters & Wals, 2016).

The ActSHEN research group tackled a variety of issues chosen to provide students with opportunities to take initiative. Many of the activities and projects developed by ActSHEN worked with the idea of transgressive learning and student initiatives (ActSHEN 2016).

When organising EfS at the art education department at IAA teaching practice

must focus on learning within visual culture with recognition of tacit knowledge and embodied experience. That is why visual culture frames the processes (see figure 1.3). From me, as a teacher, that requires acceptance of diverse ideological approaches and a focus on student driven initiatives where the student teachers develop their working theories. In addition, emphasis is placed on providing students with the opportunity to test their ideas through artistic actions where they connect between academic theory and practice.

In summary the first step at the IAA was to facilitate learning settings so the student teachers could develop efficacy. That allowed them to transform their knowledge and develop action competence in a practical manner. Once the student teachers developed both efficacy and action competence they had the potential to develop artistic actions through transgressive learning (figure 1.3). Ultimately the student teachers reach action efficacy.

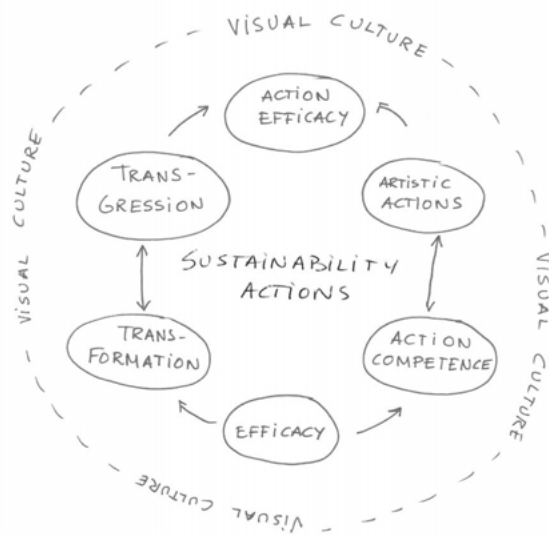


Figure 1.3 Interrelations between different learning within EfS framed by visual culture

It is through the student driven EfS initiatives that the IAA aims to empower student teachers to have an impact on society. Many of the student teachers' final theses include components of EfS action efficacy. The student teachers have been allowed to experiment and create settings where they have tried out different tasks for education.

Emotion, motivation and identity are integrally related important elements of most teaching not least of EfS. Subject and object stand in dialectical relation, and in connection to teacher education the student teacher needs to go beyond

knowledge ability to include emotions (Roth, 2007; Macdonald, 2007).

Motivation arises from the difference between the emotional valence of any present moment and the higher emotional valence at a later moment, to be attained as a consequence of practical action. The workplace-related motivation is high when the subject realizes both individual and collective interests in the same action— ...Identity, too, is an integral part of human activity and an effect of emotion. Who I am with respect to others and myself is fundamentally related to my participation in collective activity and to individual and collective emotional valences arising from (orientations to) face-to-face interaction with others. (Roth, 2007, p. 60)

Teachers can only get motivated when including EfS in their professional practice if their teaching situation meets their individual and collective interests as defined by Roth (2007). A place-based approach is one way to meet both individual and collective motivation. Even though we should aim for collective motivation implementation indicates that it's the individual teachers' commitment that is the most important. The student teachers' motivation and skills are central to engaging with EfS (Kennelly, Taylor, & Maxwell, 2008) and therefore the kind of experiences they have during the teacher training must be crucial (Flores & Day, 2006).

1.12 Place-based approach and memories

According to UNESCO (n.d.) students should understand how the earth's ecosystems set boundaries for mankind; they should understand their own ecological footprint and how the ecological footprint of societies and nations is linked to development; they should be able, in a critical way, to evaluate the value of information about environment and nature; they should be active and responsible citizens with regard to the environment and nature; they should be able to formulate a critical opinion on the environment, society, culture and economic system and they should have an understanding of the common responsibility of the human race on earth and her inhabitants (UNESCO, n.d.).

Many artworks from the last few decades deal with issues of social justice such as self-image, stereotypes, politics, globalisation and feminism and an increased interest in the environment and sustainability in the last few years can be detected (appendix 7 & 8). Sustainability has also been noticeable for a while in architecture and popular culture (Ward, 2008). Artists at all periods of history have dealt with ecological and social issues and have often contributed to changes in the conscience of the public (Brenson, 2001).

When working with a critical philosophical approach, teachers have many possibilities in EfS. It is important both to formulate things for oneself and to get immediate reaction to them through discussions. This evokes an emotional response, one often becomes very angry during discussions or sad or excessively

happy. There is something in verbal communication that has a direct and emotional effect (Vasudevan, 2008; Sigurðardóttir, 2001). Discussing artworks with students gives them an opportunity to learn a lot about themselves and to deal with the emotions they experience. It is the discourse about the artwork which creates a strong sense of experience that the viewer does not necessarily understand at first.

The value of culture and the opportunities art and culture create to understand the effect of actions on the environment are great. The educational value of art should be used to promote informed actions on the part of the inhabitants of the earth (Hicks & King, 2007). In this context diverse artwork, which is suitable for education in visual arts, will be used with the aim to achieve a better understanding of sustainability.

It has been pointed out that some scholars have criticised place-based education for neglecting the ways in which socio-cultural differences, inequality, and politics contribute to environmental degradation (Gruenewald, 2003). But by connecting it to EfS, this concern could be solved since a radical view of EfS involves taking into account society as a whole and understanding different disciplines that facilitate the adoption of a holistic approach to the issue being addressed (Huckle, 2006).

1.12.1 Using art and place-based approach to understand myself as a researcher

Through my interest in sustainability I have created a range of artistic activities. My first visual work in my doctoral study is *MemoryBits* (figure 1.5) rooted in the idea of memories, place and identity.

Collective memory in a place is no more than an element in the perpetuation of a particular social order that seeks to inscribe some memories attached as if by nature. A place is not just a thing in the world, but a way to understanding the world. To connect to one's own place, experience and values through critical reflection one could learn to live more sustainably (*Cultural encounters*, 2012).

The starting point was working from sketches created from memories of the farm where I was raised. Then I went on a trip to visit the farm and the land. After looking through old photographs I created a box that resembles a box of chocolate. Creating this work reflects on my constant question: where do I belong? I used the camera to tell my story in a different way. I created a dialogue with myself about my past that I turned into a box of sixteen memory bits and invited the viewer to look into the box and touch it. By doing so, the viewer is invited in to a relationship with the work in a different way from displaying it in a more conventional way. This way the viewer becomes an active participant in the work.

Before creating this work, I had worked with my students on exploring how memories of a place can be represented. I asked them to sketch different memories in different ways for a total of nine small drawings. This included sketching an actual memory as well as an abstract representation of the sensory memory using

shape, colour, texture. The students wrote down words that somehow described the memory of a place. Later they developed those sketches and created a work reflecting on them. The principle of this exercise is in line with Irit Rogoff (2001) who suggests that we use texts and visuals to understand our culture and our place within it: “[visuals and texts] constitute us rather than being subjected to historical readings by us” (p. 9). This work is my contribution to a memory workshop I gave in Iceland and Finland with two Finnish colleagues and discuss in article 3 (appendix 3).



Figure 1.4 *MemoryBits* mixed media installation, Rovaniemi 2012

1.13 The significance of this doctoral thesis to myself and to others

In this research, I intended to illuminate the potential of art in EfS, reflecting on and with artistic actions. With the intention of gaining a better understanding of the term artistic EfS I analysed my practices at the IAA.

As an educator and an artist aiming for sustainable awareness I have through this research developed overlapping lenses that I can use to plan and evaluate my artistic actions: learning, pedagogy, community dynamics, and environment. These lenses all focus on the same experience, but each one brings a different dimension into view. All the lenses include decision making in complex situations. The decisions include competence, judgement, insight, inspirations and the capacity for improvisation as I have striven for teaching and curating where I also use my tacit knowledge.

This thesis is also relevant to people working in other subject areas. I have learned a lot from scholars in natural sciences, and I believe natural sciences can learn a lot from the arts.

Pedagogy, in a reimagined science curriculum, will need to be more varied, more supportive of students' agency through more open tasks, increased discussion and negotiation of ideas, and involve more varied settings. Reform of science education will need to include a substantial re-think of pedagogy, linked to content reform and teacher development (Tytler, 2007, p. 66).

At the IAA I have a role as a teacher educator, a researcher and programme director. Throughout this research process, I worked with my colleagues, and with them I exercised my judgements and together we took collective responsibility for our work. Being a professional required that I continued to learn in all the fields of study. This allowed for openness to feedback and willingness for transparency. Through the AR and ABR I learnt not to be afraid of mistakes, because I reflected on them and learnt from them. I have pride in my work and it has helped me to feel professional respect from my peers and official institutions like the Reykjavík City Department of Education, Ministry of Education and The National Centre for Educational Materials.

My role as a curator in all three of the exhibitions was to design conditions for creating, experimenting and interpreting art, just as I do in the A+EfS course. I wanted to showcase something truly worthwhile, capable of moving the viewers to wanting to understand themselves, to find their place in the world, to see and accept life. The works in the exhibitions touched upon cultural, ecological, environmental and philosophical themes connected to sustainability.

From the beginning, when refining the goals of the exhibitions and designing the exhibitions, it was a conscious decision to work on a diverse and broad aspect of culture. Focusing on educational value, the exhibitions provided an atmosphere that would raise questions relating to the wicked problems of sustainability. As discussed in chapter four, I define culture as one of the fundamental aspects of sustainability along with environmental, social and economic aspects. I strived to develop my own efficacy and action competence resulting in action efficacy in the spirit of becoming a better individual that can contribute to collective actions for sustainability.

My multiple roles at the IAA include sustainable emphasis on different levels. That is in the spirit of the socially transformative potential of educational focuses of the IPCC on climate change. The potential of diverse approaches to EfS has been recognised and advocated in some science education publications for many years (Gray & Colucci-Gray, 2014). It could be the case that art education and research within the realm of art education has something to offer to sciences when it comes to transformative education.

This research has played a significant role in developing my own professionalism. This research could also be useful to other scholars interested in EfS. It has also relevance for curators that aim to curate with an educational

angle relating to sustainability. The research does not, however, aim to represent holistic solutions that can solve all the problems and challenges confronting teacher educators today.

1.14 Publications and exhibitions related to the thesis

The research and its outcomes are characterised by many concepts and issues of art and pedagogy. As the project developed new concepts materialised and some issues became more important than others. These are discussed in chapters 3-6 and in the seven articles, three exhibitions and exhibition catalogues, which are listed here.

- (2013). Art and place-based education for the understanding of sustainability. *Education in the North*, 20 (Special Issue), pp. 90-105. [Appendix 1]
- (2013). Making memories visible: A photographic exploration of cultural sustainability. In T. Jokela, G. Coutts, E. Harkanen & M. Huhmarniemi (Eds.). *COOL: Applied visual arts in the north* (pp.144-155). Rovaniemi: Publications of the Faculty of Art and Design of the University of Lapland.
- With Macdonald, A. (2015) Human nature and participatory virtues in art education for sustainability in T. Jokela & G. Coutts (Eds.), *Relate North: Art, heritage and identity* (pp. 82-104). Rovaniemi: University of Lapland Press.
- (2015). Teaching and learning for sustainability: An Icelandic practice-based research. *International Journal of Education through Art*, 11 (3). 391-406.
- With Antoniou, C. (2017). Artistic actions for sustainability in contemporary art exhibition. In I. Birkiland, R. Burton, & C. P. Parra, (Eds.), *Cultural Sustainability and the Nature-Culture Interface: Livelihoods, policies, and methodologies* London: Routledge [Studies in Culture and Sustainable Development]. (in press)
- With Macdonald, A & Jokela, T. (2017). Artistic Action for Sustainability: Developing Practice-led and Practice-Based Expertise through a Joint Degree from Iceland and Finland. In A. Sinner & R. Irwin (Eds.), in *Provoking International Perspectives: The Visual Arts Dissertation in Education*, pp 198-212
- (2017). Art teachers' education for environmental awareness: What is hidden in nature that we have never seen or heard? *Visions for Sustainability*
- *Challenge* (2015). Exhibition catalogue, Arnes Art Museum. [Curator and exhibitor].

- *Boundaries and Bridges* (2015). Exhibition catalogue, Harpa, Reykjavik, Iceland during the Arctic Circle conference. [Curator and exhibitor].
- *LOOKING, back - around - forward* (2016). Exhibition catalogue, Valo gallery at the Arktikum. Museum and Arctic Science Centre Rovaniemi. [Solo art exhibition].

In my approach the language of visual culture is central to the meaning making process and from the broader level of the society. Then I moved into the micro level of my own interpretations and artistic actions. They are to be found in both the exhibitions and in my practice at the IAA with the student teachers.

In the exhibitions, I have created different situations depending on the target group.

Exhibition 1:

***Challenge* (appendix 8). Arnes Art Museum, Hveragerði.**

January - May 2015.

The aim of the exhibition was to open up understanding of issues related to sustainability. Learning for sustainability involves gaining a holistic view of a situation while working towards an understanding of it. The exhibition gave examples of how art has potential in (1) working with different concepts of sustainability (2) developing and maintaining technical knowledge (3) working with sustainable material. I included 26 contemporary Icelandic artists in this exhibition, and exhibited two works myself: *Skuli's crosses* (discussed in chapter 3) and *Our Nature – Our Wishes for the Future*.

In July 2016 I set up the same exhibition in the United Nations in New York and in October 2016 - February 2017 it was displayed in the Scandinavian House New York.

Exhibition 2:

***Boundaries and Bridges: Creating new roles for old traditions* (appendix 9).**

Harpa, Reykjavik, Iceland during the Arctic Circle conference

16 - 18 October 2015.

The exhibition was designed to increase participation in Arctic dialogue about sustainability and strengthen the international focus on the future. The mission of this exhibition was to bring art and conference delegates into contact. In the exhibition I put the participants of the Arctic Circle conference into the situation of building connections, encouraging them to approach sustainability in a new way, and seeing the metaphors the artists used. In this exhibition I exhibited my work *Value Archive*, that I discuss in chapter 4.

I organized a roundtable session open to people from different disciplines to engage in a dialogue with the artists.

Exhibition 3:

***LOOKING back - around - forward* (appendix 10). Valo gallery at the Arktikum. Museum and Arctic Science Centre, Rovaniemi.**

16 March - 17 April 2016.

In this exhibition I showed only my works. I often work with installations in contemporary contexts and with the voices of participants from a selected place. The focus of this exhibition was on participation and community involvement focusing on past, present and the future.

The exhibition highlights the significant role of the arts and culture in addressing issues related to sustainability. The focus of the exhibition was participation, both in terms of participative art and participatory art. The latter describes artworks in which the artist uses participation as a component of art making. In participative art projects, however, participation is the project and the artist creates the framework allowing for participation with no preconceived ideas of the outcome. The focus is not on the fact that people participate, but on the fact that participation is the main principle governing human interactions.

In the works that I created, I made use of aesthetic, embodied, experimental and emotional ways of creating knowledge. The exhibition presented findings from my art-based action research that emphasised a participatory and a collaborative approach.

All living things depend on each other and all life can be impacted by even small changes in the environment. Humans can have an effect on nature in many different ways. It is important for us to create systems where we produce as little waste as possible. The journey of sustainable development requires the notion that we do not and cannot take this path alone. This exhibition gave the visitor the possibility of finding and connecting with corresponding spirits who share a common understanding of the need for personal responsibility and the notion that art can be, and is, a potent agent of change.

In this exhibition the value of recognising the important and changing role of culture in contemporary society is fostered. Exhibited works were:

Colours of Rovaniemi;

Everything Connects;

MemoryBits;

Dialogue between my foremothers;

Teach me something;

Integrated view of the world: Collaborative perspectives;

Lesson from the Geese: Dreaming of the collaborative protection of our waters; and Inhale, Exhale.

Table 1.1.

The connection between articles, artworks and exhibitions

Article	Name of artwork and exhibition
Art and place-based education for the understanding of sustainability.	Exhibition <i>Challenge</i>
Participatory virtues in art education for sustainability.	<i>Our Nature - Our Wishes for the Future</i> The whole exhibition <i>LOOKING back - around - forward</i>
Artistic actions for sustainability in contemporary art exhibition.	All exhibition and all works
Teaching and learning for sustainability: An Icelandic practice-based research.	<i>Value Archive</i> Participatory book-work <i>Colours of Rovaniemi</i> <i>Everything Connects</i> <i>Teach me something</i>
Making memories visible: A photographic exploration of cultural sustainability.	<i>MemoryBits</i> The exhibition <i>Building Bridges</i>
Participatory virtues in art education for sustainability.	<i>Value Archive</i> <i>Our Nature - Our Wishes for the Future</i> The whole exhibition <i>LOOKING back - around - forward</i>
The benefits of a joint degree: Artistic actions for sustainability.	All the exhibitions and all artworks
Art teachers' education for environmental awareness: What is hidden in nature that we have never seen or heard?	<i>Value Archive</i> <i>MemoryBits</i>
All the articles	<i>LOOKING back - around - forward</i>

1.15 Review of Artistic Actions for Sustainability

My overall concern in my doctoral research and my professional work has been to find out what potential art and art education have for developing an understanding of sustainability and education for sustainability. In this review of the research I started with a statement about broad concepts of sustainability and its contested nature. I introduced the pedagogy and the artistic literature that frames this task of identifying the potential of art for EfS. I then narrowed the discussions and explained concepts that are crucial to a critical place-based approach where art and pedagogy work hand-in-hand sometimes merging into one. In the articles (appendix 1-7) and in the exhibition catalogues (appendix 8-10) there are more detailed discussions about the literature of EfS, the areas of learning, and teacher education. A statement from Peters and Wals (2016) frames well what I have done in my practice and my research:

[E]ngaging young people meaningfully in the key challenges of our time by creating spaces for integrative thinking, the consideration of values and ethics, the possibility to critique, act and transform, to find our common humanity and to explore ways – new, old, indigenous – to connect with those near and far in both time (past–present–future) and space (local–regional–global), with the human and the non-human and more-than-human. This will require a consideration of multiple ontologies and epistemologies, the transcending of disciplines: connecting the arts, humanities and the sciences, but also a deepening of democratic processes and what we might call the search for meaning as opposed to materiality. (p. 188)

I have challenged student teachers at IAA and encouraged them to develop projects with a place-based approach, either as part of my classes or as independent artistic actions.

Some scholars have criticised place-based education for neglecting the ways in which socio-cultural differences, inequality, and politics contribute to environmental degradation (Gruenewald, 2003). But when aiming at EfS, this concern was solved with a focus on participatory pedagogy and transformative learning because EfS involves taking into account society as a whole and understanding different disciplines that facilitate the adoption of a holistic approach to the issue being addressed (Huckle, 2006). The place-based learning approaches emphasise the joint development of how students think, how they frame the world and what they value (Gruenewald & Smith, 2008; Lockyer & Veteto, 2013).

Teachers should keep in mind that some students might not recognise themselves in a place or not connect to the selected place. It is the role of the teacher to create settings that enables connection, as he should work with students' lived experience and interests. It is possible to develop students' awareness skills,

that helps the student to learn from the place. Questions like - what is the place made of? Do you remember if you have visited a place like this before? How do you think it would be for a bird to live in a place like this, or a mouse? This way the students can discover what the place is made of and what it can offer. Therefore, it is more fruitful to learn about a natural phenomenon when you are confronted with it. Place based approach is not a set tool; it is more like a vehicle that needs to be adjusted to each student group.

Sustainability is culturally contested because of all the values it embodies and therefore it needs to operate in different spaces, including reconnecting with nature, meaning making, and the social cultural renewal including new ways of understanding human relationships with non-humans and nature in general. In that context I explained my own art work called *MemoryBits* that reflected my understanding of sustainability and memories.

In that work I reflect on the enjoyment and appreciation of a place. Being outdoors and experiencing my childhood home in a new way, encouraged experimental learning. Reflecting on my childhood memories, attitudes and values of my parents, living in the countryside helped me to develop a feeling of solitude and a connection to a remote place where I was brought up. Doing a similar project with pupils would allow for education where they could analyse and experience environmental changes, which would give the potential to instil in respondents a care for the environment and nature.

In the chapter I also described the approaches needed to achieve action efficacy in relation to developing professionalism. I explained the literature which is shaped by the past, lived out in the present and has implications for the future.

When working with my data and when I had developed a holistic view of my AR and ABR findings many questions emerged. The questions developed through the process as I will explain in the next chapter. These are independent questions that were not discussed directly in any of the published papers or book chapters. In this review, I identified three interlinked questions which gave an opportunity to use important data and findings from the research. They are therefore an addition to the published articles required for this doctoral thesis. The answers to these three questions shed a better light on the answers to the meta question on the potential of art in education for sustainability.

- What kind of artistic activities and pedagogy have the potential of opening up diverse understanding and experiences of sustainability among student teachers and museum guests?
- How and why have I used artistic actions in connection to values in my art, exhibitions and art education?
- How has participatory art and participatory pedagogy influenced my artistic actions?

1.16 Structure of the review

In this chapter I gave a brief description of the thesis, the background of the research project, problems, content, pedagogy and concepts that frame this research. At the end of the chapter I explained the focus of the three exhibitions and how they took on an independent life and are still being exhibited internationally. I set up a table showing the relationships between the articles and the related artworks and exhibitions (table 1.1).

In the next chapter, about methodology and methods, I will begin by explaining the three questions that arose from my analyses and experiences. Then I discuss the methodology and methods I used in this research, both action research and art-based research, which are systematic forms of inquiry that are collective, collaborative, self-reflective and critical (Brydon-Miller & Greenwood, 2006; McNiff, 2002; Mitchell, 2006; Reason & Bradbury, 2008). Preparing and exhibiting artistic actions required me to be adaptive. Later I was able to draw on my journals, transcripts, exhibitions and articles as I dealt with the meta question of the potential of art in education for sustainability. Both the methodology and methods fit well with the approach I believe in as a scholar since it fosters democracy, equality and student initiative.

In chapters 3-5 I answer three research questions I had identified from the process with reflections on both the practice at IAA and the curated exhibitions and artworks I have created. Together the answers indicate how a teacher educator, artist, and curator can in different ways challenge the EfS processes with different approaches and how each professional role supports the other. The knowledge I have gained through the AR has been very useful in the art-based research approach and vice versa.

The first question reflects on diverse understanding and experiences, the second one on different values and virtues, and the third on participation. I reflect on all of the three questions through the lenses of an educator, curator, and an artist. The questions focus on advancing knowledge about EfS within my professional environment. The questions (chapter 3-5) review my investigation and how it has helped me improve teaching and learning within the IAA programme, and how I have redefined my own role within that context, attending to values, processes and methods (Brockbank & McGill, 2007). The questions also reflect on the ABR and how I gained new knowledge by means of the artistic practices, the creative outcomes and through art installations and three exhibitions.

In the answers to the research questions I reflect on my practice at IAA and in my artistic work. I focus on how issues of sustainability can be represented in diverse ways of knowing using unconventional methods for achieving knowledge. I reflect on how art creation and artworks can raise awareness and hopefully move the viewer beyond what he / she knows. I facilitate that by challenging knowledge of sustainability and how I represent what I know in my practice at IAA and in

the exhibitions (Ball, 2002), approaching each exhibition with a different focus. In answering the research questions, I refer to my published articles and exhibition catalogues that can be found in the appendix of this thesis.

To complete the review I draw together my results based on the answers to the research questions and with appraisal of each article and art exhibition. I present a heuristic device which I have developed. This device helps me to reflect on my work but it could also help others to reflect on their own situation when including EfS in their practice.

I conclude the review with a summary and list of references. In the appendices are all the articles, book chapters, and exhibition catalogues.

2 Methodology and methods

My research was a developmental process of searching for the potential of art in education for sustainability (EfS). The research started as action research (AR) which has an orientation to knowledge creation and required that I worked with practitioners. My purpose was not only to understand social arrangements, but also to effect desired change as a path to generating knowledge and empowering stakeholders. The process for my research took six years. I moved from a standard action-based research model using observation and interviews, to ways of describing a much more complex phenomenon in which I, as the researcher, engaged in a recursive process of action and reflection, in space and time.

In this context, I identified and investigated beliefs and agreements shared between art educators and artists on problems related to sustainability. This I shared with the group of student teachers, all artists at IAA, who also contributed their own ideas. We worked from different angles, and proposed diverse ideas for how sustainability could be understood and addressed through art. This was done in the beginning very broadly and then it was narrowed down to a more micro level approach. When reflecting on and preparing the artistic actions, both in the exhibitions and at the IAA, I formulated three research questions to guide the study.

2.1 The research questions

My first question was of a general nature allowing me to gain a glimpse of the pedagogy needed for the task of using art in working with sustainability. I looked at the use of interactive, transformative methods, which encouraged interest

in EfS methods which promoted, motivated, strengthened and acknowledged diverse knowledge. I looked for examples of team spirit, intersectionality and the immediacy of the experience and opportunity for interpretation and discussion.

RQ#1 What kind of artistic activities and pedagogy have the potential of opening up diverse understanding and experiences of sustainability among student teachers and museum guests?

The second research question became clear from my journal writings and centred on values. From the beginning it was clear that values were an important aspect of the interpretations and discussions at IAA. The importance of paying attention to values when organising teaching was frequently discussed in the classes. We agreed on the importance of encouraging the pupils to have a say in which values are important to discuss within sustainability. This is in line with my own interest in values and the challenge of working with them both artistically and in scholarly practice.

RQ#2 How and why have I used artistic actions in connection to values in my art, exhibitions and art education?

The third question emerged from a strong theme in my journal when it became evident how and why participation and a collective approach is effective when discovering different perspectives on sustainability. The huge range of issues people can take part in collectively that go beyond recycling, which many schools seem to be focusing on. Issues related to recognising the importance of empathy, intrinsic values and the relationship between meaning making and social cultural contexts. These issues people can use to reconnect with nature. The collaborative work I had done enabled me to formulate the last research question:

RQ#3 How has participatory art and participatory pedagogy influenced my artistic actions?

These research questions are drawn from themes that emerged from the data and reflections both artistic and written (appendix 1-10) when searching for the potential of art in education for sustainability.

2.2 Overview of research approaches

In pursuing this research I inhabited the double identity of an art educator and an artist. This particular vantage point enabled me to combine methods from both educational inquiry and art-based inquiry. I intertwined art-based research (ABR) with AR in order to: a) explore my own activities at the Iceland Academy of the

Arts (IAA) and b) explain how such work contributed to my professional practice as an art teacher educator, artist and curator in the field of EfS. Throughout the process, I have been pursuing an ongoing search for the potential of art and art-based activities in EfS. The process was complex, and demanded constant reflection and search for meaning. The best way to describe what I had been doing and experiencing was by the use of metaphor.

The advantage of using action research includes the potential of addressing both the quality of the education and my professional growth as a teacher educator. By reflecting on what I did in the classroom, it made it easier to see what type of problems arose, and usually I found some indication of how to go about solving the problems.

The action research approach helped me to learn to teach well which requires, as Dewey (1997) pointed out, being conscientious students of our own practice. Such practice requires thoughtfulness and dedication toward the subject art education. In the classroom, we teach, ourselves, our students, and an area of human experience and expression, in my case, art and concepts of sustainability which I believe have significant meaning for the students and are worth their attention, time, and experience (May, 1993).

As a form of change-oriented inquiry, classroom action research contends with the same critiques as its sisters, while at the same time, having detractors all its own. From reductionists: It's just what teachers do, the common sense work of the classroom. It's not basic research; it's applied, not theory driven. At worst, it's political. Dismissed: It's colloquial? – the inopportune stepchild of the real thing. (Stout, 2006, p. 195).

At times during this research, I questioned if I had chosen the right combination of research methods. The benefits of the combined approach however, outweighed some limitations that appear when using AR and ABR separately.

In order to answer my meta question I needed to hear people talk about the problems of bringing EfS into their art education practice. Because the concepts and the vocabulary around sustainability are still developing it would have been invalid to send a questionnaire on a topic so exploratory in nature. If had used questionnaires or highly structured interviews that would have run the risk of missing the growing diversity and new knowledge in the field of art education for sustainability. But by watching interactions and activities with an on-site approach, I could capture the emotional knowledge being generated in the discussions of morals and values in education. The methods that I chose were always near to practice, continually raising and answering questions. However, one shortcoming of AR and ABR is the context of the findings, which when arising in a highly specialized environment, makes generalization more difficult. Although the general principles of EfS are the same, every practice varies depending on the composition of the group, specialisation and interests of the participants. When

emphasizing critical pedagogy through a place-based approach the student must be placed at the centre. In addition, it is essential that the students also understand the effect of their own actions and the corresponding interaction between these and the place.

I added the artistic approach to allow more questions to surface and to gain deeper understanding of the phenomenon sustainability through art creation and interpretation. I came to the conclusion that this was a fruitful approach for my study in that the AR and ABR complemented each other and helped me to frame the research.

2.3 Using amoeba as a metaphor to understand the process and the emergent methodology

To understand the dynamics of the research I chose the metaphor of amoeba, which has always fascinated me (figures 2.1 - 2.6). The research process is explained as the development of interconnected amoebas. I explain how these two approaches, the action research and artistic inquiry, developed and became interrelated in an integrated whole.

Amoebas are eukaryotes whose bodies most often consist of a single cell. The cells of an amoeba possess certain characteristic features just like the different parts of this research. Each amoeba has an individual life, constantly moving in different directions. This metaphor captures the dynamic and searching processes of AR and ABR. Through their interconnectedness they are able to work together without hindering the development of other parts.

2.3.1 Action research to understand my own practice

The research started out as action research (AR). This is research that professionals carry out with the intention of understanding their own work and methods better, and to develop them further (Guðjónsson, 2008). I used this interventional approach in order to gain information that could develop my praxis (Baskerville & Wood-Harper, 1996). Several cycles of AR characterised this work (figure 2.6). The AR study covers the full research period of six years including one pilot year. The main data are drawn from my intentions and reflections on two courses; a 6 ECTS elective course at the IAA called Art and Education for sustainability (A+EfS) and a collaborative project at the Reykjavík Botanical garden called workshop in the garden (WIG), which is part of a 10 ECTS course on Art pedagogy for elementary schools. As part of the AR process, I have traced my progress through different courses, workshops, and networks in which I was involved (see appendix 14 for examples from data).

All the different AR forms have in common the adoption of a methodical, iterative approach, embracing at each stage problem identification, action planning,

implementation, evaluation, and reflection (Carr & Kemmis, 1986). I needed to find a form of research and practice to help me with my search for meaningful engagement of my student teachers with the material, the topics and methods related to EfS. I decided to use AR which gave me the opportunity to combine creative activities with academic debate and intellectual rigour. At the same time, I was also creating my own artworks based on issues related to sustainability, with the aim of better understanding the concept and its spaces.

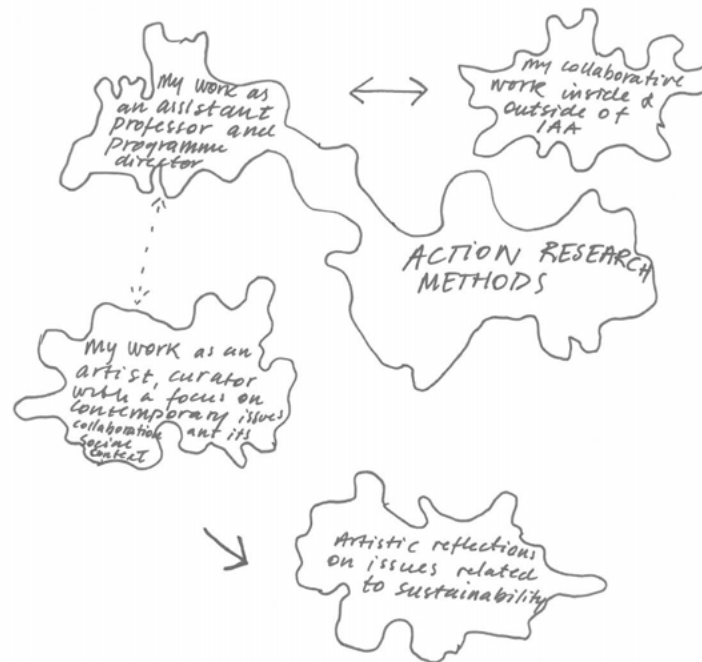


Figure 2.1 Step 1 working side by side with action research and art-based practices

In the early stages, I considered AR to be a practical way of looking at my own professional work and evaluating whether the manner in which I was preparing student teachers led them to include EfS in their theory of practice. I was yet to discover that, although the work I could do with AR was necessary for understanding the potential of art education for working with sustainability, it was not sufficient to address the range and diversity of issues I would be encountering in my work.

AR has been used in many educational research and development studies by practising classroom teachers because they are thought of as the most effective people to identify problems in the classroom and to find solutions (Ferrance, 2000; Kemmis, 2010; Mills, 2003; Riding et al., 1995; Somekh & Zeihner, 2009; Stringer, 1996). This was where I was at the beginning of my study. My research was then formed by reflections on my practice and the developmental

process of following through on my search for the potential of art in education for sustainability. When developing different artistic actions at IAA, I monitored them through record-keeping, interviews and photographs, and evaluated how things were going, keeping my aims in mind. Some would call this self-evaluation:

Seen in this way, action research is a form of self-evaluation. It is used widely in professional contexts such as appraisal, mentoring and self-assessment. (McNiff, 2010, p. 8-9)

My reflections on different aspects of these processes have made their way into presentations in conferences, in published articles and in book chapters (see appendix 1-5) all aimed at achieving a better understanding of my work at IAA.

2.3.2 Using arts-based research

Two to three years went by with AR as I started to see emerging patterns; specifically, I began to realise how much the student teachers used their own artistic expressions to understand issues related to sustainability, and how they also explained their findings through artistic practices. In my collaboration with other artists and the student teachers, I consciously started to include ABR in my practice (figure 2.2).



Figure 2.2 Step 2 developing my art practice into art-based research

In doing so, I started to incorporate another set of actions within the action cycle, drawing together my own artistic actions and the student teachers' art-based approaches. This addition led to a dimension that was not there before, that is the realisation of how I could reflect on my findings visually and through exhibitions (see appendix 4). This shift towards the inclusion of artistic actions is shown in figure 2.3.

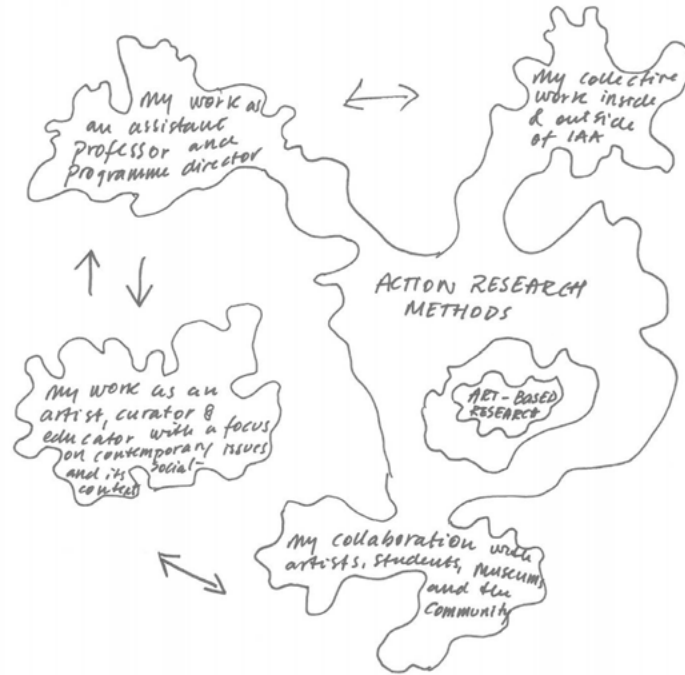


Figure 2.3 Step 3 the art-based approach becomes more interrelated with the practice

Before teaching at the IAA, I taught at the University of Iceland (UI), where art student teachers learn art and pedagogy simultaneously. After I started to include art based approaches in my practice I realised I had been teaching the IAA student teachers the same way as if I had been teaching students that did not have expertise in the arts. The role of the arts could therefore be much stronger at IAA because the connection between conscious and tacit knowledge is different, as shown in the different spaces in figure 2.4 (Brock, 2015). From these deliberations, I realised I needed a broader perspective to address my question on the potential of art activities for understanding sustainability. Through ABR, I started to develop and use artistic processes in systematic ways to understand and examine my experiences of the potential of art in EfS. The field of ABR helped me to work through the epistemological process of artistic knowing and inquiry as an open-ended process, involving the self, the body and relationships as integral aspects of the process of knowing. The ABR deepened and extended the original basis of AR, which

focused more on the design and appraisal of learning sequences and artistic actions (Knowles & Cole, 2008). Most importantly, the combination of the two approaches supported my own development, to become aware of my own tacit knowledge, motivations and expectations as an art educator working in the contested field of EfS.

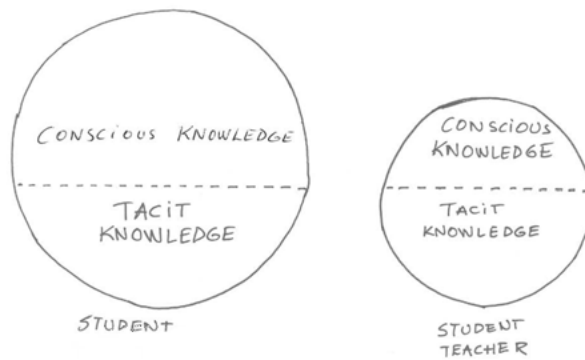


Figure 2.4 The interrelations between tacit and conscious knowledge based on Brock.

When I became aware of how powerful it was to use the arts and ABR to reflect on my main understanding of the concepts of sustainability, I started to create artworks based on my findings and to curate exhibitions. I had found it difficult in year 1 and year 2 of the research to track what was happening, but through my own reflexivity, developed through using ABR, I managed to support and continuously provoke my own development. The ABR methodology offered me the chance to look not only at the work of other artists, but also to understand how sustainability and artistic reflections, and artistic actions for sustainability have evolved and come into focus through developing and using my artistic practice. The ABR part of the study manifests itself in art creation and curatorial work which itself is intertwined with my AR work at the IAA. The manifestation of the AR is therefore also present in the exhibitions.

2.3.3 Emerging methods

When starting my search for the potential of art in EfS at UI, I was mainly working with AR methodology. From the beginning, I used an artistic approach to interpret my findings. Aesthetics is always important in the arts, and this was one of the issues addressed with the ABR work and is of central concern in the research. Leavy (2015) suggested addressing ABR questions from both theoretical and methodological standpoints. Leavy (2015) said:

On a theoretical level, the emergence of these new methods necessitates not only a reevaluation of 'truth' and 'knowledge' but also of 'beauty'.

Furthermore, the research community needs to expand the concepts of 'good art' and 'good research' to accommodate these methodological practices. (Leavy, 2015, p. 17)

On a methodological level, he added:

Arts-based practices have been developed for all research phases: data collection, analysis, interpretation, and representation. (Leavy, 2015, p. 12)

In this research, I started from the epistemological bases of artistic knowing, searching for the potential of art in EfS. That was what I embraced in this research as a necessary component in order to enter the space of EfS, which is an uncharted territory that requires an open inquiry. Both my own and the student teachers' artistic approach with the ABR was a means for undertaking this inquiry. Through my research my interest in understanding art education as a field of inquiry has grown. Also, I have seen how the problems of cognition, perceiving, and knowing are explicitly engaged in ABR.

When learning about sustainability through art, the student teachers were concerned with developing the immediate experimental skills of understanding EfS. Perception is not simply the passive recognition of an art work or image. Perception is an achievement of active intelligence, requiring mental constructs permitting us to perceive (Dewey, 1916). That aligns well with an AR approach by means of reflections. It is through the ABR reflexivity that I was able to bring these two activities into the same space of finding the potential of art for working with sustainability. Part of the research included the process of finding ways to put the two approaches, ABR and AR into the same space, resulting in the exhibition *LOOKING, back-around-forward* (see appendix 10).

When the research elements of the ABR and the AR emerged (figure 2.5), they became central to my inquiry and propelled further activity. The amoeba metaphor indicates multiple connected components that together had a significant role to play in achieving a holistic view. When analysing my data, I began to appreciate their affordances, a common base linking all the components; each component provided me with an action space and when trying to understand the past I was able to develop the future.

Three strong themes (appendix 12) started to grow out of the amoeba; pedagogy, participation and values & virtues. I started introducing participatory approaches in my AR as I had noticed that some aspects of my findings indicated that some parts of the participation work were not being fully expressed through the writings. In introducing the ABR approach, I was able to include tacit knowledge and other aspects that normally are side-lined in educational settings.

What surprised me after articulating the three emerging themes, was how much data I had gathered already that would help me to answer the questions connected to the potential of art in EfS. This realisation led me back to earlier data.

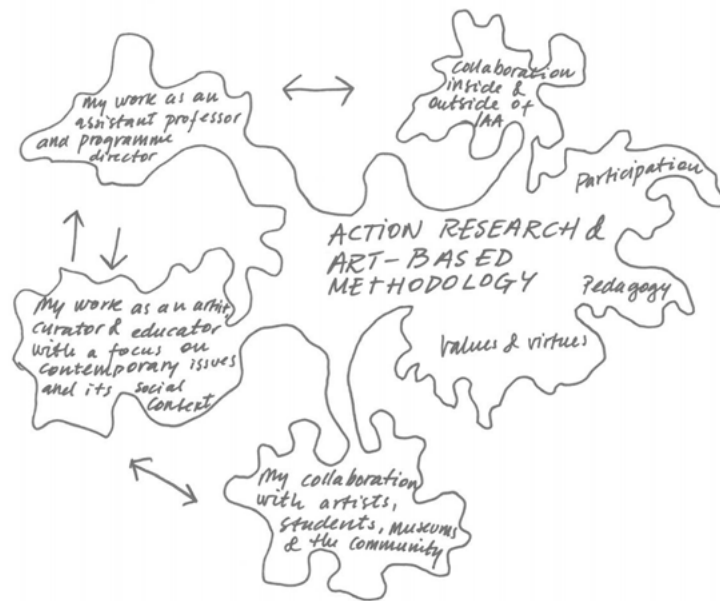


Figure 2.5 Step 4 themes started to grow out of the amoeba

2.3.4 Emerging methods turned into dialogical inquiry

At the final stage explained in figure 2.5, the centre of the amoeba represents the methods of AR and ABR, making connections between all possible parts. The different parts could be called action spaces, because within each of them independent activities took place. I had taken responsibility for plans and drawn up goals for each of the research processes. My reflections and the implications of the research were made possible through collaboration and linkages across all the amoeba stages.

It was a clear transition when the ABR and AR had emerged and turned into dialogical inquiry. Open dialogical inquiry within myself and with participants, and with different dimensions of being and learning being analysed, expressed, and enacted through different experiences. The original motivation of looking for the potential of art in EfS, as it was expressed in the beginning, was an isolated component in my own work, when I, alone, was trying to develop this focus in my university department. My approach became more effective when the original inquiry connected to collective efficacy within the department as well as in the research group that included many alumni.

When trying to use more creative approaches in my own teaching, including more art and using less conventional techniques with a focus on student teacher involvement, I experienced the limitations of traditional academic educational settings. The unconventional participatory approaches led to positive feedback from

the student teachers which encouraged me to continue. Through the ABR, I was able to recognise the notion of tacit knowledge. Often within the traditional AR approach, it is more likely to be working with factual and explicit knowledge, while the ABR allowed me as a researcher to elicit tacit knowledge, which led to further questions rather than factual answers. The potential of art in EfS is as diverse as the participants, because EfS thrives on personal connections that lead to personal questions, based on lived experience and interests.

Using a critical, place-based approach, student teachers were invited to find their own way to connect sustainability to their lived experience.

In the process of theorizing my practice with research, my understanding arose from a process of inquiry that involved creative actions and critical reflections.

As a significant means of human understanding, art practice is very mindful work as it makes good use of cognitive processes that are distributed throughout the various media, languages, and contexts used to frame the production and interpretation of images. There is an inherently transformative quality to the way we engage in art practice, either as learners or teachers, and this dynamic aspect has to be embraced if the idea that the studio experience can be conceptualized as research is to have legitimacy. (Sullivan, 2006, p. 28)

This review of the overall methodological approach in my research has shown how AR and ABR allowed me to find a bridge between theory and practice as I built a foundation for my professionalism and action efficacy. As described earlier, my doctoral research began as an in-depth study of developing personal practical knowledge in connection to my practice as an assistant professor and programme director at the Iceland Academy of the Arts (IAA). It was practical for me to reflect on my work and see whether the work lived up to my own expectations and my claim to professionalism (McAteer, 2013; McNiff, 2010).

Using ABR and AR methods gave me the chance to use my art practice to drive the research as a whole, and to use artistic reflections as a thinking process for reflecting on my AR findings. Through ABR I designed 'experiments' that explored questions about the act of art as a thinking process, and how I, as an artist, can make thinking visible, as well as how, as a creative practitioner, cognition can be increased during activities. In ABR, the art and the creative artefacts are the basis of the process of knowing. The method is applied to original investigations seeking new knowledge through practice and its outcomes, disseminated through both the artworks and the critical exegesis (Skains, 2016).

Finding the right place for AR and ABR was not difficult once I realised what I still needed to do to understand the interpretation and analysis of emerging issues. The research had taken on a new life and the neat and tidy diagrams (figure 2.6) with which I had started were becoming more and more spread out, or had even left the space. I was aware that as the research developed so the place and space

for discussion changed, and these changes themselves led to new opportunities for learning and development.



Figure 2.6 Step 5 my action spaces that developed during this research based on the initial analysis of my work

Time was an important feature in this research. For example, as the project progressed, I could revisit earlier components, casting new light on some of the prominent issues related to sustainability in Iceland. Media discussions about issues related to sustainability have been more frequent and resulted in better awareness of the phenomenon among the student teachers at IAA.

On the one hand, ABR helped me to achieve a greater awareness of my practice by becoming more systematic at self-assessing:

Through systematic, controlled action research, higher education teachers can become more professional, more interested in pedagogical aspects of higher education and more motivated to integrate their research and teaching interests in a holistic way. This, in turn, can lead to greater job satisfaction, better academic programmes, improvement of student learning and practitioner's insights and contributions to the advancement of knowledge in higher education. (Zuber-Skerritt, 1982, p. 15)

On the other hand, with AR as a framework for guiding development, I also used a systematic approach to introduce innovations in the teaching and learning processes

at IAA. For example, I referred to the student teachers' voice to show how I have improved my own learning and situations for the benefit of the students and others. The more references I made to the student teachers' experiences, the more powerful the body of knowledge became. My findings presented in articles 3-5 are underpinned by evidence that AR had constituted a form of learning with profound implications for the art education department at IAA and the development of the focus on EFS, with a student-centred approach (McNiff, 2010).

Through the ABR methodological process I reflected on the EfS framework outlined in chapter three. After each of the three exhibitions and my own art projects (see appendix 8-10) I explored what had happened, resulting in a more nuanced understanding of how I can use art to express my thoughts on issues related to sustainability and how the art making can help me through the thinking process. While all the projects are distinct bodies of work, each is based on a specific context connected to sustainability. Some of them are a direct reflection of how I make my thinking and understanding of EfS visible, while others are the reflection of a thinking process.

It is the emerging nature of my method which allows for critical reflection and collective action that is important to me. Alongside the visual representation I use language to assess the exhibitions, my artworks and actions, documenting my interpretations to understand my practice.

By using the metaphor of the amoeba, I was able to draw parallels between the development of the research and my own, personal and professional development, as an artist, educator and progressively, as an emerging researcher. In particular, this approach changed my identity as an educator putting me in direct contact with social issues. The emerged process became a mutual reinforcing partnership that increased the reflexivity and awareness of me as an artist and the student teachers at the same time. This approach allowed me to come out of traditional spaces to start pursuing a cultural role in society. That empowered both me as a teacher educator and the student teachers.

There are opportunities when different disciplinary domains are used to look at social learning. Different disciplines have different vantage points. This allows for consideration of things otherwise unnoticed. The use of different disciplines can also develop more holistic and critical perspectives. This kind of approach calls for explanations of values and assumptions that can be hidden behind expressions and concepts (Wals & Rodela, 2014).

I often deal with doubts from colleagues when I explain the methodology I chose for this research. I experience questions and hesitations in connection to art-based research. This is logical because within educational studies in Iceland art-based research is rare. It has been important for me to have developed a sense of self-efficacy as a researcher when I have experienced that people do not believe in the method. It was then also positive that I was using AR to complement it and enrich it, because in some cases it was a challenge for me to adapt the necessity of written academic language to the ABR findings. The verbal interpretation and

analysis gave me both an advantage and some constraints within the process of ABR (McNiff, 2013 p.4). The language of social sciences can sometimes weaken the power of the artwork or oversimplify the complexity of it (Smith, 2013).

Presentation of ABR results can have significant impact, i.e. when the demand for traditional findings are strong, especially when clearly connected to social needs. In the work *Color of Rovaniemi* (see page 190) I was able to offer immediate and simultaneous expressions of the complex elements that I could not achieve through other media (McNiff, 2013). That way the artwork did not deliver a definite answer, instead it created new questions both for me and the people in Rovaniemi.

Through the ABR I have been able to summarize what I have witnessed in my research on sustainability, portraying both personal and cultural messages to exhibition visitors. Researchers that use ABR go through a long complex process to create the product, continually and critically examining their data (Franklin, 2013). The ABR shares many qualities with AR and other qualitative research methods. ABR however celebrates an endless variability of outcomes even when people using the same materials are working with the same concepts. Art works are unique in nature even though artists are creating works through the emergence of discoveries made by more traditional research methods.

Art-based research establishes itself, the use of artistic intelligences by applied arts professions to solve problems and understand experience makes complete sense and suggests endless possibilities. (McNiff, 2013 p. 4)

For this research it has been very useful to combine AR and ABR because of how well the methods have served each other. The structure of the AR has helped me to keep track of the data, findings and the concepts, while the nature of ABR has highlighted interesting questions. By its very nature, art research is not intended to produce one specific answer, but it is very useful to summarize findings and draw together conclusions, that raise new questions.

2.4 Action research (AR)

After considering several models of AR in assignments I chose to use the model Kolb (1984) introduced to describe the process of AR (figure 2.10). This figure shows a spiral based on the insights gained from one cycle feeding the next. The key concept of the AR research cycle is the learning sequence or process for both teacher and student teachers, whereby both they and I learn and create knowledge by critically reflecting upon our own actions and experiences.

AR generally requires extensive and regular data-collection. In chapter 3-5 I analyse themes that have appeared in each cycle and the relevant data. This includes entries in written journals, the written and artistic responses of students to particular experiences of working with others and interpreting theories and readings, as well

as course descriptions and evaluation criteria. Further data on the development of student skills and understanding came from analysing assignments, interviews with stakeholders about their EfS experiences, and analysis of master's theses.

In this study, I obtained data in diverse ways. During the first year, the data was very varied. I used different methods at different times, trying to find out what would be the best way to inform my practice at IAA. I compared my first set of data with later sets of data, to see whether there was any change and whether I could say that I had influenced the situation. I gathered data in a cumulative portfolio that grew and changed during the process. Some data I thought was relevant in the beginning was of no relevance when I began the preliminary analysis. Other data that I had not thought of appeared later in the process. My aim was to gather as much data as I felt was right; and I gathered too much to begin with (figure 2.7).

2.4.1 The systematic process of data gathering

My systematic process of data gathering was digital, written, and in the form of recorded interviews and sketches. I gathered the data in a cumulative portfolio (figure 2.7) both digitally and in notebooks.

During the first phase of data gathering I collected narratives in my journal. I wrote down my observations of the student teachers' engagement and interests. I also reflected on the settings in the classroom, and reflected on participants' interests in the media in relation to sustainability. I noted down what bothered me and how I could change my own approaches.

Throughout the six years, when coming across action within my practice that needed to be improved, I reflected on it in written thoughts about ways in which I might begin to improve practice at IAA. This resulted in a new set of data in my portfolio that I also discussed when consulting with others about how I could move forward. Of course, the decisions about the change in my approaches have been my own, since I take responsibility for what I do. However, I have had to consider my options carefully and, in the end, decided on what I can reasonably expect to be able to achieve.

With AR as a framework for guiding development I also used a systematic approach for collecting data and processing (figure 2.8). I used case studies when trying to show how I have improved my own learning and situations for the benefit of others.

I wrote down notes to record my thoughts and observations related to my practice at the IAA, the research groups and the development of my practice, connecting quotes from students and their written responses. During the research process, I began to see patterns and themes through the written details I might not otherwise have noticed. The review of the literature helped me in my observations, pinpointing issues that I attended to by writing quick notes during a class, as well as notes and reflections after each class or interaction (see concept map in appendix 11).

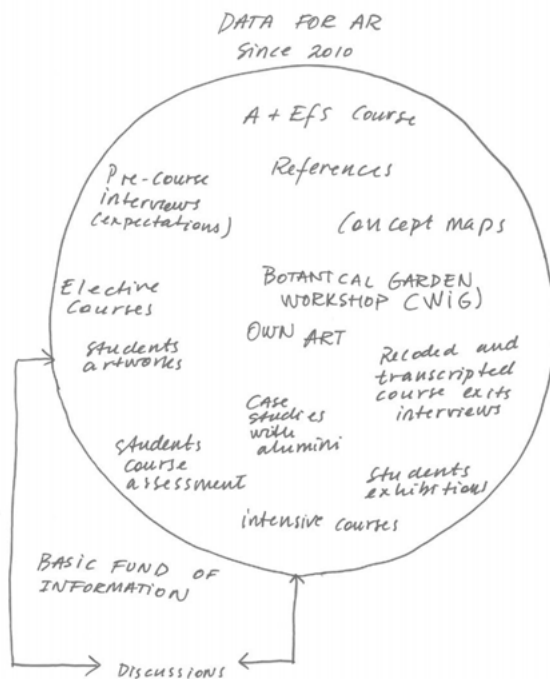


Figure 2.7 Data collected in cumulative portfolio for AR since 2010

The journal became an important source of information during the process of putting together the timeline of my research project. It includes field notes, sketches, quotes, student comments, self-assessment, thoughts, personal feelings, impressions and ideas. I prefer to write down my observations after addressing issues related to EfS rather than recording or filming a class. I tried both to film and record in year 1, and I felt the students were less relaxed and somehow were filtering their actions and expressions when they were being filmed.

In my journal, I reflected on questions such as: How are my lessons going? What things seem to be working? What things could be done more effectively? As a teacher, what things do you need to focus on or pay more attention to? What takes place during assignments when students work in small-groups? What are the common traits among those who seem to be having trouble in this area? How can I assist students that are dyslexic? What things help learning with this group? How do students at the IAA define themselves in connection to EfS? What would make the IAA more interesting for this group? What would they like included in their learning experience? What types of projects or performances would they like to engage in? How can I increase student driven initiatives? How do students' concepts of EfS change?

I have collected students' assignments and theses, connecting them to the dialogue in the classroom as well as taking semi-structured interviews with

students in order to understand their experiences and understanding of EfS. I have collected images of students' creative work, artist statements and students' creative writing responses. This has helped me to understand students' attitude and understanding.

For the last four years at the end of the A+EfS course I carried out semi-structured interviews with all the students participating in the class. In the last three years, participants also brought along the concept maps that they created during the course to follow their own EfS learning and self-assessment. I made sure to keep my interviews short and to approach them with open-ended questions, such as: Tell me about your experience of EfS. Is there anything else that you want to say about your experience of EfS? Were you able to connect to your own lived experience? What reading materials can you relate to? How do you like to express your ideas about sustainability? As an art teacher, what things do you need to focus on in EfS?

From year three onwards I also started to conduct interviews with participants before the course started to discuss their expectations and prior experience. During the interviews, I wrote down only a few interesting ideas or impressions while keeping my focus on the responses and follow-up questions. Sometimes I recorded the interview if I felt it would not ruin the atmosphere. After the interviews, I took detailed notes. I have transcribed the recorded interviews.

I wanted to see whether the practice teachers had become familiar with EfS at the IAA, and if it became part of their teaching. Purposeful sampling was used (Palinkas et al., 2011) to select seven in-service teachers, and they were interviewed with the intention of finding out the extent to which artistic work connects to EfS. They all had a strong orientation towards EfS and student-centred learning, and their master's thesis subjects were in different ways related to EfS. They were chosen to represent EfS cases carried out in school settings after graduation (Hamel et al., 1993; Hamilton & Corbett-Whittier, 2013; Stake, 1995).

The participants told success stories about sustainability projects within their school environments. In the interviews, the teachers were asked to describe an EfS project they thought was successful. They were asked to talk about their project in detail, including all important contextual factors. They were also asked for their responses to particular issues concerning sustainability and their focus and actions. The interviewer sought their opinion in general about EfS, collaboration with others and the potential they see in EfS (McNiff, 2010).

My role in the data collection and processes was dual: I was formulating learning principles for producing knowledge about higher education learning and teaching, as well as also using that model to improve my own learning and teaching practices (Riding, Fowell, & Levy, 1995). When presenting my findings, I have not differentiated between the design and delivery of teaching and the process of researching these activities. This brought theory and practice closer, developing my practice theory at the same time as the student teachers developed their personal

practical knowledge towards EfS. The ABR was based on my development as a teacher educator over six years at the IAA and my wish to advance knowledge within my practice. I explored how a teacher educator can contribute to student empowerment and self-efficacy as they develop their practice theory towards EfS as discussed in chapter 1 (Bandura, 1994; 1997).

2.4.2 AR data analyses

After the pilot year, I identified criteria to use when evaluating the educational interventions and processes. I linked the criteria with my professional values. The criteria have changed as the research project has developed. At end of every year I rigorously examined all data collected that year. I then followed the principles of AR methodology, which I derived from my journals, correspondence and course work.

The semi-structured interviews aimed to capture the respondents' ideas and concerns regarding EfS as well as their reflections on the types of strategies employed to solve the problems. The interviews were audiotaped and the data obtained was transcribed. The data was interpreted and categorized according to themes and strategies that appeared while coding the transcripts.

When analysing my journal writings, students' artworks, and writing responses, I looked for themes and selected three to become the main focus of the research: participation, values and pedagogy. I paid special attention to issues that were supposed to help students to develop their self-efficacy by introducing new activities and courses that would meet their needs. I brought in different scholars and activities that helped the student teachers to find personal connections to understand the concepts of sustainability and its issues. For the group it was clear from the beginning that it was best understood through artworks and also where they could use art making to reflect on their understanding.

When analysing patterns I found connections to the themes, both in the literature and in the interviews. The themes gave me ideas for possible actions for my practice development. I used concept maps to reduce qualitative data, flesh out themes, analyse them and find interconnections in the study. "A concept map is a schematic device for representing a set of concept meanings embedded in a framework of propositions" (Novak & Gowin, 1984, p. 15). For example, when analysing the artworks the students created as a reflection on the A+EfS course and the educational approaches at the Botanical Garden, I looked for the participants' connections between what they had created and what they wrote about their learning experience in the written journal. I made concept maps for each artwork and the response depicted what the students said about their knowledge gained from the course with a special focus on the context they had highlighted in their artist statement.

When analysing my AR data (figure 2.8), it was tempting to start to think outside my classroom but I made sure that all the analysis and inquiries remained focused on my practice.

In the next chapter I explain how I developed my AR by going through the cycle explained in figure 2.8, analysing each theme in chronological order. Through the cycle I extract different sets of data, explaining the development of EfS even though it could sometimes be very small. I reflect also on the development in my own thinking and learning.

In analysing the data I became aware of different concepts (see concept map in appendix 11), some familiar and some not. Next, I tested the implications of these concepts in new situations. I was creating my own knowledge and understanding of a situation and acting upon it, thereby improving the practice at IAA and advancing knowledge in the field of teacher education. The AR process I used is explained further in figure 2.8.

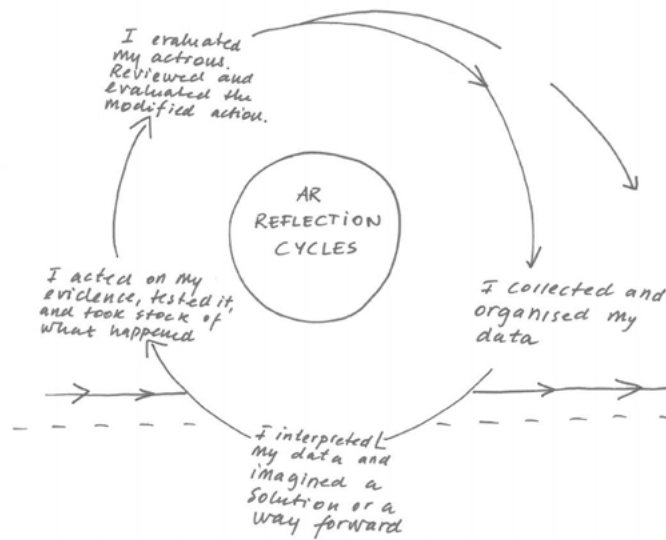


Figure 2.8 AR reflection cycles

A possible disadvantage of using AR is that parts of the cycle may take a long time to be completed.

When reflecting on the analysed data I could see how the learning sequences in A+EfS course and in the Botanical Garden influenced the student teachers and their practice. Once they began to create their own projects their approaches were often influenced by the themes that had been discussed and tried out in the courses I supervised during their training.

I write about how certain changes took place as I changed my practice, aiming to show the development of influence, an unfolding of new understandings and actions from people working together in new ways and their influence on one another, that is, how they learn with and from one another (McAteer, 2013; McNiff, 2010).

I continued with the action research throughout the whole process, so the action research continued to be the overarching framework but within that I incorporated ABR because it enabled me to disclose dimensions of learning and being. Both methods of inquiry that are not often considered by participants in higher education.

There is nothing sinister in the idea of influence, and everything to celebrate; most ideas that people have were influenced by someone else, somewhere else in time and space. This is the way that knowledge evolves, a process of learning from others and reworking existing knowledge in new ways. (McNiff, 2010, p. 13)

2.5 Art based research (ABR)

After I had been working on my AR for two years the comments in the research journal showed the need to bring my own artistic practice into my academic voice. Through the AR method I had been engaging classrooms and communities through art. In the A+EfS course I had noticed how valuable the artistic practice had been for the student teachers and decided to use the same methods myself to understand better my practices and findings. I felt I needed to try to find ways to make my own thinking process and the processes I used with my students at the IAA visible.

2.5.1 The artistic approach

Some research in the arts have in common that they are performed or carried out by artists, and their research envisions a broader-ranging impact than the development of their own artistry. Because visual art-based research has continued to grow and develop with different concerns, including audience and interpretation, artistic practice and process, representation and the apparent divergent aims of art and research, I had many approaches to choose from (Boulton-Funke, 2014).

For example, when creating the artworks for the art exhibitions, I used ABR methods that Borgdorff defines as *Research in the arts*.

It concerns research that does not assume the separation of subject and object, and does not observe a distance between the researcher and the practice of art. Instead, the artistic practice itself is an essential component of both the research process and the research results. This approach is based on the understanding that no fundamental separation exists between theory and practice in the arts. After all, there are no art practices that are not saturated with experiences, histories and beliefs; and conversely there is no theoretical access to, or interpretation of, art practice that does not partially shape that practice into what it is. Concepts and theories, experiences and understandings are interwoven with art practices and, partly for this reason, art is always reflexive. Research in the arts hence seeks to articulate some of this embodied

knowledge throughout the creative process and in the art object.
(Borgdorff, 2005, p. 6-7)

In the artistic process, the artwork both creates and represents data. Some of the artworks feed directly into the AR data and at other times the AR data is the starting point of the ABR approach. Some scholars at the University of Lapland have been working with a similar methodology, merging action research and artistic practices with a special focus on northern climate and circumstances (Jokela, Hiltunen, & Harkenén, 2015).

My own artistic processes also led to the development of mind-set growth. It focused on learning rather than work, promoting independence. This led to understanding based on knowledge (including tacit knowledge) rather than gaining new knowledge which is inherently differentiated (Ritchhart et al., 2011). In all my artistic processes, I always questioned the materialisation and the concepts which are important in my own work. My choice of materials is often site-specific and connected to nature-based materials and handicrafts. When using the term visual thinking, I am thinking of processes and practices that relate to conceptual thinking.

In the art exhibitions, the curatorial work focused on creating a holistic approach with a clear emphasis on sustainability. This includes my own installations with a focus on collaborative approaches, examining social practices from different perspectives on sustainability. In the exhibitions and the art making I was driven by curiosity, using art making as a process to understand sustainability-related concepts, reflecting on and making thinking visible. The products of the artistic activities and the ABR work are not necessarily knowledge, but could be understanding, inspiration and the questions leading to a search for new knowledge. In ABR methods the methodological approaches meet and blend. I generated knowledge through my works by looking at my questions in as many different ways as possible, both using the art as reflection on my own and the IAA students' thinking process, as well as by creating artworks through mixed media making my thinking visual.

2.5.2 ABR data collection

A range of data was collected as a source for reflecting on my artistic practice and venues. In my studio practice I involved myself in different forms of artistic expression, and then I systematically described and reflected upon what I did by writing and sketching in my journal, which then become part of the data portfolio (figure 2.9).

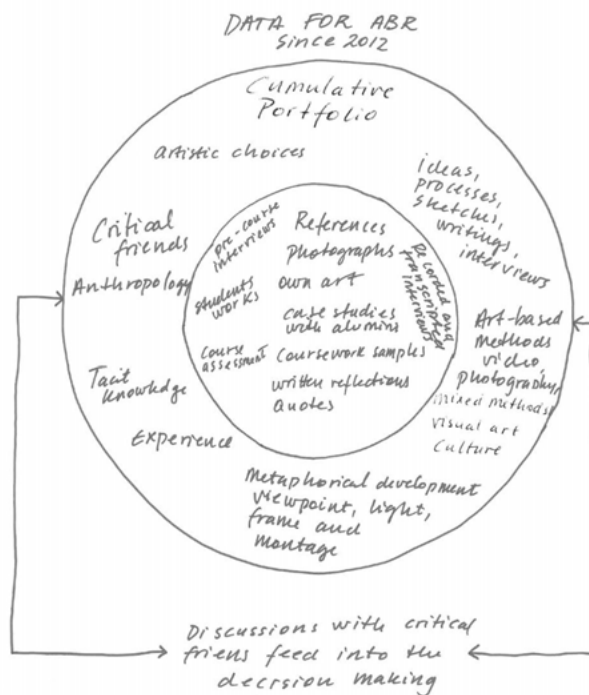


Figure 2.9 Data for ABR since 2013

With critical friends I discussed my experiments, findings and approaches, comparing my experience to those of others and the writings of other artists discussing ABR experiences.

I took notes on how in the classroom we discussed student teachers' experience of finding it easier to understand the complex issues of sustainability, as well as other issues, through dialogue with artwork, both their own and others. In my journal, I wrote about how my students explored the ways in which interpretations could further understandings. The journal consisted of field notes, sketches, and analytic notes. Reconstruction of dialogue with students, identifying key "ah-hah" moments, observations, accounts of events and activities, and my interaction with students were part of my field notes (Bogdan & Biklen, 1998). In the journal, I also wrote down my analysis including reflections on pedagogical method, reflections on conflicts, and reflections on my frame of mind (Holly, Arhar, & Kasten, 2009). My findings and experience from the AR become part of the data in the ABR as I explored, reflected on, and discussed with the student teachers issues such as how movement improvisation offers something to the interpretation of art that cannot be accessed in words. My ABR data collection involved drawing out main themes, creating artwork in response, and combining everything in three different exhibitions, of which the first two included works of others. The connection to the interpretation of artworks by others and how I designed my exhibitions to create

connections between different artists has helped to focus on how different sensory expressions can help me to further the relationship with my own art.

2.5.3 The ABR analytical processes

Through the process I extracted themes producing evidence to back up my claim. My critical friends helped me to consider my claim of having gathered or provided enough evidence for making my claim. Sometimes they agreed that I could make my claim, but often they suggested that I needed to look at the research again and approach the data in a different way, collect more data, or look at the criteria I had drawn from the data from a different angle. Therefore, when reflecting on my data I went backwards and forwards, making meaning from the inspiration and ideas that occurred during the AR and ABR data collection process.

In an arts-based study, the researcher uses the arts as a means of analysing and presenting the data. (Austin & Forinash, 2005, p. 462)

The following is an example of steps taken in my research project, which show how I reflected on my journal entries during the creation process:

- Summarise themes from my journals and notes into keywords or narratives.
 - Write down or sketch spontaneous ideas for reflecting on keywords or narratives with artistic responses.
 - Review my different artistic responses and connect them to other works and the empirical discourses connected to the idea.
 - Work on selected ideas, discuss with critical friends.
 - Materialise an idea and bring it into an exhibition or installation context.
- As a reflective practitioner, I believe that ABR can contribute positively to activity within the IAA concerning teaching quality issues, as well as initiatives for artistic action on sustainability (Schon, 1983; 1987).

2.6 Procedures used to acquire knowledge

The process within each cycle: to observe --> reflect --> act --> evaluate --> modify --> moves in a new direction that is called the action reflection cycle because it tends to be cyclical. Once the researcher has reached a provisional point where everything seems satisfactory, new questions appear and you start on a new cycle (McNiff, 2002. p. 9).

The ABR took four years, and I focused on my work as a curator and artist. The main data was drawn from preparing three exhibitions and tracing my development as an artist and a curator. I also reflected on the knowledge and understanding of issues related to sustainability which I gained through the AR process. As explained in figure 1.1 my findings from ABR and AR interact with each other.

In this thesis, I adopted some important characteristics of AR and ABR. AR is a circular process which connects theory and action (figure 2.10). In both AR and ABR, I as a researcher I was part of the study, and as the investigator and my workplace, the IAA benefited from it. I am a teacher educator, programme director, artist and a curator. Four roles that all interact. In the AR the use of immediately-generated knowledge could be used both by myself and the IAA, since this was an on-going cyclical process of constant improvement that it is based on preliminary data analysis and the ideological framework that I developed (Baskerville & Wood-Harper, 1996).

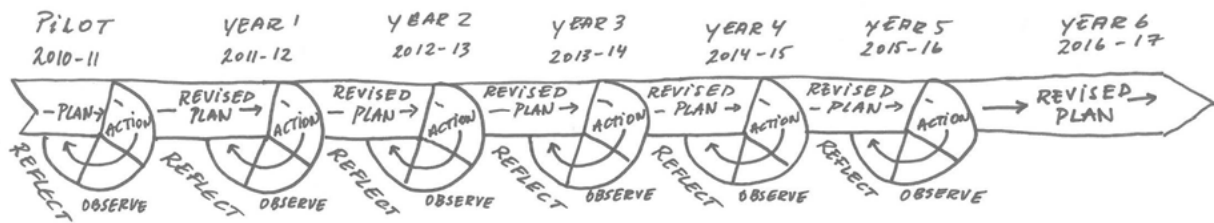


Figure 2.10 The AR process based on Kolb (1984)

There were several different ways in which I have engaged with education for sustainability.

- I created settings for the student teachers. Those who chose the A+EfS course at the IAA as an elective experience had an opportunity for education for sustainability to become a significant part of their professionalism.
- I worked with the City of Reykjavík, the Botanical Garden and Laugarnesskóli, a local primary school. IAA students taking a course on teaching methods in the visual arts had a chance to connect theory and practice and work outside the classroom with children aged 10-11 years old.
- I created and curated exhibitions. In the first, named *Challenge* (Arnes Art Museum, Hveragerði Iceland) and the second *Boundaries and Bridges: Creating new roles for old traditions* (Harpa, Reykjavík, Iceland), I was the curator but also had some works of my own. In the third called *LOOKING: back - around - forward* (Arktikum, Rovaniemi), I was the solo artist, exhibiting seven works as well as being the curator. Some of my work that are part of this thesis have been installations, others have been photographs, video or mixed media, many of them with a focus on participatory artworks.
- I used feedback and reflection to formulate views that I discussed around different themes which came up during the AR and ABR. The developmental processes with my colleagues at work, critical friends and all stakeholders, both students and other teachers of the departments influenced my findings.

The interventions were planned by me as part of the research process and the changes I promoted in my practice at the IAA.

My 'critical friends' were very important for the research process. Critical friends have been shown to support the work of school leaders (Swaffield, 2002). All of mine were able to critique my work and they helped me see it in a new light. Some of these critical friends are artists that have given me critical feedback in connection with the artistic part of the research, and others are scholars that are interested in issues related to EfS.

During the research I have also belonged to research groups where I received very important feedback throughout the last five years. According to MacBeath (1999), the contribution of an external agent can bring a measure of objectivity as well as a measure of support. My experience was in line with Carlson's (2009) as he described the role of the critical friend as a person who is listening, understanding, questioning, challenging and providing feedback, not on the basis of finding fault, but somewhat as a supporter of the continued progress, accomplishment and fulfilment of the researcher. The critique from critical friends was essential. The critique helped me to question my artistic conclusions and the practice led to findings and helped me to evaluate the quality of the research (McNiff, 2010). Some were critical friends from the start of the project and its design, and others in later stages. Building on this capacity fundamentally involved building relationships and collaborations. That included developing trust and building community. In this sense, Harris (2010) has recommended paying careful attention to how collaborative processes and participation in schools are adopted and developed.

It was also important for me to take part in a variety of research groups to get diverse perspectives. Through the process of participating in different conferences, and when I visited other colleges, I made new connections and achieved new viewpoints. In presentations and workshops, I shared with other professionals what I had done. Through many of these presentations, dialogues, my own notes and reflections, I was able to monitor and assess my own progress in a systematic manner. I have presented a range of projects with a clear connection between theory and praxis and found evidence in my research notes and through curating exhibitions, which have explained my progress, before writing the articles and book chapters that are part of this thesis.

One research and development project that has been very influential for this research since the third year of the project is the network Action for Sustainability in Higher Education in the Nordic region (ActSHEN) funded by Nordplus Higher Education. The members of this group, from four institutions, aimed to develop a model and guidelines for working with sustainability in higher education with an emphasis on student-driven initiatives. The model later became a set of principles (ActSHEN 2016). This is something I have adopted now as an inspiration in my practice. Participants attended workshops designed by themselves or other

specialists in sustainability and related fields, visited other institutions in the project and took part in ‘critical friend’ activities both as hosts or guests. A short publication on the individual projects (case studies) and the final set of principles developed is the project’s final product (ActSHEN, 2016). The members of the ActSHEN group are all active educational leaders. Harris notes in that context that: “Findings from diverse countries draw similar conclusions about the centrality of leadership to school improvement.” (2002, p. 66)

The Artistic Research-Practising Communities (NSU Circle 7 Nordic Summer University) is an independent and open academic institution, which organises seminars crossing academic and national borders, fertilising collaboration between academics to create research agendas. I participated three times in courses at the NSU, and received valuable support for the art based research methods, providing me with useful reflections on my development. Leithwood and his colleagues (1998) have developed a model with seven different components of support: individualised support, which I received from my critical friends; shared goals, as we worked together in the ActSHEN research group; intellectual stimulation, as I have received through participating in the ASAD² Network and InSEA conferences about art education; culture building, as I have worked with my colleagues at the IAA; rewards, like the prize we got for the WIG project from the city of Reykjavík and the nomination for the exhibition *Challenge* as one of the fifth best exhibits of the year 2015 (Myndlistarsýningar ársins, 2015); high expectations as I have received from my friends, family and superiors at IAA; such as the conclusions made by the ActSHEN group.

When presenting my findings in conferences and articles I have sometimes included interviews allowing the voices of the student teachers and former students to come through and explain how their knowledge about EfS improved due to some of the interventions. The feedback has been very important for me and helped me to develop my practice. The feedback, provided in discussions after presentations and in leisure time during the conferences, has allowed me to generate an important report in my journal that reviewed how well I performed and provided me with a useful connection to other scholars and projects. Open ended, semi-structured interviews were also conducted where I discussed with the students their expectations and what they had to offer during the course based on their background. How to bring their voice into the course. The course has evolved from year to year based on what I learned from my practice the year before and how the group was formulated.

2 The network aims to identify and share contemporary and innovative practices in teaching, learning, research and knowledge exchange in the fields of arts, design and visual culture education. The network consists of art and design art education universities in the circumpolar area. Combining traditional knowledge with modern academic knowledge cultures at northern academic institutions represents an opportunity unique to the Arctic.

2.7 A relational learning tool

Since 2012 I have used the Relational Learning Tool (RLT) designed by John Woods from Goldsmiths University in London. The IAA adapted it and developed it with Woods into a relational assessment system (Metadesigners, n.d.). I have systematically used it to supervise the student teachers when they write their master's thesis. It has also been very useful when developing courses (Gollifer & Jónsdóttir, 2016).

In this research, I used RLT to plan my actions and to understand my practice. The RLT systematic approach offered me a self-reflexive approach encouraging a role play where I looked at relations between clearly defined factors with a focus on relations between myself, the concept (sustainability), the learner (student teacher or museum visitors) and all the processes that took place in relation to my work as an assistant professor or as a curator / artist. RLT helped me to map out the key elements of EfS in different situations in a self-reflexive way, reminding me of different interacting factors. RLT has made the ethical implications more obvious when developing the EfS approaches within the department because it helped me to assess relations, not isolated factors (Wood, 2013).

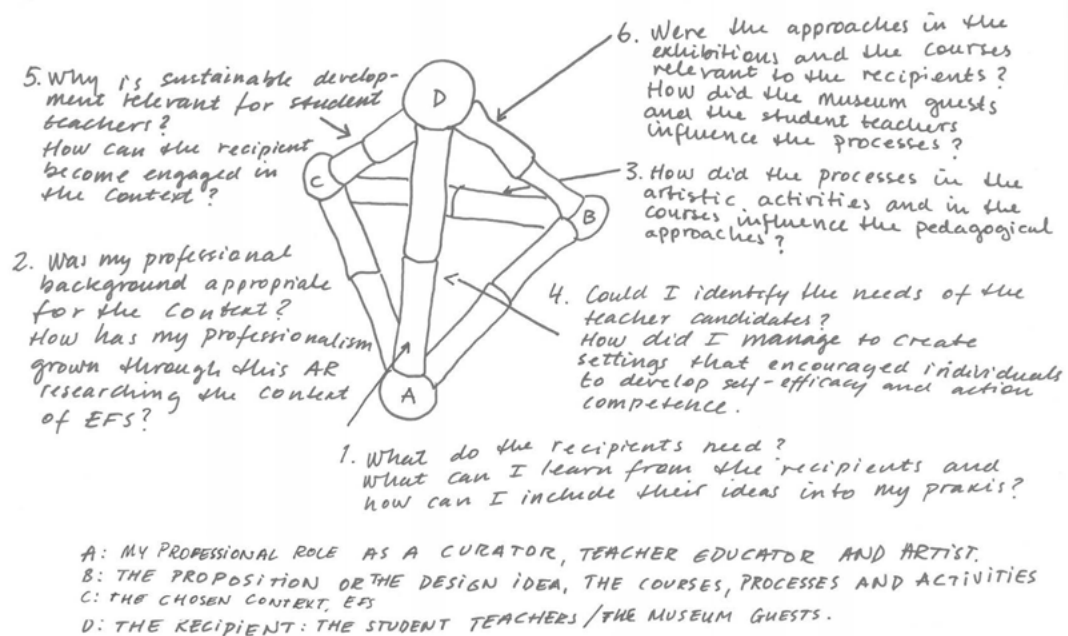


Figure 2.11 The RLT tool and related questions

Wood represents the tool as a three-dimensional tetrahedron (Wood, 2005) that challenges the linear approach to assessment of design and focuses on a deeper ecology. In this sense I found it relevant in the context of working to address

sustainability's wicked problems, intrinsic values and tacit knowledge. Also when finding the balance between culture, ecology, economy and social justice (Wood, 2005).

Wood's focus is on the critical, complex and interdependent relations between what he refers to as standpoints or narratives (see points A, B, C and D in the figure 2.11). When applied to my courses and artistic actions A represents my professional role as a teacher educator, artist and curator; B represents the proposition or the design idea, the courses and the activities both in the IAA settings and in the museum settings; C represents the chosen context, artistic EfS; and D is the recipient, the pre-service art teachers or the museum guests.

When organising each exhibition, I used the three-dimensional tetrahedron to organise my practice. Independent three-dimensional tetrahedron will be represented when I discuss each exhibition and my practises in relation to them, in chapters 4-6.

2.8 Multiple roles in the research

In the research processes, my role was dual: I was formulating learning principles for producing knowledge about higher education learning and teaching, and was also using that model to improve my own learning and teaching practices (Riding, Fowell, & Levy, 1995). When working with my findings, I did not differentiate between the design and delivery of teaching, and the process of researching these activities. This brings theory and practice closer, developing my practice theory at the same time as my student teachers developed their personal practical knowledge towards EfS. The ABR is based on my development as a teacher educator over six years at the IAA and my wish to advance knowledge within my practice. I explored how a teacher educator can contribute to student empowerment and self-efficacy as they develop their practice theory towards EfS as discussed earlier in chapter one (Bandura, 1989).

The process I have followed in both approaches is in line with the six features described by Zuber-Skerritt (1982) as *critical collaborative enquiry*.

1. I constantly looked for ways to improve my practice at the IAA and my artistic approach, working within the constraints presented by the institution.
2. At the same time I worked as an agent for critical change, as my findings indicated how those constraints and traditions needed to change.
3. As a reflective practitioner, throughout these six years I have analysed and developed concepts and principles about my experiences, both as a teacher educator and as an artist.
4. I have worked on being accountable in making the results of my enquiry public, working with my colleagues at the IAA art education research group and other research groups discussed earlier in the chapter. Using accessible terminology, I have given many open talks in different conferences to scholars and other interested practitioners.

5. I have also been self-evaluative of my practice, using the reflective and analytical insights of the researcher from the basis of the developmental process.
6. I have used participative problem solving and continuing professional development.
7. I have taken qualitative interviews with stakeholders that have participated in the events while working in close collaboration with my colleagues at the IAA, as well as with, and for, those affected by a problem and the way in which it is tackled.

As a tool to make my thinking visible, I used the guidelines formulated by Ritchhart, Perkins, Tishman and Palmer (2011) on how to identify ‘thinking moves’ that produce and form the basis of understanding. The guidelines include careful observation and description of one’s surroundings, the importance of constructing explanations and interpretations as well as providing evidence for reasoning. It also emphasises the importance of making connections and considering different perspectives while capturing the heart of the matter and drawing conclusions based on that knowledge (Ritchhart et al., 2011).

Arts-based educational research occupies a liminal space between long traditions of research, often understood in terms that have been defined, shaped, and governed by scientific approaches, and even longer traditions of artful practice that have been explored, composed, and inspired by artists. Arts-based educational researchers are always seeking to understand the parameters of “good art” and “good research,” and they are never satisfied with any checklist, template, or formula. Instead, each new arts-based educational research project is informed by past projects, but is always also seeking to extend the possibilities of what constitutes both research and art. This process is creative and emergent, a dynamic process of inquiry. (Sinner et al., 2006, p. 1229)

The ABR approach mirrored the goals of general phenomenological inquiry, the search for the discovery of meaning and essence in significant human experience. It also seeks the disclosure of truth. Its unique aspects had to do with a belief that self-experience is the most important guideline in the pursuit of knowledge. This had to do with the link to tacit knowledge as a direct experience. One only knows what one has experienced in the self. The refreshing quality of this line of methodological thinking has been important to me as a researcher in the whole process of the study.

The ABR approach enabled me to explore questions about my creative act. How did the artistic process work? How did the experiments of the nine art works I created reflect on EfS and how did this affect my process of understanding issues related to sustainability? My claims of originality and contribution to knowledge are demonstrated through the creative outcomes in the three exhibitions and my

artworks. The significance and context of the claims are described in the next chapter and the artworks and exhibitions are explained with direct reference to the outcomes and theories.

2.9 Timeframe and the components of this research

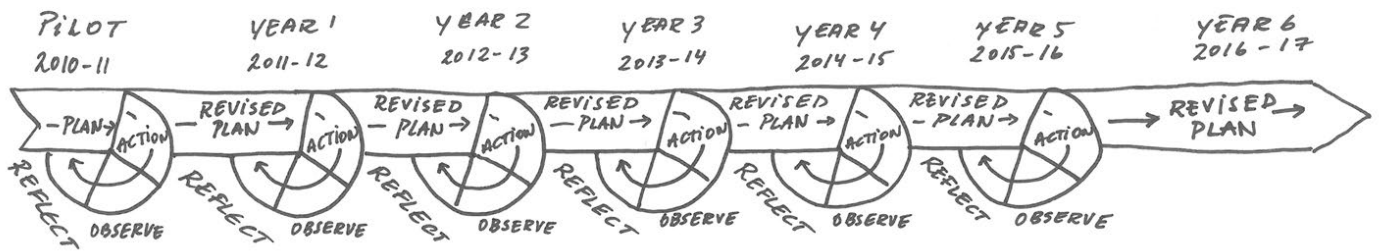
I have created a visual plan explaining the doctoral project. This review reflects on seven articles and book chapters and three exhibitions and exhibition catalogues that can be found in appendices 1-10.

Overviews of the time schedule and data generation explaining activities, data collection and data processing are to be found in appendix 14.

2.10 Ethical issues and biases

My interpretation of this arts-based AR was in line with Holly, Arhar, and Kasten's (2005, 2009) view since I looked at it as a powerful, structured, systematic, rigorous research process that helped me to structure professional growth and which created settings for student teachers' development for lifelong learning, while maintaining an ethical commitment to improving practice and realizing educational goals. It was important to me to pay close attention, and not to be biased, as I kept reminding myself of the power of the researcher. All scholars and researchers take political and ethical stances, but being human also involves that they inhabit them and are not fully aware of them. When political and moral positions are acknowledged, or exhibited, there is a potential to find strategies that enable the outcome to be judged rigorously (Griffiths, 2011). By applying two different approaches to the meta-research question: What is the potential of art in education for sustainability, the emerged method of ABR and AR enabled me to see the discipline and the structure of my everyday learning from different angles of experience. The two different approaches also made it clearer to other people how I know what I am doing. The formal action research inquiries became part of my professional learning, often leading to accreditation for me and my department.

This is a study I carried out for two reasons. On the one hand, I wanted to improve my practice at the IAA, and this was done by trawling through the development of the courses, looking at decisions I made and evaluating what worked. On the other hand, I used this opportunity to find diverse ways to promote sustainability through contemporary art. Despite the complexity and personal reflection required of students in the study, no student faced coercion or risk by participating. The nature of the research presented little risk of harm to subjects and involved no procedures for which written consent was required outside the research context. It should be noted that this research does not fall under the Personal Protection Act no 77/2000 (Lög um persónuvernd, 2000) about sensitive personal information or information which reveals the participant's identity.



Article 1: Art and place-based education for the understanding of sustainability
Published in Education in the North.

Findings from action research. Looking at the class Art and EFS Class 2011 and 2012
RQ # 1 PLR-PBR

Article 2: Making values visible: An artistic exploration of sustainable living. In the book COOL- Applied Visual Arts in the North

Findings from Nordic- Baltic workshop on memories and cultural sustainability
RQ # 2 & 3 PLR

Article 3: Human nature and participatory virtues in art education for sustainability in Relate North: Art, heritage and identity

Findings from interviews with five art teachers, former students at IAA
RQ # 1, 2 & 3 PLR

Article 4: Teaching and learning for sustainability: An Icelandic practice-based research
In International Journal of Education Through Art

Findings from action research. Art and EFS class 2013 -'14
Students art works
RQ #3 & 2

Article 5: Artistic actions for sustainability in contemporary art exhibition. In I. Birkiland, R. Burton, & C. P. Parra, (Eds.), Cultural Sustainability and the Nature-Culture Interface: Livelihoods, policies, and methodologies
London: Routledge

Findings from Exhibition 1 and interviews with stakeholders. RQ # 1 PBR and RQ1 PLR

Article 6: Artistic Action for Sustainability: Developing practice-led and practice-based expertise through a joint degree from Iceland and Finland
RQ# 1 PLR & PBR

Article 7: Place based Art Teacher's Education for environmental awareness's: "What lurks in nature that we have never seen or heard?"

Exhibition 1 Challenge
With works by contemporary Icelandic artists, including my works:
Skuli's Crosses
Our Nature – My Wishes for the Future

Exhibition 2 Boundaries and Bridges
At the annual Arctic Circle Conference
Artworks by contemporary Icelandic artists shown to scholars and researchers that are studying sustainability from diverse perspectives (not art).
With works by contemporary Icelandic artists, including my works:
Value Archive

Exhibition 3 LOOKING back- around- forward
The focus of this solo exhibition was on participation and community involvement. Cultural sustainability and environmental issue in the past, present and the future.
Teach me something
Colours of Rovaniemi
Lesson from the Geese
Everything Connects
Integrated view of the world:
Collaborative perspectives
Inhale, Exhale
MemoryBits
Dialogue between my foremothers

Figure 2.12 Timeframe and the components of this research

All participants received information outlining the purpose, process, risks and benefits of the study to enable an informed decision regarding participation. Participants' involvement in the study differed from typical student activity in a course setting at the IAA to interviews taken with former students. Furthermore, informed consent was again sought from each of them at the beginning of the first interview. Moreover, before the field observations, written consent was obtained (see appendix 12). Before the defence an email was sent to all student teachers who took part in the two courses at IAA (see appendix 13).

The data that was collected and analysed included routine course and retention assessment with no participant identifiers, which allowed for no risk for the research. It also included interviews with students, my written journal notes and students' final written and visual assignments.

2.10.1 Confidentiality and the Right to Privacy

A concern for research ethics is important as it involves the rights of all participants. Participants were informed of the study; their privacy and confidentiality was honoured throughout the process and they were given an opportunity to be introduced by their real names or anonymously when discussed in relation to selected artworks. In many qualitative research projects anonymity is identified as critical to the protection of human participants and to the success of the study. In this research, however, the artistic identity of each participant is important. All of the artists wanted to be identified using their real names. Before publishing any of the articles or book chapters, participants were offered a chance to read the chapters so that each could make an informed decision regarding their participation. None of them rejected anything, but in a few cases some of them added comments, which were useful.

All interviews in which the student teachers interpreted their learning were conducted after the end of semester grades were given and after the students had assessed the course. As an AR study, there was a natural bias on my part as the researcher, as is to be expected with all studies of this nature (Hatch, 2002). Still the focus of the research is self-reflection, so it is less likely to harm others.

2.10.2 Ethical issues within the museum settings

When curating the art exhibition, it was important to treat the staff of the museum i.e. technicians with courtesy and respect. I made sure to listen to what others had to say, and considered my role in the relationship. In the *Challenge* exhibition I worked in close collaboration with Inga Jónsdóttir the museum director. I learned a lot from her advice and expertise which I built on when setting up the other exhibitions.

As a curator I needed to work in accordance with the national policies of museums and in the spirit of a code of conduct (Genoways & Ireland, 2003). In relation to the stated aim of exhibiting art works that promote sustainability, I made criteria and used questions in order to select works from the National Gallery and Reykjavík Art Museum because I did not have funds to pay the artists. Even though most of the works were borrowed from the museum I still had a moral duty to inform the artists about the context in which I would exhibit the works. Some of the artists during that process then asked if they could exhibit other works that they had not shown before and I welcomed them this but explained that there was no funding to pay them.

Before starting to curate the first exhibition I studied the *Code of Ethics for Curators* (2009). What was relevant to my practice was to:

- Remain current in the scholarly developments within the field of the chosen concept; I conducted original research about EfS in museum settings.
- Develop a new approach which contributed to the advancement of the body of knowledge within the field of EfS. I gave an open lecture, on International Museum Day, for all museum directors in Iceland explaining how museums can contribute to EfS (FÍSOS, n.d.).
- Interpret the art loaned to the museum. This I did when I when going thoroughly through all the works owned by The National Gallery and the Reykjavík Art Museum. Having made my choice I first spoke to the artists before making the official loan agreement. The artists who were not asked may have felt excluded, but that is the nature of all group exhibitions.
- Develop and organize exhibitions. That I did at the Arnes Art Museum, at Harpa and at the Valo gallery.
- Contribute to the museum programmes and educational materials. I put a strong focus on this in the *Challenge* exhibition and I included some student teachers in the workshop asking them to run some of them.
- Advocate and provide for public use of the exhibitions. This I did by visiting many of the schools of the county to introduce the exhibition.
- Develop or contribute to monographs, essays, research papers, and teaching products of original thought. I wrote exhibition catalogues (appendix 8-10) and I have also written many articles in connection with the exhibitions.
- Represent the exhibitions in the media, at public gatherings, and at professional conferences and seminars. I had the opportunity to give interviews on the public radio and newspapers and introduced the exhibitions. I have also included discussions about them in many conference talks. All the exhibitions were frequently discussed in the A+EfS courses.
- Remain current on all fronts. This was my goal and when analysing my journal my focus on sustainability is very current and it was important to use contemporary artwork to reflect on contemporary issues. This is in line with the

roles of museums that should build on trust and interpretation of culture in the form of exhibitions and other communication (Lewis, 2004).

In the roles of researcher, exhibiting artist curator it is obvious that my challenge was to keep bias to a minimum. In the art based research, I had to dive deeper into my own experience. I recorded my own responses and reactions and constantly reflected on my experience, both when working with others setting it up and when analysing my journals.

Part of my findings include artistic interpretations of what I absorbed in my teaching. In the works as explained in the following chapters I responded to interviews and the notes from my classes. This way I managed to follow Dewey as I captured “an experience that is unified and total.” (2005/1934)

When interpreting data through art, i.e. when I use video or photographs, I choose what to shoot and how and where. When exhibiting the work, I also arrange the works and place them in certain order based on my aesthetic insights. Just as when I am interviewing the process is similar as I choose the focus and the words used. My artworks are made in direct relationship to my research questions.

2.10.3 Ethical issues within the IAA settings

As I am an assistant professor and a programme director within the contexts of the Iceland Academy of the Arts, a deep, layered knowledge about the students I refer to and the learning community will always be present in my findings (Holly, Arhar, & Kasten, 2009). Even though this may be seen as a disadvantage, it can also be seen as an advantage, since it is only myself, as the teacher in the department, who is in a position to describe and adjust instruction based on student responses and as a programme director I can contribute to changes that involve settings for the student teachers to achieve action competence and develop self-efficacy (Black & Wiliam, 1998; Good & Brophy, 2003).

The students enrolled in the art education department of IAA produced some of the data for this research through their class work. The data used included written responses, final assignments, self-reporting through interviews, and in-class discussions. As such, the data could reflect students’ own biases and their ability to express their true beliefs (Creswell, 1994). Reflecting on sustainability related issues through an art-based approach could of course present challenges i.e. when the student teachers selected materials to work from. The mediums they selected for the art creations brought with them a whole set of issues to be discussed in relation to ethics in the context of environmental awareness. Sometimes I had to deal with moments when discomfort was expressed after a critique. For example, an artist reflecting on the melting of a glacier used thick acrylic varnish on her work. During a group critique she felt uncomfortable and experienced failure. I always have to remind the student teachers to respect others in the critique process. I

always made sure to lead the student teachers through self-reflection on issues that can cause biases. In this case, for example, I asked her about her choice of material. During discussions after the opening of the final exhibition she felt satisfied and expressed how much she had learnt from the critique process. She was also happy that her work was bought at the opening, so the use of varnish will hopefully protect the piece for the coming future. This way ethics and biases become part of the learning process and the discomfort and awareness of error become productive in the learning process.

When working with the concepts of sustainability at IAA we were simultaneously working with art and morals, i.e. discourses within aesthetics. Considering values and morals through the interpretation of art work raises a diverse range of ethical issues. Works of art also provide personal connections because artistic performances require considerations and ask that the interpreter be open to the unexpected and the unknown.

One way to see my different perspectives of my teaching would have been to have an external observer in the classroom. I unfortunately did not have funding for that.

My teaching does not only include different sets of pedagogical efforts specific to the discipline of EfS, but also the means of embodying the passion of sustainability. To this end I focused on student driven initiatives. That kind of attitude required that I developed a relationship with the student teachers based on equality and respect, a relationship where we learned together and from each other. Some students might find this uncomfortable if they expected the teacher to be a provider of knowledge. In my classes I discussed with the student teachers how to create a safe space in the classroom for unconventional approaches and encouraged students to try different approaches teaching each other. Unconventional learning processes during the course included allowing the participants to choose the way they interpret their findings (visually/ written or both). This way I met the student teachers on their terms because they were already artists. They were also being invited to use tacit knowledge.

My way of teaching was inclusive and it incorporated the student's prior knowledge and experiences, thus respecting tacit and conscious knowledge. In that context, I needed to make sure to allow everyone to have a strong voice during the course. It sometimes caused biases if some of the student teachers had a stronger presence than others. When working this way, I aimed for a transformative or transgressive process which involved multiple actors engaging with complex social-ecological local issues and settings. That approach included reflections on ethical issues in our everyday behaviour. According to the student teachers the strength of A+EfS is that we constantly remind ourselves of our choices in our everyday life. The students were challenged to keep track of their actions through concept mapping. In transgressive learning issues related to moral action and ethics provide a dynamic relationship within the classroom. In transgressive processes knowledge is generated, aiming to enrich the 'common good' through a process of connecting

(Lotz-Sisitka, 2016).

I focused on having the student teachers' stories and ideas form the class. This included discussions about their expectations before starting the classes. Written reflections about the readings and findings connected to lived experience, and helped me to find stories which I could use to encourage timid students to express their ideas.

When the classes have been large, with up to 20 students, the students said it was wonderful to get such diverse ideas from the other artists. When the group has been small, down to 10 people, the participants reported a safe setting that emphasizes trust and where the student teachers experience an intimate, empowering atmosphere.

The issues concerning ethics discussed above inform one another and take into consideration a range of aspects of society and everyday life.

Table 2.1

Overview of the limitations and benefits related to the research procedures in relation to type of knowledge gained.

Type of knowledge	Limitations	Benefits
Action Research		
<p>Experiential knowledge gained through experience.</p> <p>Propositional knowledge that has been expressed in declarative sentences or indicative propositions.</p> <p>Practical knowledge that motivates certain behavior or acts.</p> <p>Tacit knowledge that is difficult to transfer to another person by means of writing it down or verbalizing it, but can be expressed through art.</p> <p>Emotional knowledge that gives the capability to recognize one's own and other people's emotions. Gives the tools to discern different feelings and label them appropriately.</p>	<p>Small scale inquiry.</p> <p>In line with limitations in traditional qualitative research methods that aim to communicate particular experience. There is a need for alternative methods that move beyond forms of dissemination that typically cater to academic audiences and are mainly written.</p> <p>AR does not have the ability to quantify and measure change.</p> <p>Ethical issues regarding privacy and publishing photographs.</p> <p>It is the practitioners who decide to use this research method and they have to be prepared to critically analyse and evaluate their own practice if they want to make changes and improve.</p> <p>Some question the validity and reliability of the results as findings are often unique to the specific research. So that if the research was carried out again with a different group results might not be the same because it is dependent on the context.</p>	<p>AR provides a framework for systematic inquiry into one's own practice. It is local and focuses directly on issues surrounding the practice being researched.</p> <p>Highlights features of lived experience.</p> <p>Helps with professional development.</p> <p>The AR is an empowering process the researcher learns where he needs to improve and where he was already doing a good job. This allows the researcher and public to gain deep insight into the experiences of the individual / group.</p>

Type of knowledge	Limitations	Benefits
Art Based Research		
<p>Contemporary art deals with many of the issues of EfS in diverse ways, defining scientific logic and methodology and offering unorthodox, unpredictable ways of thinking about the world and of the idea of “knowledge.”</p> <p>Tacit knowledge</p> <p>Emotional knowledge</p>	<p>Lack of recognition within the academic system. Many universities are not ready to accept some approaches of inquiry into the social world and ABR is an innovative set of techniques that researchers draw upon.</p> <p>ABR does not have the ability to quantify and measure change.</p> <p>Balancing the artistic and academic components of the project is difficult. So that if the research was carried out again by another artist the results would not be the same even though the message could be similar.</p>	<p>Knowledge creation; knowledge dissemination; knowledge translation and exchange with great presentational potential. The approach builds on direct experimentation using materials of expression and imagination in the creative process.</p> <p>Artistic interventions into society have an effect on those engaging in them. You can reach diverse groups through exhibitions.</p> <p>Goes beyond the limitation of the language.</p> <p>Participatory art reflects on lived experience.</p> <p>Creates questions for further research.</p>
Publications		
<p>Reflects on the research and the research findings.</p>	<p>The time delay in acceptance of articles in some research fields and the strict restrictions on the length of research articles which may lead to the omission of methodologies normally included in a monograph.</p> <p>The professional skills of the reviewer are unknown.</p>	<p>Wider discussions and reviews of the research in progress.</p> <p>Valuable feedback can push the process. The experience gained by the doctoral candidate when writing research article.</p> <p>More people read articles in high impact journals than some doctoral monographs.</p>
Exhibitions		
<p>Reflections on contemporary issues expand, diversify and challenge the perception of given knowledge.</p>	<p>Some people might not have any background in interpreting artwork or they might lack interest in using critical engagement.</p>	<p>They propose alternative ways of thinking about ourselves, the world, culture, and history.</p> <p>The artworks selected offer possibilities for suspending, expanding, and challenging our perception of given knowledge, as they propose alternative ways of thinking about ourselves, the world, culture, and history.</p> <p>Goes beyond the limitation of the language.</p> <p>Feedback from external examiner is very useful.</p>

Type of knowledge	Limitations	Benefits
Participation in academia		
<p>Knowledge from other contributors in research groups, conferences, meetings and professional works within the same realm.</p> <p>Experiential knowledge</p> <p>Propositional knowledge</p> <p>Practical knowledge</p>	<p>TIME</p> <p>FUNDING</p> <p>Selecting the best and most useful conferences.</p>	<p>Conferences contribute to and disseminate about the most recent advances in the field.</p> <p>Presentations and participation in research groups allow doctoral candidates to present their preliminary findings during many stages of development of the process.</p> <p>Feedback from conference guests. Learn to talk about data.</p> <p>Meet other researchers and professionals in the same or related fields and create contacts for collaboration.</p> <p>Meeting EfS researchers from other disciplines.</p> <p>Supports the development of an argument in the papers and the exhibition catalogues, with the synthesis of the relevant literature and an integrated discussion of the methodology.</p>

3 Understanding of the concept sustainability through interpreting art

An important part of my research along with my professional work at IAA was the curatorial work for the extensive exhibition *Challenge* (see exhibition catalogue in appendix 8) that included works from 26 contemporary artists. The research question which guided me was: What kind of artistic activities have the potential of opening up diverse understanding and experiences of sustainability among museum guests and student teachers? In my reflections, I combine findings from both the art-based approach (ABR) and the action research (AR).

In the pilot year 22 students were enrolled on the course Art and Education for sustainability (A+EfS). Many had enrolled because of the economic crisis that hit Iceland in 2008 and many students were half finished with their degree and trying to finish. It was a very active group with a few well-known artists and designers with strong artistic identities. Another strong factor from the start of the year was the domestic fame of some of the participants. It created some power issues which became a significant learning experience for me. I have always tried to focus on equality within the student group where all voices have equal power. There were also people in the group who had developed a very strong interest in a green lifestyle, and some of them were environmental activists and people that were active in the demonstrations against the government in connection with the economic crisis. Having this active group gave me a positive but challenging start.

Through my ongoing data collection I realised that in the pilot year I focused too much on knowledge transfer using a traditional lecture format. I changed the format to facilitative methods, focusing on creating settings in which the students related to each other, their background and their environment, and also related to me as a learner as we sat facing each other in a circle or semi-circle. Often I broke the group up into smaller groups when working on projects. This way I created a student-centred atmosphere, focusing on each individual in the class. This changed my role to that of a facilitator and learner, working with the students. This is in accord with Biesta's (2010) emphasis on the need to approach Dewey's ideas in a new way, where learning by doing does not require generalisations, but rather discovery and being literate about the different elements of society. An emphasis on discovery was highlighted in the workshop in the garden (WIG), when the group selected different elements which they looked at from different perspectives. Sometimes these elements were societal phenomena or sometimes natural elements that the pupils found were a starting process. In some cases the student teachers used both methods.

The WIG is in harmony with findings that indicate that teachers should build students learning on their natural experiences including their personal interactions with nature. When the learning builds on their experience and activities in environmental settings it is more likely to create long-lasting life experiences. It is not enough for students to be presented with environmental information (Neal & Palmer, 1994).

Since the first year of the research the main pedagogical focus has been on critical place-based education (as discussed in article 1 and 2) under the strong influence of Paulo Freire's pedagogy which relates to reality and to present times. This pedagogy embraces dialogues using methods known from the history of education such as the ideology of constructivism. The phenomenon that characterises my theory of practice includes working with issues of sustainability that are viewed with a critical perspective, but not in a passive way, with the aim of student teachers taking action. This pedagogy embraces dialogues using methods known from the history of education. Pedagogical traditions of constructivism are concerned with the learner and the curriculum, teaching students in every situation based on their prior experience and interest (Cascante, 1995). I am motivated by progressive educators that have been endorsed in the experimental phase of the contemporary reform of education where experience from the discourse of social commitment is considered a pedagogical alternative. In the WIG the student teachers have tried different processes and settings located in the garden, that they have learnt about in the IAA programme. Participatory learning, further discussed in chapter 5, emphasizes working together with others. The students' role is active, as they are expected to take part in decision making and in the learning process, which tends to focus on resolving a joint issue.

In recent years I have given the students an even stronger voice in all the courses I teach. For example, in the A+EfS course, instead of me introducing different artists to them, I give them the responsibility for identifying and presenting them to the rest of the class. They must also connect the presentation to how they would use the selected artists and artworks in the classroom in connection to EfS. This is one of the early tasks undertaken by each cohort. This is also a good way for me to assess each student's interest in sustainability or artists working with sustainability as they select and present a contemporary artwork by another artist. Individual students have interpreted a contemporary artwork and analysed issues within it and the group has worked on finding underlying themes creating connections between them.

I have always stressed that EfS is not a subject but a fundamental concern that all humans need to master, emphasising that all learning settings should be designed with EfS in mind. It is important for student teachers to connect to EfS on both international and domestic levels. I have therefore introduced the Icelandic context through the curriculum with an emphasis on Icelandic cases. The 2011 National Curriculum lays out six important issues, one of which is EfS and another is creative work. Other issues are literacy, equity, democracy and human rights, and health and well-being (Ministry of Education and Culture, 2011).

3.1 Global emphasis: UNESCO

I have also tried to develop a global view and when focusing on the international context we have worked from issues emphasised by UNESCO. Their goal is that all education and curricula should be revised, taking into account the goals of education for sustainable development. In our curriculum it says that EfS includes the creation of a culture of shared responsibility where each individual becomes an active citizen who understands his values, attitudes and emotions towards global influences and the equality of all inhabitants of the earth. The implementation of the Decade of Education for Sustainable Development 2005-2014 (UNESCO, 2005) was guided by five pillars. The pillars were:

- Learning to know; i.e. what do we know about sustainability? What established knowledge does the concept of sustainability challenge? What knowledge do we need to work with sustainability?
- Learning to do; i.e. learning to recognize oneself and one's skills in the context of a complex society, giving learners the opportunity to search for patterns, raise their own questions, and construct their own models.
- Learning to live together; i.e. learning the skills of shared responsibility and tolerance.
- Learning to be; i.e. perceiving and understanding one's own actions and emotions.

- Learning to transform oneself and society; i.e. learning to apply systematic actions that affect the sustainability of the community.

Later UNESCO removed the fifth focus point from their agenda. In my research journal (2014) I wrote:

As we have discussed action competence and efficacy in this course [A+EfS] I think it is important that we continue to include the fifth step.

I discussed UNESCO's change with the participants in the A+EfS course and we came to the conclusion that the fifth step is very important for societies that are developing towards more sustainable living. One of the students stated:

I think it is strange to give any discount...with our enormous environmental footprint we need to learn to transform ourselves and our society.

In the A+EfS course we discuss how sustainability is affected by a range of environmental, economic, cultural and social factors, which may interact or overlap with each other. Changes within one factor can affect another and change can only be sustainable if it takes into account all these factors (Hawkes, 2001). Many students have in their artworks reflected on air, water, soil, minerals, fuels, plants, and animals, all of which are natural resources.

When working with the four dimensions of sustainable development in education, teachers need to address economic, ecological, cultural and societal development. It is useful for student teachers to discuss this in learning about pedagogical approaches, creating settings for reflections on citizenship and the creation of resilience in flourishing communities (Santone, Saunders & Seguin, 2014).

The artworks in the exhibition *Challenge* offered a range of interesting situations in the context of sustainability and raised questions regarding man's connection to nature. Context and knowledge are necessary in order for us to participate in countering the dangerous consequences of man's unsustainable behaviour and its negative effects for future generations. The exhibition gave an overview of different issues related to sustainable development. In order to show the potential of art in (1) working with different concepts of sustainability, (2) developing and maintaining technical knowledge, and (3) working with sustainable material, I included works created by 26 contemporary Icelandic artists. (See exhibition catalogue appendix 8.)

I selected the title *Challenge* for the exhibition because I wanted to challenge the museum visitor to try to think of an answer to the two questions: What is sustainability and what are some of the challenges to becoming sustainable? What are some specific challenges to sustainability that I can influence?

3.2 Organising the exhibition Challenge with the Relational Assessment Tool

When organising the exhibition, I used the tetrahedron relational assessment tool (Wood, 2013) to understand my practice and make sense of it through theories of education for sustainability and theories behind learning in a museum. To make my findings and thinking visible I used the processes of seeing, thinking and wondering (Ritchhart, Church & Morrison, 2011) to select each artwork.

Using the relational assessment tool (figure 3.1) reminded me of taking notes on the local ecology and how I had to include elements that would allow the diverse museum visitors to make sense of their experience. The focus was on the context of EfS at the same time as I created settings for the visitors to see think and wonder. The tetrahedron also helped me to design and organise the exhibition activities where I took notes from known museum educators but also thought of Freire's theories when questioning if my approach was truly a democratic process. In my activities I aimed at bringing multiple voices together, seeing things from multiple perspectives, dialoguing, discussing, debating and creating. One of the museum learning approaches that influenced me was the *Piensa en Arte* which is a methodology that is influenced by Freire. It combines the use of different tools to make personal connections to the artworks, including questioning as a strategy to mediate the conversation along with relevant information related to the art (Education departments at Wheaton, 2008).

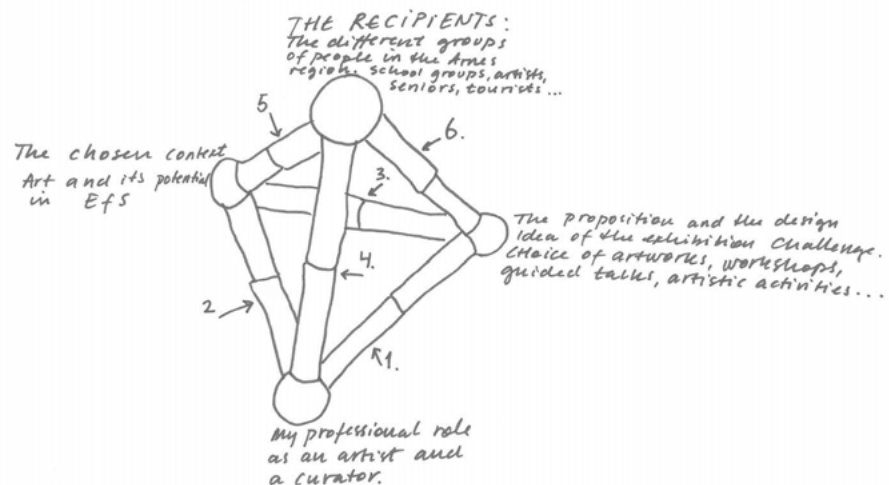


Figure 3.1 Relational assessment tool: The design of the exhibition Challenge, 2015

When organising the Challenge exhibition six concerns guided my way. The concerns arose from the application of the relational assessment tool in figure 3.1.

The concerns are marked in numbers 1-6 in line with the tool's relations between each point. Those same concerns have also been valuable when writing this review and evaluating my processes:

1. How can I develop different activities within the exhibition that offer participation and engagements that will deliver a good overview of the concept sustainability? What elements should I include and what styles and approaches are relevant?
2. What do I know about the concept sustainability that I can share through curating an art exhibition? What are the themes I need to tackle? How can I select artworks that provoke curiosity, raise questions of values and ethics? What kinds of work connect to self-identity? How can I manage the exhibition so it becomes a resource for visitors?
3. What kind of environment could be created within the museum that includes its possible environmental, social, cultural effects on sustainability? What kind of impact can it have within and beyond the preparation?
4. What kind of relationship can I form with the general museum visitor? How can I use my communication skills and show interest and empathy? What can I do to foster originality that can activate the potential visitors' interests?
5. Why do the museum visitors need to learn about sustainability? What do they need to know about sustainability? How can I develop settings that are useful for the diverse visitors of the Arnes Art Museum? How can the exhibition show new perspectives of sustainability related issues and how can it deliver opportunities to the visitors? What is needed for the different groups that visit the museum?
6. What kind of activities are interesting for the diverse groups that visit Arnes Art Museum? How can the activities provided include creative opportunities? Do the activities interest the stakeholders and develop a new worldview and perspectives on sustainability?

I began to write down all the relevant questions I wanted to work from in the exhibition. I created a mind-map and concept-map around the themes of sustainability and all the works were connected to wicked problems (discussed in article 3 and 7). I created few questions that reflected on my search and prepared laminated sheets and glued them to the walls in the workshop space in the Arnes Art Museum.

- How can you make a difference?
- How can artwork encourage us to approach issues of sustainability from new perspectives?
- Is nature making sacrifices for economic growth?
- What is the connection between knowledge, place and time?
- How can we respond to changes in our environment?

- Do we respond rapidly enough to scientific discoveries?
- What impact does our lifestyle have on the natural environment?
- What do we find natural to buy, renew and destroy?
- What sacrifices are we ready to make for our own consumption?
- How much hospitality do we want to show foreign industrialists when they seek cheap electricity? Who is responsible for sustainability?
- What is value?
- When are we profiting and when are we loosing?
- How can we create a society characterized by solidarity?

Creating a concept map for the exhibition was similar to an exercise in the A+EfS course I have assigned to the participants, since year 3. At the end of the first session each participant got an A2 sheet to create a concept map reflecting on his / her knowledge. After each session each participant continued to add to the map. That way they could visually appreciate their accumulation of knowledge. At the end of the course it was a useful tool for evaluating the learning progress. I encouraged the student teachers to explore artworks that aim at showing how sustainability is affected by a range of environmental, economic, cultural and social factors, which may interact or overlap with each other. We discussed how changes within one factor can affect another and change can only be sustainable if it takes into account all these factors (Hawkes, 2001). When selecting the artwork for the exhibition *Challenge*, I followed the same procedures.

Some of the works exhibited deal with how nature and natural resources are invaluable, providing services that humans cannot live without and need to share. Caring for resources could be considered the foundation of a sustainable society. In such a society one's living standards are not achieved at the cost of others, nor does it reduce opportunities to improve living standards (Orr, 2003). Sustainability becomes the struggle for a balance between the good life and the integrity of nature. Such struggles can result in human actions coming into conflict with nature and exceeding the earth's environmental limits as a result of an overemphasis on the "good life" (Giddings, Hopwood & O'Brien, 2002; Háskóli Íslands, 2012; Hopwood, Mellor & O'Brien, 2005; Sampford, 2010). This is why in the IAA we focus on the importance of not exploiting natural resources beyond their capacity to renew themselves. This is a concern many artists reflect on in their work and the student teachers have done the same in their final artistic reflections.

Other works reflected the human footprint on the environment due to society's demands for increased economic growth and more production of electricity. Some question the fast growing tourist industry in Iceland and the effects of increased pressure on the natural environment. Two of the works present clear references to nationalism and invite the viewer to ponder the directions in which society has developed and the increased emphasis on the myth of the 'pure nation', as well as the emphasis on cultural stability.

There were some constraints on the collection I could assemble. I had limited funding so I could not use my budget to pay artists for their contribution. I got a positive response from the National Art Gallery and the Reykjavík Art Museum to borrow artworks from their permanent collection for the exhibition. I used key words when I went through the archive databases. I also analysed all discussions in art critiques dealing with those issues resulting in my selection of artworks. The results of my findings were presented in the exhibition *Challenge* and are discussed in the catalogue that was published in connection with the exhibition (appendix 8).

All the works included in the exhibition *Challenge* were linked by the idea of promoting viewers' understanding of their joint personal responsibility (Kagan, 2012; Macdonald & Jónsdóttir, 2014). In the workshops and during the guided tours, environmental issues were discussed from the perspective of society as a whole, stimulating cultural awareness by creating settings where visitors had opportunities to participate in public life and culture.

One of the workshops offered in connection with the *Challenge* exhibition was related to our connections with different places. This was a two-hour workshop aimed at capturing a memory of nature and which focused on empathy for the natural environment. The workshop included a discussion of the works. In the A+EfS course I worked with the student teachers on similar exercises. In the museum setting the participants created collages using available images and materials but in the course they had more options for selecting different materials.

After looking at the exhibition and discussing the artworks with the guests, we sat around a table and I asked them to place themselves in as comfortable a position as possible. I asked them to close their eyes if that felt good or to look at a spot on the table if that felt better. It was interesting to see that the participants were quick to select a place. In the A+EfS course I gave them a week to think of a place and asked them to visit the place before the next class. This would be interesting to explore when I run the course next and see if it makes a difference to students.

I asked the museum guests to visit a place in nature that had significant meaning to them. I led them through a journey, asking them to remember the smell, the texture of the space, the sound and the movement. I asked them to think of the feeling of being in that place and the colours that came to them. In the museum we only used our imagination, but in the course setting we reflected on those sensory feelings through sketching, moulding or moving. After opening their eyes each of the participants described their place without revealing its location. The others responded by connecting to their own memories of a similar place.

The next step was to create a guardian angel or a superstar that had the task of protecting the important place selected by the participants. After completing the artwork the participants displayed their creation and explained each element they had selected and the others responded, often reflecting on their own experience (figure 3.2).



Figure 3.2 Participants at the workshop creating a guardian angel and a superstar

Since we had looked at the exhibition before the museum workshop many of the participants' creations were under the influence of the artworks. In discussions about their experience the participants said it was helpful to have the reflections of the Icelandic artists in their mind. One of them, an art teacher said:

This was like being in an exercise designed by Eisner. We discussed art history, aesthetics and our values and we also created some art. Isn't that what we are supposed to do in discipline based art education?

When doing exercises like this one in a museum, guests and student teachers indicated that they gained new understandings of their place. The visual image is a dynamic part of our life and culture, and has layered meanings and a great influence on our life (Sturken & Cartwright, 2009).

At the end of the A+EfS course we discussed the learning process and whether or how the student teachers' interests had developed through the course and whether they connected their new knowledge to their prior experience and wishes for the future. Many of the students mentioned that they thought this exercise worked well to increase their environmental literacy. One of them stated:

It was strange when I was doing this exercise with another student because it was like we were talking about different places through artistic expression and I completely understood his place, and he mine, and why they were important to us. I experienced his place through my own memories.

The visual approach I had chosen not only provided pleasure and enjoyment, but

also enabled the student teachers to gain deeper insight and awareness. In this sense, a place-based approach becomes useful when working with this kind of visual knowledge. The artistic approaches differ every year, sometimes we make small books, other times we have created a poster but always using the senses to experience the place. In final responses one of the students wrote:

This learning process connects our history and our place, learning is dependent on time and place, a holistic site-specific approach where everything connects. I use it in the school where I teach, the neighbourhood, the city, social sustainability, etc. ... Knowledge lives on, if we honour traditions. When reclaiming traditional values through place-based learning I think we get better attention... involvement.

3.3 Activities and workshops

In connection to the *Challenge* exhibition at the Arnes Art Museum I created settings where visitors could spend time discovering contemporary art together in workshops and through different activities. In one of the exhibition rooms I created an ongoing art workshop where visitors were offered a gateway to the exhibition. The space allowed the visitors to engage with art in concrete ways. Kids and adults experimented, played, and created as they made connections between their own creative explorations and the ideas, tools, and techniques they encountered in the exhibition.

One of the works had a place-based focus. The artist book³ *Our Nature – My Wishes for the Future* (figure 3.3) created by me was a participatory work that provided a context for dialogue about the art exhibition as a whole between young people from the south of Iceland and the exhibition's visitors. About 200 students offered strong connections to their own lived experience and were given an opportunity to freely express their opinions, allowing each and every one to develop his/her position on issues by listening, reflecting, exploring and assessing arguments. For me the artist book creates conditions that have the potential to empower communities (Freire, 1970) and strengthen the public's awareness of environmental issues, and of the influence that the public, through civic action, can have on the decisions of those in power. It was Freire who systematically started to use terms empower, empowering, and empowerment in connection with his work and since then they have frequently been used in educational practice and research (Gadotti, 1994).

Before I created the artist book I looked at how this had been done in other

3 Artist book (or art-book) is a work of art that utilises the form of the book. They are often published in small editions, though they are sometimes produced as one-of-a-kind objects.

museums and reflected on my own experience in 2014 when visiting the Stedelijk Museum in Amsterdam where drawings, collaboratively made by visitors while present in the museum, were on display.

Together the young students created a collective voice of their wishes for well-being and sustainable development. The artist book had two aims. One was to create a space in which art could fuel their interest in those elements of our society that might be improved, and which improvement might lead to sustainability. The other aim was to create conditions for a dialogue on the exhibition as a whole, between the young people and museum guests. This idea is inspired by the philosopher Bourriaud (2002) who sees artistic practice as a process that always entails making connections between people.

In the workshops some student teachers from the A+EfS course took part in the 3-2-1 'Bridge' methodology that we often discuss in my courses at IAA. This is a routine for activating prior knowledge and making connections (Ritchhart, Church & Morrison, 2011). We asked the students to uncover their initial thoughts, ideas, questions and understandings about issues I had shown them in the exhibition. Then we connected these to new ways of thinking about the topic. With this approach I shifted the focus on their learning in a new direction to the present moment and the future. Whenever some of the students presented new information we created bridges between the findings and that created the potential of making a bridge between new ideas and prior knowledge.



Figure 3.3 The installation *Our Nature - My Wishes for the Future*, 2015

By inviting people to take part in the project my purpose was to foster a sense that art can be a dynamic part of our lives and this allowed the participants to actively connect to their own environment and lived experience. This is a way to counteract what Freire (1970) calls the banking concept:

Instead of communicating, the teacher issues communiques and makes deposits which the students patiently receive, memorize, and repeat. This is the “banking” concept of education, in which the scope of action allowed to students extends only as far as receiving, filing, and storing the deposits. (p. 58)

The pedagogy of the art book invites a true dialog as the students become the final authority on their opinions. In the real world, this is helpful when fostering a society of enlightened, open-minded and independent persons. Freire explains:

In problem-posing education, people develop their power to perceive critically the way they exist in the world with which and in which they find themselves; they come to see the world not as a static reality, but as a reality in process, in transformation.

When creating the artist book (figure 3.3) I asked myself what happened when someone creates something that is in their mind or expresses their ideas or feelings? The most important thing for me as an educator is that the creator becomes more powerful, when they have their voices heard. They obtain power over things that is beyond their immediate reality. This transformation on the individual level has the potential to influence others in the community, like family and friends. In the case of the work in Árnas Art Museum it can influence all the museum visitors. Participating in an act of creativity enabled the young people to feel and think beyond their immediate reality and outside their usual capacity.

Although the dialectical relations of women and men with the world exist independently of how these relations are perceived (or whether or not they are perceived at all), it is also true that the form of action they adopt is to a large extent a function of how they perceive themselves in the world. Hence, the teacher-student and the students-teachers reflect simultaneously on themselves and the world without dichotomizing this reflection from action, and thus establish an authentic form of thought and action. (Freire, 2008, p. 252)

The focus on fostering resilience among the pupils, through interdisciplinary learning, resonates with Ingold’s (1993) ideas of the discourses of the global environmental change in relation to human actions. He argues that there are many signals of separation between humans and nature, stressing the importance of connecting to lived experience. His theories suggest that the reason for the disconnectedness is in many ways the depiction of the environment as a set of issues, global in scope and physical in origin, a configuration that remains detached and abstracted from everyday life. Further discussions about the work *Our Nature – My Wishes for the Future* can be found in article 5.

Closed workshops were also offered for schools providing diverse approaches to EfS, by creating artistic activities that aimed at understanding how natural,

cultural, economic and social systems work and are interdependent. With these activities, the Árnas Art Museum focused on the integrating role of promoting and implementing sustainability in Icelandic society. The museum concentrated on building more vital links with its surrounding community, becoming a place where conversations happened and through which change was incubated.

When organizing the workshops Elliot Eisner's (2009) principles were kept in mind, making the setting a means to reconceptualise personal identity as well as connect to culture and society—to engage with the values of others and to participate and contribute through embodied knowledge. Different forms of knowledge, old and new, became a focus of the workshops. Indigenous knowledge was explained as local knowledge – knowledge that is unique to a given culture or society. Different artefacts were looked at and their common aspects were discussed and considered. The creators based their work on knowledge from their own peculiar background, experiences and prior understanding with the hope that it would lead to something good. The participants in many of the workshops were asked to reflect on the artworks in the exhibition and to create an artefact that could help them remember their hope for a better world with greater empathy, equity and tolerance. One of the visitors, an art teacher remarked:

This exhibition has stayed with me ever since I saw it. I think it is great when artwork reminds you of who you are and helps you to sharpen your values in life. When organizing my teaching for this term, this exhibit was on my mind.

One of the participants in the A+EfS course offered a workshop that reflected on the world's over-consumption of plastic. The participants discussed plastic consumption in society and reflected on the negative consequences of over-consumption. The participants, who had all been asked to bring with them used 'worthless' plastic bags, learned a technique to iron together many layers of old plastic bags and left over fabrics. From the new fabric they sewed multipurpose bags, most of which the participants aimed to use as grocery bags. One of the participants noted:

It was amazing how everyone that participated and had brought in worthless plastic bags that normally would end up in the garbage started to think of them differently. They all wanted to take them back and use them. When I was organizing my teaching for the fall semester I drew from this idea where I have my students use this technique to create bags that we will sell for charity. This also strengthens the concepts that our actions matter. (March, 2014)

Most of the workshops were designed for a maximum of fifteen people to create an intimate atmosphere using a circular table that gave the participants a sense of equality.

3.4 Tacit knowledge

When discussing unconventional approaches in learning I have often discussed the importance of tacit knowledge with the student teacher (article 7). Many of them have described their experience in the WIG as learning by doing. Many referred to their experience as hands on and considered this week as one of the greatest impacts on their learning in the course, empowering them as teachers. This experience included exploring, investigating, creating, and learning new skills, which connects to Freire's pedagogical concerns. These are characterised by respect and humility fostering a condition of trust and communication between teacher who also learns, and learner who also teaches (1970). This acknowledges diverse understandings of the world including 'common sense' which constitutes a knowledge no less important than the scientific knowledge (Darder, 2002).

The variety in the projects allowed the student teachers to learn from each other. Some said that this experience reassured them that they were capable of repeating it once they became in-service teachers. Some were still afraid it would be difficult to do this alone with a whole class. One of the students stated:

I think we all wanted to get the children to be confident and have lots of self esteem, and be able to be independent and connect to the natural environment when working with us. We all focused on the raw material and the sensuous experience, we just used different ways to do it. (April 2014)

The focus is on the process rather than the final product. This corresponds to Ingold's (2011) ideas of focusing on alternative ways of working with materials, on being part of the materials, learning to appreciate their quality and possibilities rather than translating from the virtual to the actual.

To prioritise process over product, and to define the activity by the attentiveness of environmental engagement rather than the transitivity of means and ends. Whereas the building perspective sets the maker, as a bearer of prior intentions, over and against the material world, the dwelling perspective situates the weaver in amongst a world of materials, which he literally draws out in bringing forth the work. ...I hoped to shift anthropology in general, and the study of material culture in particular, away from the fixation with objects and images, and towards a better appreciation of the material flows and currents of sensory awareness within which both ideas and things reciprocally take shape. (Ingold, 2011, p. 10)

The focus at the WIG and the concentration of the participatory work and the workshops that were part of *Challenge* are in line with the attention to tacit

knowledge I have introduced in my courses. The key to acquiring tacit knowledge is experience. Without some form of shared experience, it is extremely difficult for people to share each other's thinking processes and the knowledge they have developed. Giving the student art teachers space to try to work with progressive teaching methods with pupils is a Freire pedagogy (1995) which advocates the local school give the students time, which is a much needed commodity. This allowed the students to acquire real comprehension within their local environment. It is in a project like this where tacit knowing is developed.

I think the projects with the best outcome had experienced teachers with great self-esteem, and were willing to allow the students to do lot of experiments. (Assessment from student teacher)

The most independent students were active learners, they did everything themselves and did not rely on us too much. (Assessment from student teacher)

From my notes and from the assessment given by the student teachers after their experience at the WIG, I see examples where the participants experienced the essence of action competence (Mogensen & Schnack, 2010a). They saw how they themselves and the pupils developed tacit knowledge that derived from the notion of 'action'. The concept and experience of tacit knowing is important to the understanding of how students learn and it is important for me to create settings for the student teachers to try out, rethinking teaching strategies since their main experience is in line with what Freire called the banking concept (discussed in chapter one). The Reykjavik Botanical Garden became a place with sources of wisdom, and through the projects participants rediscovered a collectively and dialogically restored spiritual dimension of well-being (Ball, 2002).

A number of student teachers have used the term 'real life' experience to describe aspects of the WIG and the collaborative project in the A+EfS course, and how their actions impacted the pupils' learning. This included being outside in a natural place, responding to natural elements and reflecting often on real-life situations. This is in line with the focus on working with problem-oriented approach when 'action competence' is applied to education (Mogensen & Schnoack, 2008).

Pupils responded to the material qualities of different places using tacit knowledge. According to the pedagogy of Dewey and Freire, the way we learn relies on us connecting to something we already know. Tacit knowledge requires a synthesis of previous experience into the inner workings of the mind and memory (Polanyi, 2004). Regardless of the pupils in the WIG being conscious of the importance of their participation, their mind holds on to that experience and becomes knowledge that they can utilize in the future, potentially using more creative approaches when solving their assignments.

The student teachers have also connected their experience to the importance of integrated learning. Many of them, as well as the in-service teachers from the

local school, have described the learning that takes place in the Reykjavik Botanical Garden as connecting aspects of the school curricula with what happens in classroom activities and how that must have impacted student learning.

Tacit knowledge includes knowing through the senses. My critical friend Guðbjörg Jóhannesdóttir who wrote about aesthetics in the exhibition catalogue *LOOKING back - around - forward* has pointed out the importance of thinking of EfS in relation to the touchstone of human values, the perspectives of aesthetic perception.

This means that this type of human experience gives us access to perceive the world and ourselves as part of an interdependent system. It is one thing to know things scientifically through scientific ideas and concepts, but another thing is to perceive, to know through the senses as embodied being. This knowledge of ourselves as beings that are related to the environment must also be accounted for in our systems of decisions making by listening to the stories we tell of our aesthetic experiences of relating to the landscape... The aesthetic experience of beauty thus can become a deeper experience that not only gives us pleasure but also helps us better understand our place in the world and our relations to the environments we dwell in. (Jóhannesdóttir, 2016, p. 196)

This is what the WIG project aimed for and is discussed in article 7.

3.5 My own experience

Not only has the WIG been a new and valuable learning experience for the pupils and student teachers who only went through it once, but it has also been valuable for me. I was the only person from the group who has been through this experience for four years, and here I mention a few particularly significant experiences.

3.5.1 Time

The WIG has convinced me of the importance of giving sufficient time to evaluate what is learned. Here I refer to both the student teachers and for them to evaluate with the pupils. That creates space for supporting and deconstructing what students see and experience in the WIG. The 11-12 year old pupils' experiences are very diverse:

I sometimes get very tired in the classroom because I have to sit the whole day and use my indoor voice. It was nice that I did not have to think about that in the Garden.

I liked how I could decide what material I used and how I used it.

In the WIG we have so much more space to think and learn.

Our group was the best group because we spent all the time outside, we did not go into the greenhouse.

I think this was more like playing then schooling.

Ingold has discussed the importance of experiencing learning and knowledge through art practice. In connection to writings about technology, art and craftsmanship, and in relation to playing music he stated:

This is not to say that I cease to be aware, or that my playing becomes simply mechanical or automatic: quite the contrary, I experience a heightened sense of awareness, but that awareness is not of my playing, it is my playing. (Ingold, 2000, p. 413)

3.5.2 Experiencing trust

Since the third year of the research I have asked to have no more than 12 students on the A+EfS course. In the cases where the group has been small, many of the students have mentioned the importance of trust since the group discussions were designed to draw out personal experiences. The larger groups have on the other hand noted how great it is to have very diverse perspectives. Smaller groups have allowed me to create the important student-centred atmosphere I am seeking where all the participants have a strong voice. The teaching strategies engage the learners and help them use their curiosity and energy, which was harder in a larger group. Before I gave each cohort the final design of the syllabus, I conducted interviews with each student so I could situate the context for each individual in the cohort. The course also drew on student teachers' experiences when clarifying concepts, and the activities were designed so they could make comparisons, categorize information and discover answers on their own. In order for this to happen the syllabus was flexible enough to include exercises based on the student teachers' discoveries.

Assessment methods have developed towards more self-assessment even though some of the core assignments have lived on from year 1 to 6.

Throughout the whole period of this study the student teachers have developed a wide range of interests through these activities. They have connected sustainability issues to something they thought of as important in history, politics or values, and to virtues in their everyday life. This way contemporary artwork has served as a departure point for the participants' own investigations. This is in line with the discussions in chapter one on how educational opportunities can arise when the content of artwork is about issues relating to sustainability.

Changes have been made in required reading materials throughout the years. In the beginning the students were required to read a lot. The core book was *Sustainable Education* by Stephen Sterling (2001) as well as many articles.

In recent years I have selected only a few core readings but have created on the course webpage a databank with diverse articles that the students can choose from according to their backgrounds and interests. They also chose to watch TED lectures and YouTube videos taking notes from acknowledged scholars in the field of sustainability.

Once I had given the students more freedom in selecting the reading material and more diverse information about sustainability came into circulation, the discussions were more complex, for example, reflecting on statistics related to environmental issues that are hard to understand. It is good to be able to connect such finding, to images and artworks. Humanity is faced with a flow of information of a magnitude to which ordinary people cannot react to and do not know what to do with (Orr, 2002). I have found it useful to work with metaphors and visual interpretations with students in order to create settings for them to understand the complex issues of sustainability.

In the A+EfS course when working with artworks from contemporary artists and through their own art creation the students have noticed how works of art with a clear focus might help viewers to understand their world better. Through critical discussions I have encouraged student teachers to think about different ways of knowing and modes of working as well as questioning decisions, rather than merely receiving them. We have discussed how one can learn through making and also how art can be used to express one's own thinking processes and findings. We focused on working on assignments that take place outside the academy and then on comparing these experiences. In this context, one of the students said:

It was important to learn by doing something and experiencing it rather than just hearing about it (December 2015).

During the pilot year I organized a final art exhibition for the course. I obtained permission for setting up an exhibition at the Iceland National Gallery. It was a great surprise to me when many of the students resisted but I respected their perspectives. Some of them claimed that it could ruin their career as artists to take part in an exhibition in the National Gallery exhibiting a work created out of their ordinary context. Instead we set the exhibition up in an experimental space called *The Universities' House of Ideas*⁴. This was a perfect venue for the exhibition and the students were happy with it. But this conflict made me realise that I should not organise an open exhibition for students' work without consulting them first. This

4 The Universities' House of Ideas was founded in 2009 as a reaction to Iceland's economic crisis in October 2008. It was a collaborative effort between Iceland Academy of the Arts and Reykjavik University. The House of Ideas was in operation until February 2011 when it closed down due to lack of funding. The facilities were mainly promoted to students and former students, though open to all who wished to work in a creative context and have an opportunity to collaborate with (other) innovators.

conflict reminded me of the importance of dialogue. I had fallen into the traditions of higher education of treating knowledge as static and disembodied, as a product rather than a process where students may be detached from the knowledge being imparted. Through this experience I recognised interaction for reflective dialogue as constituting a relationship between the teacher and the learners (Brockbank & McGill, 2007).

Later in this review when answering research question #3 I discuss in more detail how I have created diverse possibilities for students to exhibit their findings in public exhibitions. It has been important for many of them to be able to take part in exhibitions reflecting on diverse issues related to sustainability.

I think it is very important for me to continue to work as an artist. To be able to exhibit among other artists from other universities is very important to me. That way I can both see myself as an artist and as an art educator. (Student teacher)

In all the A+EfS courses we have frequently discussed how little time students are spending outdoors, probably less time than ever before, and many fear that it is changing their sensory development. The student teachers have also discussed the lack of play at the elementary school level and how students' movement experiences are significantly limited as they are in an upright position for much of their day and in their free time more and more of them spend too much time in front of a computer screen. We have also frequently discussed how important it is for students to stimulate and challenge the senses. In Iceland there are also frequent discussions on standardised testing and in the A+EfS course students have mentioned frequently in terms of EfS how the PISA policy does not necessarily connect to EfS and sustainable awareness. A journal entry connected to this noted:

Students discussed again the importance of working with the senses and focusing on aesthetics education and EfS. Many of them have very negative experiences from tests. We discussed how to pass on the importance of careful treatment of the world and all the natural elements in the environment (earth, oceans, wind, and water). AAA wondered what would be the best way ensure the spread of this knowledge. BBB wondered if we had also lost this knowledge, and if we have, are we then able to pass it on. CCC said this kind of knowledge could contribute to another form of learning and actions. CCC is working on her thesis where she integrates an art education project with natural science education (October 2012).

Place-based education in action is for me a very important experience for students. In my journal in November 2012 I wrote:

The student teachers have to understand what sustainability is and how that connects to place, they also have to be able to design structures and

create learning sequences that allowz them to experience how you can work in site- specific setting with students to perceive, interpret, and understand the concept and experience of place.

Many of the students that have developed a strong interest in EfS have written theses that put EfS into action. Many of them have developed strong efficacy for sustainability through their master's theses. In I discuss in article 3 how all former students that have created master's theses with sustainability as a focal point have carried out EfS once they have become in-service teachers.

In many of the courses I teach at IAA I refer to artists that create socially engaged works. They introduce the work in such a way that the viewer should have the potential to make personal connections to the work. To understand the potential of the individual in EfS, I reflected with my own artwork titled *Skúli's Crosses*, on what dedicated individuals can achieve.

3.6 *Skúli's Crosses*

When I create socially engaged works I try to create the work in a way that the viewer should have the potential to make personal connections to the work (figure 3.4).

When organising the exhibition, I soon discovered that I wanted to show work that would reflect on the term action efficacy which is discussed in more detailed in the reflections. In the year 2013 an old farmer, Skúli Gunnlaugsson, had given me a light cross and I decided to make an artwork about his quiet initiatives.

Skúli has crafted almost five hundred light crosses since he retired from farming around ten years ago. The crosses are identical in size but vary in decoration. He has given the crosses to individuals all around Iceland and some abroad. The recipients are people he believes have the potential to share positive energy with the world. Some times when he sees news coverage of people he believes have something positive to give he offers them a cross, but in many cases people have heard about his initiatives and ask for one. With the lights he wants to work towards peace, which is the necessary foundation for well-being in the world. Peace has many aspects such as fairness, tolerance and mutual respect. With the peace light it is Skúli's hope that we unite in working towards finding new and creative ways to encourage understanding, friendship and co-operation towards the wonders of the world, which we have a duty to protect, and, guided by respect for nature and people, take mutual responsibility for our environment.

When creating this work, I explored the thinking routine: connect / extend / challenge. I asked myself how Skúli's initiatives were connected to my ideas of action efficacy, how much I knew about his practice and how much I needed to find out. That gave me some ideas to extend and pushed me into thinking in new directions, questioning what methods I could use to materialise my ideas and metaphors. I decided to start by spending a whole day with him going through the

process of making the crosses. That experience, as well as editing a short video of the process, challenged me to visit as many of the other cross owners as possible to help me put the puzzle together. Throughout the data collection I reminded myself to be true to Skúli's concept and its purity. Semetsky (2009) argues that the creation of concepts occurs in duration through the triadic relationship of *percept*, *affect* and *concept*. In the case of this artwork the perception is focused on the silent act, exhibiting the crosses in their everyday setting providing me with an understanding of the lives of the receivers. The images taken on location and the notes and all the long dialogues represent the effect the cross has had on their owners. When analysing my notes and findings I went through an 'affective astonishment'. This could also be described as a perception allied with my engagement with the matter.

The next step in the process was to find ways to represent my data without undermining Skúli's idea. I wanted to represent him with dignity in order for new concepts or knowledge to form, leaving space for interpretation. After careful consideration I decided to create an installation showing Skúli Gunnlaugsson at work.



Figure 3.4 *Skúli's Crosses* Installation view Arnes Art Museum 2015



Figure 3.5 *Skúli's Crosses* details from Installation, 2015

The photographs show the crosses in their ordinary context all over the country. I placed the photographs of the homes so the crosses are always the same size in all the photos and placed in a horizontal line (figure 3.5).

I wanted to use qualitative conceptualisation of the subject with a desire for narrative identity by offering the viewer ways to explore generous individual driven initiative. I represent the initiative as entangled in the recipients' materiality of the

everyday. I did not want the aesthetics to appear as documentary photojournalism, I desired it to be more abstract so each viewer could easily find a connection, thus still shadowing ethnographical methods. Tamboukou (2008) argues:

What is not actualized or expressed in a [traditional] narrative form, the virtual, the silenced, the non-said, still inheres in what has been said, expressed or articulated, creating the narrative itself a depository of forces that can take it elsewhere, divert it from its initial aim or meaning, create bifurcations, sudden and unexpected changes, discontinuities and ruptures the sequential nature. (p. 284)

In the 4.5 minute long video (figure 3.6) the viewer can see Skúli working on a cross that takes up to one day to make. He cuts the material, welds it together, sprays the metal, paints and adds energy stones as decorations.

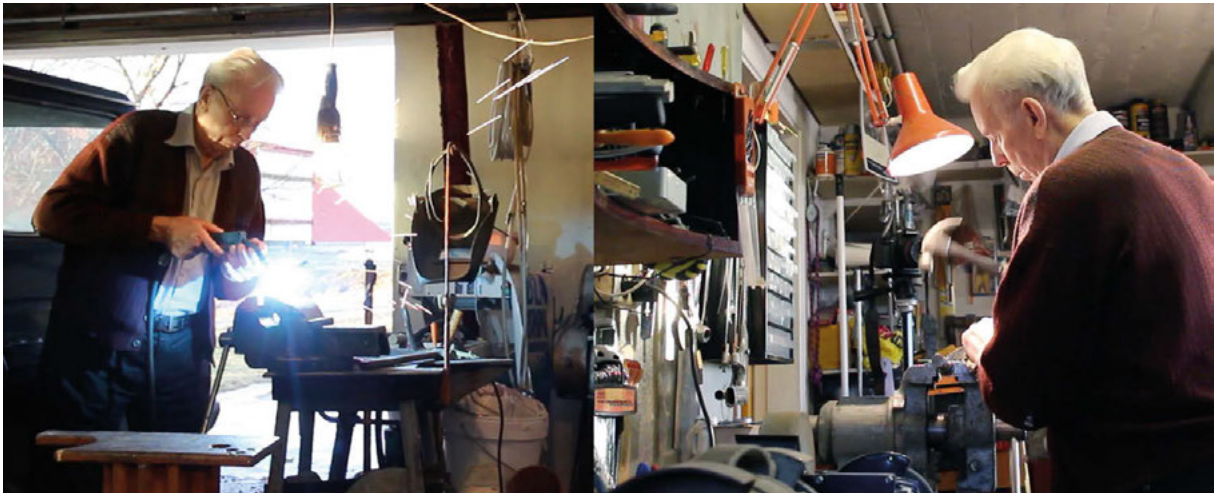


Figure 3.6 *Skúli's Crosses*, stills from video, 2015

For me it was crucial that my methods stay true to Skúli's Gunnlaugsson's methodical creative process, chronicling his quiet contribution to the fight for change.

3.7 The IAA activities in relation to the UNESCO principles

In table 3.1 I discuss the pillars identified by UNESCO (2012) in connection with the context of the IAA courses and the activities at *Challenge*.

Table 3.1

Learning about sustainability through art in the IAA courses with regard to the UNESCO pillars.

UNESCO Pillars -> IAA courses: learning about sustainability through art:
<p>Learning to know Learning to know involves the development of skills and knowledge needed to function in the world. To know the fundamental issues behind EfS before designing and implementing actions towards sustainability. Both through the courses at IAA and in the exhibitions I have emphasised different forms of knowing including tacit knowledge. This is an action that would fall under informative learning.</p>
<p>Learning to do Learning to do involves applied skills linked to professionalism. When student teachers can do they understand that their own actions have influence. It is therefore important to exhibit their work. Whether their work is exhibited on the website of the school or its walls, it will have an influence on those that belong to the school community. When they experience that their work has an influence it becomes more likely that they will select issues that they think are of importance. This is in line with Gonçalves's findings on the potential of art in education: Due to such great and subliminal power, and because art masters and joins the languages of thought and emotions, artistic expression is often used as a tool to better understand otherness and to communicate with the other. In fact, art initiates, fosters and protects diversity and so it can be a universal tool to initiate, nourish and protect intercultural dialogue, while celebrating cultural diversity. (Gonçalves, 2016, p.vii)</p> <p>Through the artistic interventions each person then understands themselves in relation to one another and as a result can reflect clearly on the development being made by the group (Lutz, 2014; Maslow & Herzberg, 1954).</p>
<p>Learning to live together To gain skills in common responsibility and tolerance. When works of art are examined and created it is important to keep in mind that different points of view exist and are of equal importance. The WIG project as well as student teachers' assignments in the A+EfS course aim for transformative learning that involves: becoming critically aware of one's own tacit assumptions and expectations and those of others and assessing their relevance for making an interpretation. (Mezirow 2000, p. 4)</p>
<p>Learning to be In this stage the student teacher has contributed to his/ her mind, body and spirit. The skills include creativity and personal discovery. To know oneself in the context of complicated social contexts and to develop attitudes towards society and the environment. Many works of art deal with subjects that are better understood when discussed. The WIG project is a good example of the procedures of developing attitudes towards the local community.</p>
<p>Learning to transform oneself and society To systematically use actions, which influence a society's sustainability. Through many of the learning sequences and settings at IAA the student teachers have developed efficacy and action competence which leads to action efficacy, where they have used their own knowledge to arrive at informed decisions for the good of oneself and others. In many of the final theses that have included action towards EfS the student teachers have built on their experience from the formal courses and created something new by embracing the potential of art in collaborative culture. They have made settings for pupils where they highlight open mindedness, critical reflections, and inquiries at the same time as they have reflected with joy on how they have learnt from their pupils. That same delight I have experienced though the learning I have experienced when working with the student teachers. To begin, it was very important that the participating school had a good leadership from the principal. It is essential for the change process at a school, because this journey towards sustainability is extremely complex, and requires constant direction and support (Drysdale, Goode, & Gurr, 2009). I believe it has been my fortune to have been able to create a sense of mutual respect and shared commitment to lifelong learning where everyone has agreed on the importance of looking at sustainability as education and education as sustainability, resulting in an atmosphere of trust in our classes. It is through the collective process that a group can speculate on what happens next. This process is vital to the A+EfS course and the project at the WIG, generating inventive involvements and knowledge for the present.</p>

3.8 The independent life of the exhibition *Challenge*

Through my experiences at the Árnas Art Museum I discovered how powerful the exhibition had been in creating a dialogue where visitors expressed their worldviews, emotions and opinions. Many visitors had told me that they understood the term sustainability better after visiting the exhibition and that some of the concepts the artists worked with would be important for a wider audience. When one of the visitors said: “It would be great if the big decision makers would see an exhibition like this” I got the idea of taking this exhibition further. I approached the Permanent Mission of Iceland to The United Nations (UN) in New York and offered them to bring a smaller version of *Challenge*, titled *Art for Actions: Icelandic Art in the Service of Sustainability*, to New York for display in connection with a UN meeting on issues related to sustainability⁵.

In cooperation with the Permanent Mission the exhibition was set up at the delegate’s entrance at the UN Headquarters in connection with a two-week long meeting from 11th to 20th July 2016. The meeting was of the High-Level Political Forum and was mandated to follow up and review the implementation of the 2030 Agenda for Sustainable Development, the first meeting to take place after the adoption of the agenda. Twenty-two countries presented voluntary national reviews of the implementation of the agenda during the ministerial segment of the Forum, held with top level policy makers on the sustainability goals of the United Nations. The meeting was meant to follow up on an agreement made in 2015 where all 193 UN member states approved seventeen new development goals. These targets cover all limits and sustainable ways of development for the whole planet Earth, based on the objective of striking a balance between opportunities for economic and social development while the environment and nature are preserved for future generations.

The Icelandic permanent representative Einar Gunnarsson was pleased with the exhibition and said it had a very strong relevance to exhibit at the UN. Gunnarsson stated the importance of showing cultural and artistic perspectives in connection with this meeting and to the concept of sustainability and responsibility of all towards our environment. In an interview with the newspaper *Morgunblaðið* he stated:

Many of these works provoked particularly interesting discussions on the nature of sustainable development and how best to deliver it in harmony with nature. The work *Skoffín* by Ólöf Nordal is an important reminder of how ignorance can magnify fears towards the unknown and the staff of the permanent mission had many interesting conversations with

5 During the exhibition period at the UN I met with Edward Gallagher, president of the Scandinavia House and we agreed on setting up the exhibition from October 16th - February 13th 2017 under the title Borrowed Time.

colleagues from other countries about the lessons that we could learn from that artwork in relation to the international commitment to assist refugees. Then the work by Hrafnkell Sigurðsson gained special attention since the UN has been specifically discussing plastic pollution in the oceans in the recent past. (Morgunblaðið, 2016, p. 46)

For this exhibition, I also took one work by one of my former master students, Kristín Bogadóttir, who had carried out artistic research looking at everyday aesthetics. In her writings one could see a strong influence from the art and education for sustainability course she took during her study at the art education department. The work complements the exhibition very well.

I recorded audio tours where all the artists discussed their works in 3-5 minutes, as they replied to the following questions:

- What is the idea behind your work and how did it occur?
- How does the work speak to our perceptual experience?
- If the audience is invited to go on a perceptual journey when experiencing the work, what kind of journey is it and to where?

To give stronger reference to the artists I also placed a table by the entrance displaying catalogues and books by the artists.

Art exhibitions are considered off-site when they take place outside the traditional museums, art galleries or other cultural institutions. Showing the *Challenge* exhibition at the UN headquarters confirmed my ideas of the importance of linking different groups. The nature of the artistic gestures had continuity with non-art environments, and went straight to a public that often has little or no direct experience of art, thus democratising aesthetic opportunities. This is in line with Berlants' findings as he suggests:

If beauty is about relation and opening up to the other, the aesthetic realm can be found when we open up to experience objects or environments in a manner that is fully aware of [their] perceptual richness and in which immediate, qualitative perception dominates. (2010, p. 3)

The exhibition at the UN was an action towards sustainable development. Taking the art out of traditional galleries and creating a dialogue with decision makers was the starting point for developing a second exhibition that will be discussed in the next chapter. The different kind of engagement through diverse learning sequences has often revealed how important it is to work with values and virtues in connection with the EfS issues we are discussing each time. I agree with Maruca about the importance of working with values in EfS:

While I agree that the EfS concept is being dangerously used to pave the way to the commodification of 'nature', I claim that it also bears a

unique chance for reframing our very understanding of the relation to what we call nature in a new and refreshing way. The EfS concept can help questioning and reframing the modern ontology of 'nature' and the concept of the 'subject' as opposite and separate from it. However, the paradigm shift the EfS concept might help implement needs a radical process of re-signification and re-appropriation of its meaning against the mainstream interpretation supported by neoclassical economics functional to the capitalistic mode of overexploitation. (2016, p. 143).

After the exhibition had been in the UN, it was moved to the Scandinavian House in New York, where it was displayed under the title *Borrowed Time* for five months.

3.9 Summary

EfS has challenged my role as a teacher educator. My role is to create settings for the students to find the interconnections between things, conveying information that relates to the students. I design settings where students need to collaborate and also where they collaborate with the community using critical reflection. It is important to build trust where everyone takes equal part in negotiating ideas and student driven initiatives (Tilbury & Cooke, 2005). The focus on the student driven initiatives gives the students courage to develop their action efficacy as individuals that act as agents of change.

By connecting scholarly approaches to emotional and tacit knowledge, we work toward an understanding, discussing what causes the unsustainable practices of the planet earth. The personal relevance makes it easier for the students to connect to their own morals and values. I have found the student teachers more enthusiastic when we have used positive methods searching for alternatives to the current situation that lead to unsustainable actions. Such methods focus on creative thinking in solutions for the future, which require a focus on values and holistic thinking.

When I evaluated the outcome of the exhibition *Challenge* I was happy to realise that I had achieved all my goals. The assessment from the external examiner confirmed that I was on the right path as she stated that the exhibition managed to embrace questions of sustainability that were able to raise questions among the museum guests and students. She also remarked that I had shown that art has the potential to make the issues of sustainability understandable through selected art and to engage visitors through pedagogy. The aim of the exhibition was to create settings that would cause the viewers to rethink how they live their lives, and how they prioritise their values. This leads me to the next research question.

4 Values and virtues that promote sustainability in relation to the art exhibitions

Sustainability has been part of my thinking for many years, but just as new ideas materialise / come about in developing our understanding of this phenomenon so do my own ideas change. Curating the exhibition *Boundaries and Bridges: Creating new roles for old traditions* (see exhibition catalogue in appendix 9) at Harpa during the Arctic Circle conference in Reykjavik 2015 marks a turning point in the study. The exhibition included works from 16 contemporary artists that all in some way reflect on values and maintaining traditional knowledge. With this exhibition I took art into a professional and academic community that was accustomed to dealing with sustainability. In this chapter I reflect on how and why I have used artistic actions in connection to values and virtues in my art, exhibitions and art education. The research question which guided me in this chapter was: How and why have I used artistic actions in connection to values in my art, exhibitions, and art education?

All the UNESCO principles (2012) however, that have been discussed in relation to the RQ#1, in chapter 3, seem to be timeless and can be achieved in many ways including through studies in visual arts. The principles enable students to develop their own ideas based on values and a vision for the future from their own

experience as discussed in the reflection on RQ#1. Values are the principles and fundamental convictions which act as general guides to behaviour, the standards by which particular actions are judged as good or desirable (Halstead, Taylor, & Taylor, 2000).

The Icelandic national curriculum (2013) takes a strong stand on the value of general concerns such as democracy, health, diversity, equality and creativity. About caring for the environment it says:

The environment and thereby nature surround human society. Sustainable development cannot take place, except within the limits that the ecosystems of the earth draw. Therefore, understanding of these limits, in addition to the processes, laws, and cycles of nature, is an important basis for successfully working according to the ideals of sustainable development. Thus pupils have to know, understand and respect nature, both because of its intrinsic value and because of the service it renders mankind. Environmental protection, climate change and biodiversity are examples of tasks to be tackled. (p.18)

My professional theory and my focus on values and virtues is in line with the emphasis on participatory pedagogy from the same scholars that analysed the potential of participatory pedagogy (Simmons, Barnard & Fennema, 2010). They suggest that teachers should be open to interaction, thereby enabling the students to have a voice. Participatory pedagogy is explained in further detail in article 7 and in RQ#3. In recent years, as explained when discussing RQ#1, I have paid more and more attention to the experience of the student teachers. I have become more interested in this style of teaching, and been an active participant myself i.e. in the A+EfS by always creating artistic reflections on the course as discussed in article 4.

4.1 What values are we talking about?

Every society has a set of values that are considered a norm. There are some human values that are global such as honesty, fairness and hard work (Holmes, Hawkins, & Wakeford 2011). In Iceland, as among most other Western nations, democracy is embraced and democratic principles are put in the forefront as we can see, for example, in the national curriculum that places democracy as one of its fundamental pillars. In sustainable societies those values need to flourish.

It is considered desirable to be knowledgeable and to be right in one's opinions (Yanow, 2009), but some issues, i.e. like global warming caused by human actions, are on such a scale that it takes time to introduce scientific proof for their existence. There are opportunities in education to work with values that are immediate. Focusing on humility and a willingness to learn with an open mind gives students the potential to figure out what values underpin well-being.

Some contemporary businesses promote values like growth and consumption

that often run counter to community values (Speth, 2008). There is evidence to be found to support that argument, such as when nature is sacrificed for financial optimization. One such example is the building of the Suðurstrandavegur road from Grindavík to Krísuvík (figure 4.1). When the new road was built a unique natural ecosystem in a large lava field was sacrificed. Although proposals were available that emphasized the importance of protecting this unique ecosystem, the Icelandic Road and Coastal Administration still decided to build the road despite its environmental impact. Few took a stand against the decision. People were willing to allow it because it was cheaper to build and would shorten the distance and allow for a wider road that might be easier to keep open during the winter. Ecologists, however, regretted the destruction of flora and fauna that was unique in the world.

In this case, as in many others, it seems like a strong belief in economic growth has become the golden value. Those values can hinder efforts toward sustainability (Speth, 2008). It is therefore important to develop values among students from a young age, to make sure they develop a sense of sustainability and realize the complexity and interdependency of sustainable development.



Figure 4.1 Suðurstrandavegur where the two roads are drawn side by side. Red line shows the new road and the yellow line is the older road.

It is important to learn to take into an account that societal, as well as environmental issues, are interconnected. And on a Freirean note, students need to learn to take on the responsibility of an informed citizenry. In article 2, different values and virtues are discussed and how they can counteract each other.

4.2 Artists and values

Artists raise the issue of responsibility, pondering and uncovering scenes of oppression with which society would prefer not deal. Questions regarding economic, social and political systems arise, prompting viewers/students to consider the legacy of civilizations that cause poverty, neglect and death of citizens. Seeing in diverse ways sensitizes viewers to abrogations

of rights, provoking imaginations to envision alternate responses. (Goldblatt, 2006, p. 26)

My teaching practice is grounded in the work of critical educational theorists including Paolo Freire. In addition, Zygmunt Bauman, the Polish sociologist and philosopher has ideas that are in line with Freire's as he suggests that educators should nourish pedagogical practices that promote:

a concern with keeping the forever unexhausted and unfulfilled human potential open, fighting back all attempts to foreclose and pre-empt the further unravelling of human possibilities, prodding human society to go on questioning itself and preventing that questioning from ever stalling or being declared finished. (Bauman & Tester, 2001 p. 4)

Many Nordic scholars put a strong focus on environmental awareness through art education. I have been influenced by many of them like Illeris and her focus on aesthetics and environmental protection with a strong relation to values and virtues (Illeris, 2010, 2012a, 2012b). In 2010 she was one of the speakers at the INSEA conference about art education for sustainability that took place at University of Lapland. Her talk about contemporary art and a critical approach in art education helped me to make up my mind to pursue a PhD degree looking at the potential of art in education for sustainability. Illeris emphasised moral education and in her critical approach there are strong connections to values and virtues.

Critical art education aims to change society through a transformative pedagogy based on liberation, creativity and consciousness. This pedagogy aims to counter the growing alienation of working class people engendered by the false idealist myths that form the basis of the capitalist market system. (Illeris, 2012b, p. 81)

In my teaching at IAA I use a critical place-based approach and some of the student teachers have the end of the A+EfS commented on the importance of a critical approach in EfS:

I think teachers should be role models and moral leaders in connection with values and virtues. Thus it is crucial for a critical approach to play a role in the way they act in the classroom. (Student teacher, 2014)

When teaching student teachers at IAA about sustainability, I introduce different artists both local and international. The artists that took part in the exhibitions *Challenge and Boundaries and Bridges* (appendix 8-9) are among the Icelandic artists I introduced. The internationally recognized artists that I introduced all work with issues related to sustainability. Some works connect with visual strategies reflecting on the needs of a community and understanding of the human relationship with ecology and environment, for example: Tania Bruguera and her works that are

politically motivated performances (Bruguera, n.d.); Christo and Jeanne-Claude (n.d.) and their works that create gentle disturbances in spaces to make people become more aware of themselves and their surroundings; Agnes Denes one of the pioneers of environmental art and her artistic practice that focuses on aesthetics and engagement with socio-political ideas (Denes, n.d.); Mark Dion and his works where he examines the ways in which dominant ideologies shape the understanding of history, knowledge, and the natural world (Dion, n.d.); Joan Jonas in her works where she mixes performance with props and mediated images often situated outside in natural environments (Jonas, 2015); Chris Jordan and his works where he explores the phenomenon of American consumerism (Jordan, n.d.); Richard Long and his work, that often response to the environments he walks in (Long, n.d.); Yoko Ono, and her works that focus on peace, performance and participation (Millner, 2013); Gabriel Orozco and his works where he explores philosophical conundrums through random encounters and spatial relationships (The White Cube, n.d.); Ursula von Rydingsvard and her investigations on organic and inorganic materials, for over 40 years she has worked with cedar (Rydingsvard, n.d.); herman de vries and his concerns for the relationships between humans and nature (de vries, n.d.).

Even though I introduce different artist to the student teachers the main focus is on their choice of artists who they think have a strong connection to EfS, because the artists that I introduce are those who have influenced me and my art practice. When the student teachers learn from artists who do socially engaged work and explore how art and design can open dialogue about a community's history, culture, and social needs they are more empowered if they do the research work themselves.

In the A+EfS course I ask the students to introduce artists that they believe add something to our understanding of natural world. I also ask them to consider the connection between culture and our understanding of nature. I ask them to select artists that address values and mankind's relationship to the earth. Their findings became an archive which has also been open to the students in the workshop in the Reykjavík Botanical Garden (WIG).

The WIG is a part of a pedagogical preparation in the teacher education programme. Part of the course takes place in the Reykjavík Botanical Garden and when preparing for that the student teachers discuss different artists and they become directly responsible for putting ideas generated within the community into practice in the WIG. That provides them with an opportunity to design and implement a community-based art project that allows for social transformation as discussed in chapter one. To prepare them for the WIG we discuss how we can use themes and big ideas driven by essential questions to frame the investigation. For them it is tempting to use technique-driven instruction instead of idea-driven instruction. One of the students stated:

I just don't feel like I am teaching them anything... if they are supposed to find how to solve the problem themselves. (Researcher journal 2014).

Many art educators have through the years been concerned about values and virtues. Scholars that have been working with working with values and virtues in relation to sustainability are for example the scholar discuss in chapter one.

These Icelandic artists are discussed in the exhibition catalogues for exhibition 1 and 2. I have also been influenced by international contemporary artists that provoke strong responses, or oppose personal beliefs and challenge societal values. From Allora and Calzadilla, I have learned a lot from artworks that ask questions and that motivate debate. Many contemporary artists aim to mirror the present-day and the community, offering viewers different perspectives and encouraging them to consider current ideas and ways of living. I am moved by the ideology that Allora and Calzadilla discussed in an Art 21 interview:

What is really important about our practice is criticality. We constantly want to question and have our work trigger a possibility of self-questioning and questioning about the world: ‘What is the nature of this thing that’s affecting me or that’s around me? What is the nature of my actions upon others or the place where I am at this moment?’ A lot of our projects are an opportunity to learn something about an area or an interest that we didn’t know much about, whether it’s abstract or philosophical or pragmatic. It’s always a chance to learn more about something in the world, and to formulate some kind of a response.
(Allora & Calzadilla, 2009)

Alfredo Jaar (Jaar, n.d.) and his works that are usually politically motivated, showing representation of real events sometimes with a certain level of viewer participation is an approach that I would like to practice. Carrie Mae Weems (Weems, n.d.) had a great influence on me as she uses mixed methods of employing photographs, text, fabric, audio, digital images, installation, and video when investigating family relationships and cultural identity.

In the WIG, in a local setting, the student teachers introduce diverse artists to prevent pupils starting to copy one of them. Instead they encourage the children to consider how contemporary artists get ideas and how they get inspired. Before they start to work they are encouraged to discuss their ideas and what they want to express. Many student teachers have started with brainstorming exercises to help with developing an idea.

The Botanical Garden is a great local setting for place-based learning. As discussed in article 1 it is important to focus place-based education on students’ and teachers’ experiences, so that the places create meanings for educators, students, and citizens in tangible ways. Place-based education, therefore, bridges the gap between scholarly discourses and practices and the living world. With place-based education teachers and students get first-hand experience of local life, which gives them the potential to understand the political process taking place and hopefully to have some influence on it. We need to focus on the local and understand it if we

want to transform it (Greenwood, 2008; Gruenewald, 2003; Gruenewald & Smith, 2008; Stevensen, 2008).

In the WIG project the aim was to engage the student teachers and support the pupils' agency by developing learning settings with their local natural environment based on sustainability with a focus on social responsibility, action competence and the development of efficacy. Student teachers expressed the importance of having their personal values interact with autonomy when they developed their efficacy.

I feel it is very important to build on what kind of artist I am when I develop my skills as an art teacher. I think it is very important that art teachers have faith in themselves as artists. (Student teacher 2015).

When organizing the assignments for my courses, I value the process during which the student teachers' knowledge and experience is transformed into knowledge of action. Some research on the prior beliefs and conceptions of the student teachers as they enter teacher education suggests that life experiences and tacit knowledge play a powerful role in shaping their interpretation and application within the teachers' programme (Anderson, 2001; Bullough, 1989; Hammerness et al., 2005; Zeichner & Gore, 1990).

In figure 4.2 Lindström explains the knowledge process the student teachers at the IAA go through during their study as they come to the department with a strong identity as artists or designers and aim to graduate with strong knowledge about the issues connected to education. Their task during the two year period is to develop efficacy as art teachers and action competence and to do so they have to form a theory of practice.

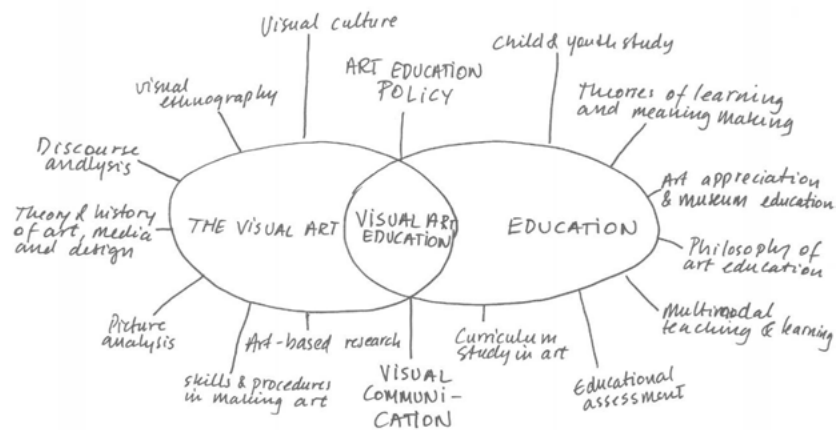


Figure 4.2 Multiple spaces of art education, Lindström, (2011)

Based on those findings and my findings in the action research I create space for both the tacit knowledge (things you can't say in words) as well as the explicit

knowledge (facts). In later years I have had more courage to spend more time on the tacit knowledge. The student teachers knew far fewer facts about education than about art. When working with those disciplines together I found it useful to encourage them to work from both the conscious and explicit knowledge they have in the art field. Then they arrive at assignments with their implicit understanding which is their tacit knowledge.

For student teachers to connect the knowledge of the visual art and their knowledge of learning and pedagogy, it is important to do so in relation to the community and the environment so they can develop the theories they learn into practical knowledge as explained in figure 4.2 (Lindström, 2011). Growing into a professional can take time and teacher educators need to give students space for problem-solving, including listening to stories from other teachers in training. This learning is informal and the student teacher is often not even aware of the learning.

4.3 Respect for the natural environment

Research has shown that to respect the natural environment, it is important to foster a connection to it (Charles and Senauer, 2010; Strife and Downey, 2009). For sustainable communities, it is also important to create settings for their members that need to be maintained and strengthened and to protect their personal connection with the man-made environment in the area in which they live. Therefore, it must be important for schools to create settings that enable the pupils to cherish their neighbourhood or surrounding areas. This is a step towards protecting the quality of life in their local community. Working with metaphors in the WIG means that together the student teachers and the pupils were thinking of the shared long-term future.

The importance of the efficacy construct has been applied to behaviour in many domains including school (Bandura 1997). Bandura distinguished between two kinds of expectancy beliefs: outcome expectation beliefs that certain behaviours will lead to certain outcomes. For example, when working with pupils in the WIG the student teachers might have thought they would improve their performance and try to make the pupils aware of the natural environment and secondly the efficacy expectations which includes the beliefs like when they were working with the pupils they would develop settings that are playful, participatory and interesting so they can become more connected to their local environment, can learn to appreciate it better, and can develop collective value. According to Bandura (1997) it is the individuals' efficacy expectations that are the major elements of goal setting, activity choice, willingness to expend effort, and persistence; these are also important elements when facilitating education for sustainability. Students must believe in their own competence and ability to act. I encouraged the student teachers to think of their efficacy in terms of their lived experience and work with the pupils with respect to their lived experience and interest. To connect to their artistic background, they work

individually with their strengths as artists and educational visions for the projects.

In the WIG the student teachers work in pairs, designing their actions based on the Connecting the Dots framework (Kozak & Elliot, 2014) introduced in article 7. The action competence developed in the WIG activities include collective actions with respect to problems related to sustainability being developed into different activities that were motivated by the pupils. That is having the competence to develop respect and to be creatively intentional on how they are taken up. When joining prior knowledge and experience with the artistic actions, learning about new things or seeing something they knew from another perspective, their knowledge and experience about their natural surroundings become more complex, interpenetrating and harmonious (London, 2014).

In my approach in both the A+EFS course and when preparing the student teachers for the project in the WIG my focus was on encouraging them to reframe their understanding of their connection to nature and how they understand their relationship to the balance of sustainability. I encouraged them to look at their own values in relation to how they understand different concepts of ecosystems and their functions. When they look at different elements within the ecosystems and the shared relations, they can re-evaluate what is a good life and well-being. Those reflections on the natural environment give the student teachers the potential of focusing on what is valuable. Through the different projects at the WIG the student teachers reflect on those values in their mode of an attribute and through the processes and relations. The phenomenological approach creates settings for the learners to interact with the world, working on joint values as the examples in article 7 explain.

4.4 *Lesson from the Geese: Dreaming of collaborative protection of our waters*

In many of the artworks I have created in connection to the thesis I have been influenced by my connection to nature, how I can learn from natural elements and how I am living this work collectively. One of those works is i.e. *Lesson from the Geese: Dreaming of collaborative protection of our waters* (Figure 4.3).

This work is influenced by a dialogue with students about how we humans can learn from nature. It is also inspired by the writings of the late Páll Skúlason (2005; 2009; 2014) on the aesthetic experiences of being in the wild, learning to appreciate it. When reading his writings about how people acquire deeper empathy toward nature if they have learnt to experience it, I thought of the natural environment of the hills and mountains above the farm where I was raised. Nature there is rather simple with no extreme natural elements, but very peaceful with many small waterfalls flowing into the river Grímsá.

Grímsá is a good salmon river, but the part of it in my fathers' land is above a large waterfall so the salmon never reach that area. This leaves it untouched by

tourism and sport fishing. Higher up in the hills are water ponds (figure 4.4) on a flat moorland. It took me many years to appreciate the beauty of the slow flowing waters with its fascinating pairs of swans, since it had always been very hard to pass through this area during the time we herded our sheep.



Figure 4.3 *Lesson from the Geese: Dreaming of collaborative protection of our waters*

But recently, when hiking around the area and knowing that only 3% of all water on the planet is fresh I discovered how much I appreciate it. It is not only because I know all life on land is ultimately dependent on fresh water, but also because this settled beauty helps me to find connection and gives me energy. In this land, as in all others, the freshwater begins its journey in the hills and the mountains. It flows from humble streams (figure 4.4) from all sides of the mountain hills down to two mighty rivers. In the rivers the water continues it travels all the way to the sea. The journey to the sea is not always smooth or uninterrupted. Perhaps too often it has been changed through human action.

Every second masses of water spill down Icelandic waterfalls. In the highlands, there are areas that are colonised by geese and form one of the most productive habitats on the planet. Thousands of geese flock to some of these areas to rest and refuel on their long migrating journeys. This is the end of the rivers' journey as collectively they wear down mountains and carry them to the sea, and throughout their journey this freshwater has delivered life to planet earth.



Figure 4.4 The highlands in the hills above my childhood home

Lesson from the Geese: Dreaming of collaborative protection of our waters (figure 4.3) reflects on empathy in its diverse forms. Every fall thousands of geese fly from Iceland to the south to escape the cold winter. Geese have discovered that they can reach their destination more quickly and with less energy expended when they fly together in a V-shape formation, but with rotating leadership. The goose flying in the front of the formation has to expend the most energy because it is the first to break up the flow of air that provides the additional lift for all of the geese that follow behind. This rotation of position happens many times in the course of the long journey to warmer climates. By the same measure a team of humans is functioning well when all members of the team actively contribute with their expertise, experience and different perspectives. Consequently, in good teams, everyone has the opportunity to contribute and flourish.

Scientists speculate that geese honk to communicate with each other during their long flight. Similarly, when working in teams, it is exceedingly important for each team member to communicate regularly with all the other team members.

Geese help each other. If one goose becomes ill and drops out of the formation, two other geese will fall out of formation and remain with the weakened goose. Likewise, human teams work best when they do more than just work together, but care for the well-being of each other.

This work reflects on the fact that we are a part of the earth's ecosystem, part of all that is alive on the earth and part of nature. That is why every thought we have and every action we take has a direct effect on our well-being. This is often forgotten in our modern society because we have separated our self from nature. This work invites the viewer to pause and think of his connection to inner harmony, to shorten the gap between him and nature in a search for inner balance. To feel as one with the life force.

4.4.1 My relationship with nature

In this work I touch on the complex relationship we have with animals. I examine what man and animal have in common. All animals have in common some kind of connection and understanding of nature. We touch things in different ways.

The choice of material is influenced by how knowledge has passed down from older generations. My mother taught me how to knit and the yarn has often reminded me of rivers. The feathers I got from a friend of mine who hunts for his family. The food industry bothers me enormously as well as the difficulty of good options in Iceland. I often think of the dualism in connection with how we meet consumption. My friend the hunter and his family hunt only for their own consumption. They grow their own vegetables and do not consume processed food. They live in great harmony with nature, respecting strategies for sustainable hunting. I have heard people wonder how anyone can go out and shoot an animal. The same person might not have any problem eating Fois gras, which is a luxury food product made of the liver of a duck or a goose that has been specially fattened. To me that sounds like Winnie the Pooh saying I don't want to eat my friends at the same time that he is eating a hotdog. Seeing the pile of feathers on the ground created a longing to celebrate wild life by using the feathers in a metaphorical way.

Throughout more than 20 years of teaching the writings of John Berger in the book *Ways of Seeing* have influenced me greatly. Working on this piece brought me back to his writings where he examines the evolution of our relationship with animals. He opens with a poetic reminder of how it all began:

To suppose that animals first entered the human imagination as meat or leather or horn is to project a 19th century attitude backwards across the millennia. Animals first entered the imagination as messengers and promises. For example, the domestication of cattle did not begin as a simple prospect of milk and meat. Cattle had magical functions, sometimes oracular, sometimes sacrificial. And the choice of a given species as magical, tameable and alimentary was originally determined by the habits, proximity and "invitation" of the animal in question. (Berger, 1972)

Berger's writings reflect on the marginalisation of animals as he describes the ancient relationship between animals and humans. His writings are characterised by sorrow as Berger is concerned by the loss of a meaningful connection to nature.

The work *Lesson from the Geese: Dreaming of collaborative protection of our waters* uses the same metaphor reflecting on a connection that can now only be rediscovered, through the experience of aesthetic experience. I agree with Berger when he states that animals are like us and not like us. When representing animals in art, we are representing, metaphorically something about ourselves.

4.4.2 Artistic processes and emphasising values

There was a strong emphasis on values in the A+EfS course from the second year onwards. The student teachers got to know the Schwartz value system (1992; 2009; 2012) and selected readings in relation to it (Holmes et al., 2011). They created their own mind-map of important values to work with in the classroom. In a group session many intrinsic values were mentioned such as respect, kindness, honesty, courage, perseverance, self-discipline, compassion, generosity, the importance of listening to others, empathy and dependability, which they saw as being important for future students to live a good life. In all A+EfS courses the students have concluded in group discussions that the main emphasis of EfS should be on values as the guiding principles underpinning one's lifestyle: and guiding us through many complicated situations in life and helping with making sustainable choices. Such principles come from the standards students have set themselves:

- We need to learn how to live in peace and harmony with all creatures and nature.
- Empathy is a keyword.
- Respecting others is important and part of good manners.
- Working with values can help us to define what is a good action and what is a bad action.
- Learning about values is often learned from others.
- It is important to talk about what's right and wrong.

When students made these kinds of statements on values the topic becomes a completely normal one in the classroom. Many of them mentioned that at home they are more concerned about how they live their life after starting the A+EfS course. They practice their ideas through working with localized social actions and activating local settings through an ecological approach where human culture is nested in ecological systems (Gruenewald, 2003) of which the WIG project is a good example. I have learnt that in the future I will put more emphasis on having the student teachers work with their own values in the course as they felt the need to talk about what they did right, what they did wrong and how to make better moral decisions. It was important to learn how to make mistakes and live with it. One of the students stated:

If the focus is on the truth and students admit mistakes they can learn from it, and it makes them feel good. They begin to trust themselves more and this gives others a reason to trust them.

Trust within the groups helped students to build self-knowledge which is crucial to sustainability. In turn they considered how arts could help pupils

perceive, interpret and understand ideas of sustainability:

Values can motivate action. However, people have to be aware that they can be implicitly used to explain and justify action.

The importance of love was also mentioned because it is what keeps families, circles of friends and larger communities going. During the discussions one of the students stated:

If we teach our students to show compassion, forgiveness, empathy and acceptance, the whole world is more likely to live in peace. I noticed how difficult it is for some of the pupils to put themselves in the shoes of others. I don't think they have practised it a lot.

The art piece *Skuli's Crosses* (figure 3.4) which was discussed in connection with RQ#1 was based on the same hope for compassion and empathy.

Values that are appropriate to sustainability cut across all issues discussed in chapter three. The class in year 2 concluded that it was crucial and indeed very easy to work with values in art education. In written reflections every year, many student teachers reflected on sustainability as an important factor for the arts and art education.

4.5 Being connected

One of the essential characteristics of a professional is to keep up with current developments (Bredeson, 2002; Hargreaves, 2001; Webb et al., 2004). I do this myself by networking, reading widely, attending seminars and contributing to the public debate on sustainability. In order for my students to develop experience in this, in the third year of this study I included a new assignment on the A+EfS course asking all students to make sure to follow the newspapers, TV news, programmes and Facebook entries for items broadly related to sustainability and cut out or print and hang these up in the classroom. Bit by bit during the course the students brought in many cut-outs and prints. This exercise also became part of the work on their reflection journal. We then started every session by hanging up our new findings and reflecting on them in relation to the reading material. The clips they brought in were very diverse, but most of them were related to human action and its consequences. The topic of time came up often. Many of the students were interested in the idea of mindfulness and were concerned with the fast pace of modern society. They felt that the issue of global warming has often been overlooked perhaps because it takes a long time for the climate to change in a way that people feel it.

One of the students brought in this picture (figure 4.5) from Facebook. His comment was:

Almost every scientist believes that the globe is getting warmer, our climate is changing. That is due to human activities like burning fossil fuel. But still there are stakeholders that try to confuse people and say that this is just due to normal inflation in the weather. This is what is called 'climate change denialism'. (November 2013)



Figure 4.5 Sea level, motivating image that a student teacher found on Facebook

The reason I decided to start this assignment was when one student brought in this image that had been posted on Facebook. The week earlier the group had been discussing how important they felt it was to take students out into nature so they would learn to value nature. So this image was really spot on (figure 4.6). In my journal I wrote alongside this found image



Figure 4.6 Brands vs plants, motivating image that student teacher found on Facebook

It was an interesting discussion that followed the image one student showed the class today. It connected so nicely to the discussions last week. And the interesting part was that the student teachers could more easily name the brands than the plants. In fact, only a few of them recognised more than one. I really should spend more time outside with them. (October 2012)

I encouraged the students to bring in some material that they found, praising the student that had shown the initiative to print it out and bring it, but it was not until I made this task into an assignment that they became enthusiastic about bringing something in and putting it on the wall as part of the course. When connecting to what is happening in real life the connection helps the students to work with social issues that they think are of great value.

In order to develop an understanding of sustainability issues that connected to their local environment one of the assignments in the A+EfS course required the students to design a project for elementary or secondary school pupils. In the course we discussed different pedagogical approaches like place-based education, critical pedagogy, critical place-based education, choice-based education and phenomenon-based learning, all focusing on student-centred learning. When designing the learning activities, they often made a reference to some of the media clips on the wall.

Some of the students have worked with pollution and how it could affect their health. One created settings to discover what human actions create air pollution in Iceland. One project which was aimed at fashion study in upper secondary school was connected to consumption in Iceland and also connected to discussions about water consumption when manufacturing blue jeans and the issue of pollution in the fabric dying industries.

Changes in society and daily life are indicators of unsustainable practice. In the first years of running the course students had also reflected on how everything had become larger, buildings bigger and more consumption than before. One wrote in his final reflection in connection to his artwork:

We need to reflect on lifestyle and consumption as being at the centre of climate negotiations, so pupils will stop valuing things and discover what well-being is really about. (December, 2010)

4.6 Critical thinking and community engagement

Critical thinking as discussed in chapter one is the ability to think and make decisions in a clear and rational way, about what to do or what to believe. It includes the ability to engage in reflective and independent thinking. This is in line with the Bonn declaration (2009) stating:

The challenges arise from values that have created unsustainable societies... We need a shared commitment to education that empowers people for change. Such education should be of a quality that provides

the values, knowledge, skills and competencies for sustainable living and participation in society.

Several critical thinking skills come into play in many of the assignments in the WIG and A+EfS, such as students leaving the classroom to work with young people who were to select a place close to their home where change was needed and where they wanted to have an effect. Each student teacher created their own unique approach but the common goal was to provide a situation where the adolescents could visualize imaginary situations and understand how their ideas could affect them. This required the youngsters to search for problems, raise their own questions, and find their own solution. In that exercise the student teachers worked with the pupils in a critical way as they identified a problem, constructed a solution, created arguments for the solutions and evaluated the idea.

The student teachers do this exercise after studying about place-based education, they know that the protection of the environment is dependent on many factors. When dealing with environmental protection or social justice in relation to sustainability or a fair society many different approaches come up and the student teachers learned from each other's approaches and the assignments from the pupils. Figures 4.7 show a work from a 13 year old boy who was troubled by a half built house that blocked the view for the seniors living in the house next to it. His idea was to create a pleasing view for the seniors so that they could enjoy the rest of their life.



Figure 4.7 Problem solving by a 13 year old boy

After presenting their projects, the student teachers agreed on the importance of learning about critical thinking which encourages an analysis of situations and arguments to identify faulty or unreliable assertions or meanings and is valuable in place-based pedagogy (Breiting et al., 2005).

Ever since the first year this assignment was introduced they have addressed how useful it is to try this in connection with a community the young people choose themselves. That way the student teachers are able to experience how youth can work with an assignment where they build on personal values and virtues. (Research journal 2016)

Pedagogy and community engagement are valuable in thinking critically and in place-based art education like in the WIG the student teachers can create settings which nurture shared values and beliefs. That allows the student teachers to create settings for the pupils to reflect on the justification of one's own beliefs and values.

As part of the practice at the IAA the student teachers experiment with literacy. They question how they can help their future students to see and think through art in school settings that can shape their future. That way they learn to understand the logical connections between ideas and identify the significance and importance of ideas.

A sustainable society fosters equal rights among their citizens. Art educators therefore have to consider what kind of settings allows students of the future to reconstruct a world of enhanced and improved social relations. At IAA the student teachers consider those facts in relation to many educational theorists like Kerry Freedman, thinking on how art reflects liberty of expression, and for those who pursue art they can become involved in a socio-political action (Freedman, 2000, p. 42). Many of the assignments in the WIG project have reflected on human rights, equality and social justice which are some of the fundamental issues of EfS.

When humanistic values are kept in the forefront this can be performed as powerful compensation to those perspectives that often are kept silenced. What is perceived in art, then, is contextualized meanings rather than just events or existences (Dewey, 2005/1934, p. 248). When arguing the importance of the WIG project I have often referenced the argument for the arts and humanities in education by the philosopher Maxine Greene. She was a great supporter for arts in public spaces like schools, and she often discussed the possibilities of art in education for action. She connected art to people's inter-subjectivity and how they could invent projects: "transformation, for reinvention of some aspect of the world" (1986, p. 242). Greene had a great influence on many other later scholars. Her ideas about the role of the artist being to reflect on the violence in society respected the social responsibility of artists. When artists address the harshness of the society she connected their work to influence the value of humankind. Artists have a moral responsibility and through their use of aesthetics they should raise public awareness (Goldman, 2010).

The student teachers have addressed the fact that they think critical thinking should be part of EfS as it makes students more competent in identifying values and understanding the importance of taking action and being an active participant in the community. Art creation can help students to emphasize issues they feel are worth fighting for, and thus build a bridge between knowing and acting.

4.6.1 Artistic expressions in the courses

The final assignment of the A+EfS course is artistic reflection where the students select a topic from those that had come up in the course including a written

component. The artworks provided the student teachers with an opportunity to summarize their findings in the form they found most relevant. Using art as a medium for final reflection enabled them to express their personal and community concerns. Through their art, the participants could transfer knowledge and information about personal and community issues through discussions about the artworks (see appendix 4).

After the negative experience of having students during the pilot year reject the exhibition at the National Gallery, I decided I would not include an official exhibition as part of the course. Still I found it important to offer the students an opportunity to take part in art exhibitions relevant to the course.

Through networks I found opportunities for the students to take part in open group exhibitions in connection with sustainability. I encouraged students to take part in exhibitions offered annually by the ASAD network. We have introduced possibilities within the department to set up exhibitions. Students that do not show their work in open exhibitions set their works up at the IAA. When exhibiting the participants gave access to those who are outside the study, including other students, teachers, policy-makers and politicians.

Artwork on display can also communicate an idea or a feeling, which can depend on one's current situation in space and time. This has been the case in all three exhibitions that are part of this thesis. In order for the individual visitor to identify the concepts/ stories or narratives being exhibited it is important to create settings for themselves and space to find links to lived history or provoke questions concerning the present. Many of those works reflect in some ways on sustainability values and virtues. Some have reflected both environmental and social issues e.g. in the time it has taken for the climate to change and the effect it is having, i.e. on the glaciers in Iceland.

4.6.2 Collective value and different communities

Some sustainability work like the WIG is suitable or indeed necessary to conduct in groups and collective value and group dynamics appear to be reciprocal qualities as each person encourages the others. Other work may not gain in value if done together. In my case the WIG project involved close collaboration between all stakeholders and community values embedded in the WIG project were demonstrated by productive collaboration among the student teachers, the WIG professionals, and the active participation of the school community.

My notes and the student teachers' written assessments suggested that some students showed increased awareness and were able to identify relationships between phenomena that connect to sustainability values. But one week is too short a time to see the whole picture and establish interrelationships between fragmentary pieces of information. Much of the learning pedagogy at the WIG

touched on the important role of education and encouraging pupils to increase awareness of their social and political responsibility as well as providing the knowledge and skills to evaluate these issues in an independent and responsible manner, thereby affecting the community. The WIG project enabled the student teachers to experience the importance of values when learning about interrelationships, and therefore education as sustainability needed their explicit attention. This is in line with critical pedagogy as the collective activity includes a dialogue between participants rather than a 'top-down' one-way lecture from one person for the benefit of the other (Freire, 1970).

When pupils go through the procedures of making thinking visible the thinking about the interrelatedness and relevance to their real life is important for the experiences needed to connect to their own values. It is important for student teachers to get good training in how to facilitate interpretations, as it may not occur without prompting. Ritchhart, Church and Morrison (2011) developed routines for digging deeper into ideas. An important part of pedagogy that increases student responsibility is creating settings for the student teachers to evaluate what they did during the WIG. During the last two years of this research I have done that as a group evaluation in the form of a group discussion, which is a form of social or mutual learning. The scholars Polk and Knutsson (2008) who have been researching trans-disciplinary knowledge production for sustainable development have used the term mutual learning in relation to social learning, which is a commonly used concept in action research.

We use the term mutual learning to emphasize the focus on informal exchanges of knowledge and experiences based on reciprocity and reflexivity, all of which are foundational to producing legitimate and socially accountable knowledge. (p. 646)

This refers to increasing both individual and group understandings of a specific phenomenon regarding facts, values and interests.

4.6.3 Student teachers' artistic reflections

Many of the student teachers have stated that it was important for them to use an artistic approach to research and reflect on their findings. In the final assignment in the A+EfS course students can create either a written or artistic reflection on the course or some kind of combination of both. In all of the courses 90% of students have decided to use both methods.

Some of the works promoted the sustainable use of materials like Ásdís Spanó who later also took part in the exhibition *Challenge*. As her final reflection she created an installation made out of out-dated crackers. She decided to make use of it to create works of art that would get the viewer to reflect on consumerism

(figure 4.8). The aim was to explore the artistic potential utilization of the biscuits and techniques to communicate to the viewer and expand his consciousness through art. The aim was also to raise awareness of environmental issues that follows mass production.



Figure 4.8 Ásdís Spanó, *Best before 26.11.'10* (2010)

Ásdís later took her ideas further and in her thesis she conducted art-based research examining the possibilities of art as a way of creating a greater discussion of contemporary issues and how art can reflect ethical questions in the relations between man and nature. Her findings shed light on exploring the artistic process in education for sustainable development and the author's possibilities of using environmentally friendly materials to create art (Spanó, 2010).

Some student teachers have focused on maintaining and passing on cultural knowledge as I did in the installation *Dialogue with my grandmother*⁶. The artist Elín María Tayer worked with memories about her grandmother. She made artifacts based on her grandmother's knitted tablecloth cast in a porcelain tray (Figure 4.9). She used old glassware from her grandmother's kitchen, creating a coffee cup and bowl also cast in porcelain. She baked oat crackers from her grandmother's recipe that she also put in the installation on a table. The installation was a celebration of her grandmother's knowledge that the artist wished to pass on to next generation.

Some have created works that include participation like the work *Chessboard of sustainable development* (figure 4.10) by Helga Guðrún Helgadóttir. In the work she creates a game played with different rules than traditional chess, which is a game that aims to kill as many opponents as possible at the chessboard.

⁶ *Dialogue with my grandmother* is discussed in appendix 10 in the exhibition catalogue *LOOKING back - around - forward*



Figure 4.9 Installation by Elín María Tayer, 2015

The traditional chess game is a war between black players and white players. Her piece, on the other hand, is a game where the opponents both have to reach their goals without harming each other. The players are only the king, queen, bishop, knight and rooks, all representing different types of people travelling the earth. Each has a different gait, but all are similar, regardless of colour or power. On their way across the board, which symbolises the earth, they come across fields that are connected to the four pillars of sustainable development; economic, ecological, social and cultural. The game requires dialogue and agreement on the four pillars of sustainability in order to get their chess pieces safely across the board:

Possibly the game can be played by the rules, explained above. If not, the players need to invent new solutions as we do in our journey towards a more sustainable world. (December 2015).

This work (figure 4.10) by Helgadóttir asks questions and creates settings for critical discussions that can lead to visual literacy and knowledge. This participatory work can increase the understanding of issues relating to sustainability and how to value life.

As part of the final reflection of the A+EfS course I have always posed the question: What is important when influencing students' learning for sustainability? Some answers have been as follows:

You need to be emotionally engaged to change what you do!



Figure 4.10 *Chessboard of sustainable development* by Helga Guðrún Helgadóttir.

If we make learning personal by creating settings that give students a sense of purpose and meaning they can feel that they part of the larger issue.

If you are passionate about topics that relate to sustainability, students become more open and want more information, often asking questions to obtain it.

Allowing the students to work visually from their findings helped them to find more meaning in the subject matter and more meaningful connections between art, sustainability and everyday life. They displayed the sorts of attitudes toward thinking and learning about sustainability that one would like to see happening in their classrooms once they become in-service art teachers: open-minded, curious, appropriately sceptical, creating transformative situations while reflecting on their need for understanding.

In November 2013 I organized a conference in collaboration with the ASAD network and curated an art exhibition called *Relate North* at the Nordic House. Many students of the A+EfS course were very active in the conference and exhibition as discussed in article 4, and it had an influence on their later work.

As a programme director I have designed many courses that foster student driven initiatives. In connection to the ASAD conference 2014 in Kautokeino in Norway, I designed a workshop *Teach me something* along with my colleagues, with a focus on how we can learning from each other. In the workshop the participants did mutual reflective examination learning together about different

issues presenting different perspectives. It empowered the participants to gain different perspectives which they could use through critical collaboration to create joint reflections on contemporary issues.

This intensive course was designed for the students that had a special interest in sustaining cultural heritage but with a strong connection to contemporary issues. The guiding questions when designing the Norwegian course were in line with the questions in the original ActSHEN proposal:

How can we create a course that creates settings for the participants to develop cross-disciplinary knowledge about and for sustainable development?

How can we create settings for master's students studying duodji (Sami arts and crafts) and students who are artists studying art education for sustainability?

How can we create a setting that encourages respect for and about different forms of sustainability knowledge with a focus on students learning from each other in the same group?

How can students through collective, participatory art creation nurture a sense of shared responsibility to create shared value for our common future? (ActSHEN, 2016)

Many of the participating students were influenced by the course when doing their final thesis.

The artistic approach we used in the workshop in Kautakeino had a strong influence on me. The pedagogical approach in my own thesis is in line with my positive experience with the focus of the process of visible thinking and peer collaboration. (March, 2015)

I found it good how the assignments focused on understanding rather than knowledge. (March, 2015)

In the workshop process the focus was on the present moment and learning for the present and not only for the future as is often common. Sustainability requires us to understand the present. For example, it came as a surprise to them that an issue that would be considered an unsustainable action in Iceland would be promoted as sustainable in other places. This was related to issues such as the use of raw material like timber that needs to be imported to Iceland and the use of natural resources, like water.

4.7 Community dynamics and local conferences

Although the cultural exchange experiences discussed above were important for student learning, it can be difficult to take part in learning and sharing in one's own local environment because not that many suitable opportunities are on offer. The number of conferences on education each year vary according to issues under discussion in society. Some large projects end with conferences, such as the Learning Space project in 2015. In Iceland there are four annual conferences aimed at education as well as teacher conferences held by the unions. One of the national conferences is at the University of Iceland every fall, called *Menntakvika*, and one in the spring at the IAA called *Hugarflug*. These two are held in Reykjavík. In the north of Iceland the University of Akureyri holds two conferences a year, one in the spring and one in the fall. Since 2010, I have proposed seminars for the Reykjavík conferences where I have included former students to allow them the opportunity to present their findings from projects and theses. This may, in some cases, be their first public speaking engagement but the support given to the students helps develop the in-service art teacher community, an important phenomenon in a small country.

We have also tried to vary the style of the presentations. In 2012, a research group *Education and creativity* to which I belong, organised a three-hour seminar at Menntakvika, along with two colleagues from the University of Iceland. Instead of each giving a detailed talk we introduced our approaches: education for sustainability and innovation education and set up a workshop on understanding climate change. We set up a large table with diverse materials suitable for creating either two or three-dimensional works.

Each group (eight people) started by making mind-maps defining the issue and how they connected to global warming. Then they worked from the diverse materials we had brought to develop an artefact that would represent one topic from the mind-map.

One of the groups decided to work with what many of the world's countries are now facing because of global warming, severe flooding (Figure 4.11).

We have to realise what we do to the rest of the world with our consumption. Now the small island nations in the Pacific Ocean and Caribbean Sea, people that contribute the least to the causes of climate change are the ones that face the worst scenarios because of global warming. (Journal entry based on dialog)



Figure 4.11 Image of participants' reflections in relation to sustainability at *Menntakvika* conference

The participating students from the A+EfS course have always given positive

feedback after the experience of taking part in the democratic work at the tables.

It was great to work with those in-service teachers that came to the conference. I think they got so much out of this work because they could actually take part in the conversations.

Everyone connected so clearly to their own daily habits and were willing to face the everyday choices they need to make in order to be true to their values and virtues.

One of the student teachers that had been working in a school reflected on connecting to professionalism and the importance of working with values and virtues:

Obviously when working together we were all aiming to improve our performance and feel how we could do better. This was a good exercise in how schools can do better, how we can work with students on what we were doing and allow them to reflect on their values...what they think is important, that is what the students think, not always the teacher.

One of the participating teachers who took part in the seminar had a similar experience:

... it's making me think about how I'm doing things and where EfS will be useful, where I could bring it in. And I think the students would really enjoy what we did in the seminar.

This workshop reached some of the 'alumni' from the A+EfS and these teachers are

an important resource in Icelandic schools. To evaluate how the former participants in a course are able to work with values and virtues in the classroom once they became in-service teachers, I interviewed four of them that I knew had continued to work with sustainability; each were working on different school levels. I asked how art could engage students in new ways of looking at their daily habits through facilitating thinking, reaction, discussion, debate and deliberation with connection to their local environment. The aim was to find out if artistic projects helped alumni to create a more responsible society and see how actions affect others. The results of that case study are presented in the article *Participatory virtues in art education* seen as article 5 (see appendix 5).

I found that participants in all the IAA projects were able to use the knowledge and skills they learned in and through the arts to demonstrate values and virtues with respect for cultural richness in local and global contexts. The former students could respond with critical awareness to various forms of the arts and were also able to express themselves through the arts about issues they care about. Students used critical thinking skills in exploring their thoughts, experiences, and feelings. They all used a range of processes to critically respond to their own works and the works of others with respect to their age. All the projects engaged students both individually and collectively in the creative, expressive, inclusive and responsive processes of the arts as they developed confidence in themselves as creators. As in the wicked problems which were discussed in chapter one, they realized there could be many answers to the same problem. This is the key distinction and dimension of making art and engaging in a design process, and according to Eisner (2002) one of the principal points in teaching art.

Arts processes enabled the participants to develop their understanding of others through working cooperatively in creative art making. The projects also offered student teachers opportunities to work independently, which required open-mindedness and understanding of others and challenged the older members to develop solutions and make decisions. They had to question the norm and were encouraged to take risks when developing their own ideas.

The cases in this study that are discussed in the articles and book chapters, draw particularly on consciousness, culture and ecology. In article 3 I reflect on how the student teachers deal with their students concerning vices and virtues in the search for personal values, for collective wisdom, using artistic expression. As they became practising teachers they had found that when resolving problems, new questions had been formed in the process, not unlike the case of wicked problems. They needed:

... to ask deeper questions. This is the essence of a paradigm shift. We need to be prepared to question every single aspect of the old paradigm. (Capra, 1996, p. 6)

4.8 Community exchange and interdisciplinary approaches

One lens that is important in demonstrating the value of art is community exchange, and this can take various forms depending on the community that is in focus. An important road is through exhibitions. For the second required exhibition, I wanted to create a setting where art could be presented to others studying sustainability from a range of perspectives. I sent in a proposal, which was accepted, for an exhibition at the annual Arctic Circle Conference in Harpa, Reykjavík. The goal of this exhibition was to bring art and people into contact. I wanted to create a setting for a dialogue that could lead to an interdisciplinary and multistakeholder network of activities and collaborative projects, as well as bridging knowledge gaps on best practices related to climate change and sustainability. I wanted to show how artists can build bridges by transforming traditional knowledge into modern life. It portrayed the contribution of thirteen Icelandic female artists to the maintenance of Icelandic cultural heritage. I decided to work only with women because 2015 was the 100 year anniversary of women's right to vote. It would have a role in preserving and showing how developing old know-how can open many-faceted values in society, encourage solidarity and encourage shared values between generations. In dialogue with the conference delegates I stressed the importance of fostering this tradition, explaining how human creativity is often in close contact with culture, and therefore cultural sustainability can be characterised both by utility and maintaining aesthetic experiences and values.

The exhibition aimed at being informative, showing where arts and culture can play a role in a process of change towards a more sustainable world. This exhibition offered participants in the Arctic Circle conference an opportunity to stop for a while and to interpret and reflect on selected works of Icelandic artists who were concerned with maintaining the traditional knowledge of their forebears, and who had found resonance in old traditions through contemporary art. In the exchange between conference delegates and artists a community of concern was being developed.

The exhibit was also designed to broaden the context of the Arctic dialogue and strengthen the developing focus of Icelandic contemporary art on the Arctic. I wanted to create a dialogue where learning for sustainability involved gaining a holistic view of a situation while working towards an understanding of it. This entails going beyond raising awareness to addressing underlying issues that lead to unsustainable practices in our daily lives, as well as challenging some of the assumptions that underpin day-to-day practices.

To extend my contribution I offered and facilitated an open offsite venue for further conversation. Here it was possible to facilitate bi-regional dialogue and collaboration on the value of culture and the arts in addressing one of the most pressing challenges of our times. I will continue this work in the next Arctic Circle conference, offering a panel session with dialogue between different disciplines and

the arts. I also organised several roundtable sessions, inviting people from different disciplines to engage in dialogue with artists.

My aim was to design an impressive art exhibition that had the potential to provoke transformative learning experiences as they awakened personal reflections, experiences, opinions, questions and interpretations. I wanted guests to leave the artwork with a greater sense of their own values and ideas of how to understand the potential of cultural heritage in the context of sustainability and its issues. I also wanted them to leave with some questions about what they could do to take part in sustainable development.

4.9 The relational assessment tool and the exhibition *Boundaries and bridges*

When organising the exhibition, I used the relational assessment tool (Wood, 2013) (figure 2.12) which was introduced in the method chapter to better understand my practice based on the feedback I had from the first exhibition. I worked on making sense through theories of EfS where what you learn, where you learn and how you learn are considered when creating interdisciplinary settings, as discussed in chapter three. For the purpose of making my findings visible, I used practices of the process of seeing, thinking and wondering with strong reference to cultural sustainability and each artwork was carefully selected with that in mind.

This tetrahedron method reminded me to constantly reflect on each issue represented on each side of the tetrahedron in relation to the others. (See figure 4.12) When organising the exhibition I had to remind myself of the setting I had chosen, and that I was bridging between disciplines. I realised that I had to select works that people from outside the art world could understand without references to other works.

The works I selected for this exhibit reflect on traditional handwork or techniques that have been inherited across generations, and have shown their excellent qualities in practical use and design. Some are still in use today. The artists embrace traditional knowledge and practices and consider the balance between aesthetics and function where the old traditions have now acquired new content. At the same time they reflect on values related to issues of sustainability. Techniques and traditions are transformed through using different materials or trying them out in a new context, preserving yet altering earlier knowledge. (See exhibition catalogue, appendix 9)

When organising the exhibition (appendix 9) those six concerns guided my way. The concerns arose from the application of the relational assessment tool in figure 4.12. The concerns are marked in numbers 1-6 in line with the model's relations between each corner point. Those same concerns have also been valuable when writing this review and evaluating my processes:

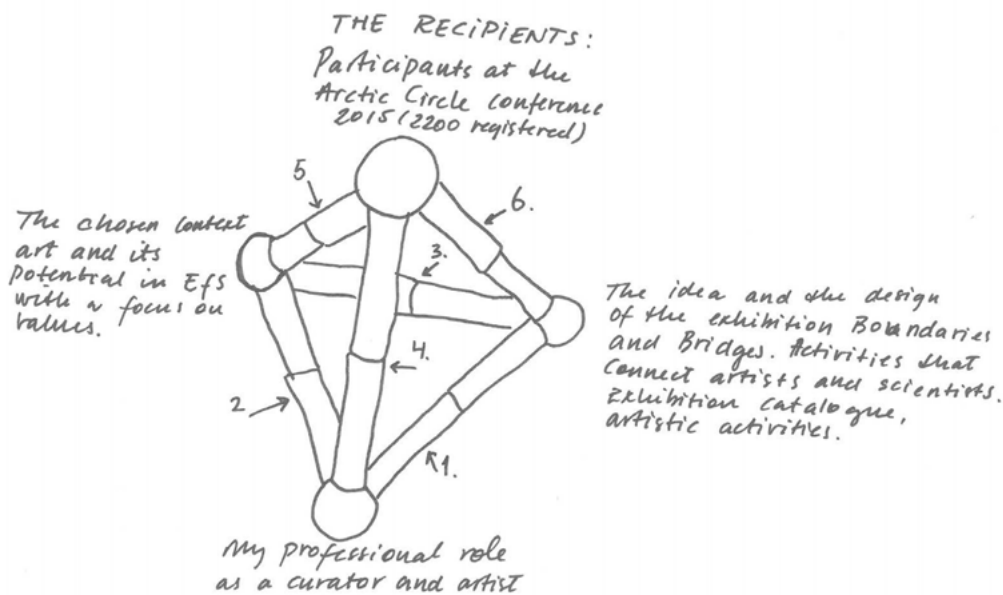


Figure 4.12 Planning of the exhibition *Boundaries and Bridges*

1. How can I develop different activities within the exhibition that offer the conference guest an engagement that will deliver good examples of how the arts reflect on the concept sustainability? What elements could I include that will enlighten the interest of the conference guests?
2. What do I know about the conference and how can I convey the issues of art and sustainability that I can share through curating an art exhibition? How can I create artworks that reflects on collective values?
3. What kind of environment could be created within the conference setting that includes its possible environmental, social, cultural effects on sustainability revolved around the conference? What kind of impact can it have within and beyond the preparation the conference?
4. What kind of relationship can I form with the conference guests? How can I connect to the people at the conference? How can I use my communication skills and show interest and will to participate?
5. Why do the conference guests need to know about the potential of art in Efs? What do they need to know about making sustainability issues visible through art? How can the exhibition show new perspectives of sustainability related issues through art?
6. What kind of activities are interesting for the conference guest? (most of them stop for a short time at the exhibition on their way between presentations) How can the activities that I provide encourage engagement in art?

4.10 My artistic contribution to the exhibition *Boundaries and bridges: Value Archive*

I contributed one of my own works to this exhibition, called *Value Archive* (figure 4.13). It reflected on collective values, again emphasising the importance of community.

When creating this art piece, I had been working on the AR approach in terms of intrinsic values and how they influence our day-to-day decisions. I found the need to try to find a way to reflect on this visually.

Everything has a value, provided it appears at the right place at the right time. It's a matter of recognising that value, that quality, and then transform it into something that can be used. If you come across something valuable and tuck it away in your metaphorical suitcase there's sure to come a moment when you can use it. Jurgen Bey (Smith, 2008, p. 6)

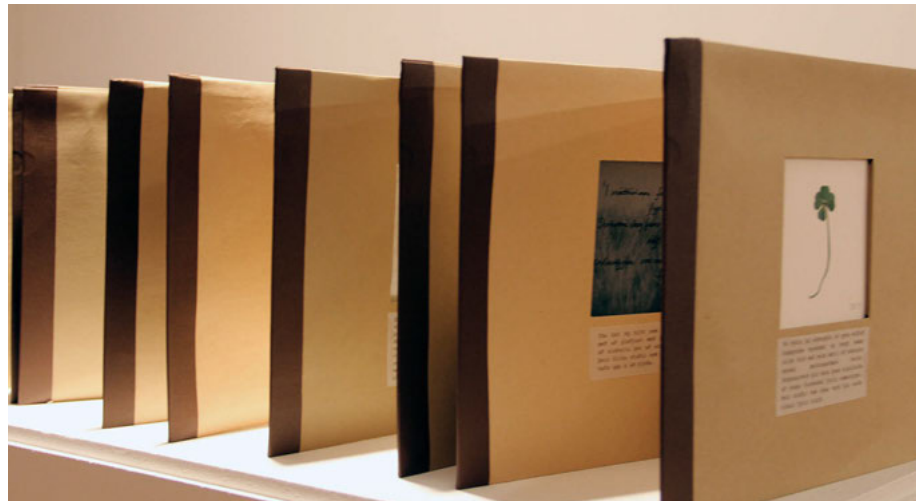


Figure 4.13 *Value Archive*, 2013 - , ongoing artist book, 40×40×40cm.

This art piece stems from my interest in memories and values. Memories and values shape our current behaviour and the way we perpetuate customs and traditions.

I wanted to visually reflect on intrinsic values (figure 4.14), trying to understand how other people around me influence me and my everyday life. The work is created with the participation of a group of women. All of them have influenced my life in different ways. Some of them I know well and some I know only a little. But all of them are in a way my role models. Unconsciously, we classify, organize and memorialise events in our lives that we can connect to our values. In 2013 I sent a letter to 43 women and asked them to share in the creation of a book based on messages or knowledge they wanted to pass on to future generations.

I have always been interested in reading about advice and life values from people

I believe are open minded and life changing. When I was working on this piece I saw a BBC interview from 1959 where Bertrand Russell gives advice for future generations in a program by John Berger called Face to Face.

Bertrand Arthur William Russell (18 May 1872 – 2 February 1970) was a British philosopher, logician, mathematician, historian, writer, social critic, political activist, as well as a prominent anti-war activist and a Nobel Laureate. His advice:

Love is wise, hatred is foolish. In this world which is getting more and more closely interconnected we have to learn to tolerate each other, we have to learn to put up with the fact that some people say things that we don't like. We can only live together in that way. If we are to live together and not die together we must learn a kind of charity and a kind of tolerance, which is absolutely vital to the continuation of human life on this planet. (BBC face-to-face interview)

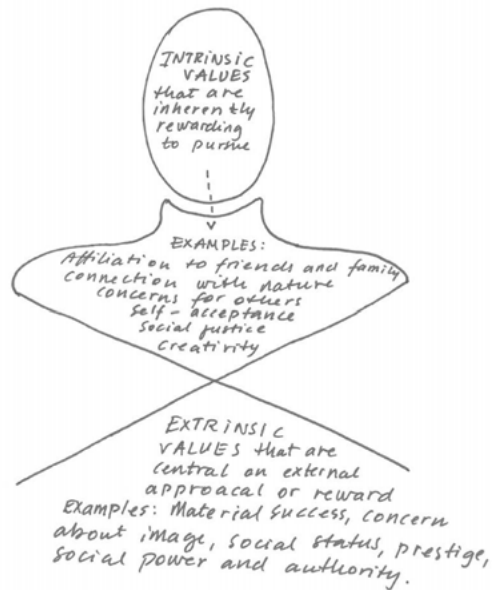


Figure 4.14 The distinction between intrinsic and extrinsic goals (Holmes et al., 2011)

I was very moved by listening to this wise old man and decided to make this work an on-going art piece. Up until now, I have invited 46 individuals to share in the creation of a book based on messages they want to pass on to future generations. The number of participants are equal to my age. I invite one person per year to participate.

The work provides a reference to the memory books that were very common with twentieth century youth before the days of the Internet. In memory books people would write in each other's books memories worth cherishing.

Participatory artwork like this departs from relationships between humans and the social context of creating art. The artist book is meant to create a space in which art can fuel our interest in those elements of our society that might be

improved, and which improvement might lead to sustainability.

Developing my approach, I was influenced by many artists I have mentioned before but I also looked at works by artists using ethnographical approaches like: Chiharu Shiota and her installations where she reflects in a conceptual way on real happenings (Shiota, n.d.).

Mark Dion's ideology particularly resonates with me as in most of his work he inserts himself into the social history of the place. He sees himself as a 'trouble-shooter' who looks at issues with a new pair of eyes and a new set of categories and shows an interest in social, political and natural ecologies (Art 21, 2001). His search for understanding of the interrelatedness of things is in harmony with EfS. It is this kind of connection between things that is so important but often missed in cultures.

I have also looked at the works of Mel Zeigler and how he has examined the role of art in the community and the socially-constructed dimensions of our natural environment. It has been useful for me to see how his work highlights the importance of collaboration between the artist and the broader community (Ziegler, n.d.).

In the work *Value Archive* I am the primary subject of the research. I am in the process of collecting a visual message for future generations from the women who I see in some way as role models with regards to my values and daily activities. I've had personal connections with all the participants, but to different extents. The bookwork consists of messages and my text where I, based on my memory, reflect on why I believe they are worthy of being a role model.

The messages are different; some are general while others are more specific, but all have the aim of being of value for generations to come.

Below the images the participants contributed, I wrote a personal message to each participant explaining why I had identified her as a role model in my life. Here is example of how I responded to the participation of the three individual participants above.

When you decide on something nothing stops you. Despite your young age, you have a strong sense of equality. You are concerned about fairness and the feelings of the people around you.

You always show empathy and compassion towards fellow human beings. You've dedicated yourself to putting humour and imagination in the foreground. You demonstrate the experience of other people's interest and even connect it to your source of creativity.

You are a volunteer leader. With your generosity you increase the range of opportunities for others to participate in activities that would not take place without you. You show interest in meeting new people, you are willing to be a model for others, and to learn something new by being a volunteer for you is both meaningful and rewarding.v

You are both creative and analytical at the same time. The combination makes you a great artist. Your art unites people.

The exhibit also showed some visual critical analysis of the participants' works that provides a connection to theories of intrinsic values and education for sustainability for generations to come.

I later exhibited the work in the Kuopio gallery at the University of Lapland. There I made use of the glass windows in the gallery to set the whole exhibition up as an archive. In that installation I drew some visual critical analysis of the participants' works that provided a connection to theories of intrinsic values and education for sustainability.

I also wrote a message to visitors, inviting them to participate.

Please participate in the project!

Please prepare a 10 cm x 10 cm written or visual message for future generations. Based on your values and good life. How can we together create a more sustainable way of living?

The message can be general or specific, but with the aim of being of value for generations to come.

The message can be in the form of text, images, clipping, quotes, etc.

Please hang it on one of the glass walls in the gallery.

It is my hope that you choose to join in!

The participants hung their participation directly onto the walls of the gallery. This gave an interesting addition to the work.

4.11 Artistic actions that transform students and teachers

When education leads to action we can say that the process transforms students' and teachers' ideas and values. As we try to justify our beliefs we deal with our values and feelings, and that depends on the context – biographical, historical and cultural — in which we are embedded. We make meaning with different dimensions of awareness and understanding. In the absence of fixed truths, and confronted with often rapid changes in circumstances, we cannot fully trust what we question, our own points of view, what we know or believe, and this calls for reevaluation (Mezirow, 2000; 2009). When educational settings make us question

our own viewpoints, it provides us with a more dependable way to make our life meaningful. We can look and reflect on alternate points of view and create a new way of knowing that may be different from our old habits. This requires us to become tolerant towards others' points of view (Mezirow, 2000).

In EfS it is important to keep in mind that what is considered to be well-being and/or the good life varies between individuals, and between different societies and cultures. Every school setting has to develop its own goals towards ES because it would be misleading to take the concept of the good life developed in one cultural context and apply it to other cultures (Keith, 2004). In EfS at the WIG and in the A+EfS the student teachers have dealt with topics such as human rights, poverty reduction, sustainable livelihoods, peace, environmental protection, democracy, health, biological and landscape diversity, climate change, gender equality, and the protection of indigenous cultures.

4.12 Summary

My findings indicate that the student teachers at IAA are all well-informed and prepared for working with values and virtues in their classroom settings. This research as a whole shows the process of the production of knowledge on EfS within the IAA through opening up situations for exploration in non-linear ways. However they face the same challenge as I did when working with them. Wicked problems include actions and decisions that affect most people, such as what clothes we wear, how we commute or what we eat. This creates challenges when working with values.

We have unwittingly created unsustainable societies. In the learning settings we come to realize we are part of the problem. What has worked best in my settings at IAA is to look for shared commitments where the student teachers design educational settings that have the potential to empower people for change.

Effective education for sustainability gives students the skills, perspectives, values, and knowledge to live more sustainably in their communities. It is my moral duty as a teacher educator to create settings for the student teachers to try out their ideas. Even though the WIG is an attempt to give them some tools I realize that even so when they become in-service teachers their implementation will vary across a wide range, in both depth and breadth. It is important for the student teachers to realise that their education is not finished when they graduate. Professionals continue to learn throughout their careers and this can be facilitated through learning communities. Social media can be useful and my attempt to follow up with my commitment towards the student teachers was to create a Facebook page called *Art education and sustainability* [i. *Listkennsla and sjálfbærni*] where all the members can add or use ideas about education for sustainability and art.

When reflecting on my own values and community values in artistic actions I have realised how fruitful it is to reflect on values when searching for the potential

of art in education for sustainability. Working with others in art has also showed me what participatory pedagogy and participatory art has to offer which leads me to the next question.

5 Participatory pedagogy and participatory influenced art

In this chapter I aim to answer how participatory art, participation and participatory pedagogy have influenced my artistic actions and how artistic actions have influenced my pedagogy. Participatory art is an approach to creating art where the audience is engaged directly in the creative process, allowing them to become co-authors, editors, and/ or observers of the work. Participatory art is incomplete without the viewer's physical interaction. I address the significance of participation in art education, particularly when learning how to address fundamental concerns in education as introduced in the Icelandic National Curriculum (2011). Several of these concerns only become a reality if citizens work together.

5.1 Overview

Participatory art originates from the relationship between humans and the social context of creating art. In the participatory approach the audience is engaged directly in the creative process, allowing them to become co-authors, editors, and observers of the work. Participatory artworks have the potential to create a dynamic collaboration between the artist, the audience and their environment (Bishop, 2012). Participatory work includes collaboration, which encourages artists to consider alternative perspectives. Over the last ten years the term

‘participation’ has become central to contemporary art. Sometimes referred to as participative art, collaborative art, socially-engaged art, relational aesthetics, or creative process art, it is not to be confused with the more traditional empirical-sociology documentation of social ‘participation in the arts’. All forms of arts require participation to some extent but for different reasons and in varied ways. The focus of our work in the exhibition is on participation, both as participative art and participatory art. The latter describes artworks in which the artist uses participation as a component of art making. In participative art projects however, participation is the project and the artist creates the framework allowing for participation with no pre-conceived ideas of the outcome. The focus is not on the fact that people participate but on the fact that participation is the main principle governing human interactions.

5.1.1 Examples of participatory art projects

Many artists who have included participation in their work have influenced me. To name a few, Joseph Beuys and his *7000 Oaks* project (Dia art, n.d.) in Kassel Germany is a good example. With the help of volunteers, he planted 7,000 oak trees over several years. Each tree that was planted had an accompanying basalt stone. The work had the goal of permanently altering the living space of the city and was therefore an extensive artistic and ecological intervention.

The on-going project *Chalk* by Jennifer Allora and Guillermo is an installation of a giant school chalk that they place outside in public spaces i.e. in front of governmental buildings for the general public to make their own mark, as the chalk represents the potential for communal communication. The work was first installed in the main government square in Lima, Peru, in 2002. Since then, it has occurred in various locations around the world (Make your mark with Allora & Calzadilla’s chalk, 2015).

The Fundred Dollar Bill Project (Fundred n.d.) by Mel Chin is another participatory project that has influenced me. Chin has over the past years, been working internationally where he invites students of all ages to participate in a giant performance artwork and collective creative action to support the rebuilding of New Orleans. The individual expression of the participating students becomes a part of a collective call for action.

The political and at the same time poetic, powerful, multivalent practice by William Kentridge (art 21, n.d.b) and his use of video has also been inspiring for me. The participatory nature of the works of Mary Mattingly, where she explores the themes of home, travel, cartography, and humans’ relationships with each other, with the environment, with machines, and with corporate and political entities has also been inspiring in my artistic practice.

There is also the creation of the wonderful tapestry by El Anatsui (Jack Shainman gallery, n.d.). He makes these large cloths with many participants as

they stitch together tin lids and bottle-tops, both of which are widely available in Nigeria. To transfer the material in this way he uses collective forces including many people stitching it together. The tapestry is done with colours that replicate the traditional Kente cloths.

The interactive nature of Thomas Hirschhorn's (art 21, n.d.) installations appeal to me and in the future I would like to be able to include such an interaction into my work. I also like how he offers alternative models for thinking and being.

The collective Assemble (Webster, 2015) is a group of artists who work across the fields of art, design and architecture to create projects in tandem with the communities who use and inhabit them. Their architectural spaces and environments promote direct action and embrace a DIY sensibility. When visiting the Turner Prize exhibition in the autumn of 2015 I was very moved.

In 2016 I started to work in a collective group which is made up of people from diverse backgrounds, such as artists, philosophers, educators, archaeological studies, anthropology, ethnology. With a few members of that group I created an installation in the Shetland Islands called *Take me somewhere*. The work consists of a cross-media installation that is produced in collaboration with the five authors as well as invited guests. The installation is composed of diverse artefacts; letters, physiographical records, works on paper, archival documents, knit, maps and oral history, video, photos and these represent the collective approach we use to better understand the world around us. This work is based on an invitation to participate in a dialogue about site specific experiences, and how these might be translated and transmitted outside a particular place. This method appealed to me, especially the part of getting to know people through letters and then later meeting them to work on the installation. I met with the local knitting club in Lerwick. This work is something I would like to continue to develop.

5.1.2 Communication: Creating participatory works

Communication is the building block for a society of shared responsibilities. Communication and participation go hand in hand; one is not possible without the other. A key part of the exhibition Challenge was composed of two participatory artworks and workshops as discussed in article 5. For my final exhibition I decided to use only participatory works and so *LOOKING back - around - forward* (appendix 10) that took place at the Valo Gallery at the Arktikum⁷ in Rovaniemi, Finland, March-April 2016 was curated with participation as the central theme. It took two years to plan this exhibition as I wanted to show my own works. I often work with the voices of participants from a selected place and installations in contemporary

⁷ Arktikum is a museum, science centre, attraction, popular culture destination as well as a memorable venue for meetings and conferences.

contexts. The focus of the Arktikum Museum exhibition (see appendix 10) was on participation and community involvement, concentrating on cultural sustainability and environmental issues in the past, present and the future. My artworks included both participative art and participatory art. The latter describes artworks in which the artist uses participation as a component of art making. In participative art projects, however, participation is the project and the artist creates the framework, allowing for participation with no preconceived ideas of the outcome.

Education for sustainability benefits from an interdisciplinary approach with one activity having several components, such as literacy, equality or citizenship. Lawy and Biesta have advocated the idea of citizenship as practice. They argue that:

[Citizenship is] not a status or a possession, nor it is the outcome of a developmental and/or educational trajectory that can be socially engineered. It is a practice, embedded within the day-to-day reality of people's lives, interwoven and transformed over time in all the distinctive and different dimensions of their lives. (Lawy and Biesta, 2006, p. 47)

Freire recognized “schools as a possible source/site of human emancipation and resistance.” (Kahn, 2009, p. 125).

5.2 Participatory pedagogy

In participatory pedagogy there is a focus on students' voices and their choices, as they should have a say in their learning opportunities. The teacher is no longer expected to transfer knowledge through a stage by stage approach; instead she welcomes questions from other participants that lead to learning through creativity and explorations. Participatory pedagogy is under strong influence from the informed action that characterises Freirean praxis in which it is assumed that everyone has knowledge and can participate as a learner and teacher in the skills being developed.

Freire (1970) looked at education institutions as sites of oppression, restricting student autonomy and participation. He argued instead for a dialogic process in which participants are assumed equal in order to engage in opening up a new investigation. With the focus on participatory pedagogy in the course Art and Education for sustainability (A+EfS) and the workshop in the botanical garden (WIG) I challenged the assumptions represented in conventional educational settings by applying flexible and experimental approaches. Conventional settings in classrooms can give rise to hierarchical power structures where the students are considered to be passive recipients of knowledge, and in which a prescribed curriculum dominates in response to a predetermined purpose of education. The participatory nature of critical place-based education (as discussed in article 1, appendix 1) offers an alternative active approach.

Active learning is defined as the extent to which students are involved in experiences that involve actively constructing new knowledge and understanding. Engaging students in these forms of learning is at the heart of effective educational practice. (ACER, 2012, p. 17)

In an alternative learning environment the power is mutually constructed and negotiated between those involved in the learning process and in which relationships evolve to co-create knowledge. The concept of participation becomes essential to the pedagogical process and its intention to transform the way we pursue social and ecological justice is in line with the ActSHEN project that aimed to increase student influence in university courses on sustainability and explore how participatory and collaborative education could be strengthened. By creating settings in the WIG for the student teachers to work with participatory pedagogy I enabled them to experience a structured and safe environment:

Setting out with open minds, children are said to acquire their knowledge piecemeal, in loosely connected fragments, through participation in a social and cultural environment scaffolded by knowledgeable adults such as teachers, but also by artefacts such as the ubiquitous globes of school classrooms. (Ingold, 2011, p. 109)

A research team (Simmons, Barnard, & Fennema, 2010) identified three important characteristics of participatory pedagogy which were fulfilled in the WIG project: 1) Choice and flexibility in assignments and course activities; the projects at the WIG fostered a choice-based approach in art education highlighting pupils' choice, where they could either select the concept or the technique or preferably influence both. 2) Balance between challenge and risk; the student teachers noted that many of the pupils participating in the WIG project felt that the settings, being outside the formal classroom, played a role in navigating experiments and challenges. 3) Contexts for critical reflection, as both the WIG and the projects in the A+EfS course relied on the creation of settings where a holistic interdisciplinary approach lays the foundation for welcoming diverse viewpoints and effectively develops, implements and communicates creative ideas among students and pupils.

The work *Teach me something* that I created for the exhibition *LOOKING back - around - forward* (appendix 10) reflects on how we can learn from each other and how culture influences our learning experience.

5.3 *Teach me something*

Teach me something (figure 5.1) focuses on sharing local and Nordic knowledge between generations. The process reflects on generating new knowledge and experiencing knowledge passed on from our older generations. How do we use and reflect on our common knowledge and become open to new knowledge? I got the

idea for this artwork after the event *Teach me something* in Kautokeino (Jónsdóttir, 2016). I found it very interesting in the context of passing on knowledge and sustaining traditional knowledge.



Figure 5.1 Installation of the work *Teach me something*, 2015

The artwork represents how a dialogue is created when making things together and how it translates into understanding. The installation shows how northern Finnish culture translates to people in Iceland.

I spoke with a Finnish friend of mine who has been living in Iceland for half of her life with her Icelandic husband and daughter. Most of her adult life she has been living in Iceland developing her own traditions but still cherishing her Finnish roots. She goes to Finland almost every year and her mother frequently skypes with them to keep strong contact.

I asked the two of them to collaborate with me in a learning process where the grandmother would teach her daughter and granddaughter to create some traditional crafts. I told them I would buy all materials needed for the artefact they planned to make, and film it and photograph during the process.

They were all happy to participate and the grandmother decided to teach them how to make a traditional reindeer skin pouch. It took a whole day to make the pouch. We had bought skin that is made in Iceland and with less quality than reindeer skin, as that was not available in the shop. My friend also decided to use fish skin, which would bring some Icelandic elements to the pouch. After filming the process (detail from film, see figure 5.2) I interviewed my friend, the Finnish woman that lives in Iceland, and she replied in three languages, Finnish, Icelandic and English. After editing the film down to 5.4 minutes I added the edition of the interview in three languages. The reason for selecting three different languages



Figure 5.2 Still from video *Teach me something*, 2016

was to portray the multi-layered cultural phenomena taking place. It took a few attempts to record her interpretation in the three languages. It was very interesting to observe the different approaches she used when talking in different languages. When speaking in Finnish she was at home and you could really sense how relaxed she was. When speaking in Icelandic she was more concerned if she was using correct grammar, and the English version appeared more as if she was reciting a text as she was not as comfortable in English as she was in the two other languages.

The English version:

My mother came to visit us here in Iceland last summer. While she was here she taught us how to make a traditional reindeer skin pouch, a little bag that in the old days' men working in the wilderness in Lapland would carry on their belts and store sugar and coffee in them.

The pouch is traditionally made from reindeer skin, but that is very expensive here in Iceland so we used calf skin. According to my mother reindeer skin would have been much softer and better.

We also wanted to use some traditional Icelandic materials so we sewed the front piece from fish skin.

I think cultural heritage is important. It was very nice to learn how to sew this little bag. I'm sure my mother was very happy to teach us this northern tradition. It was also interesting to hear how it was used in the old days.

Later I got as a gift a manufactured version of the same kind of pouch. So now both me and my daughter have these traditional little bags.

Ylfa uses hers as a pencil case and I use mine to carry my guitar tuner, cables and pics.

The bag we made with my mother is more personal, it has more meaning. It reminds us of my mom and her visit here. It was also fun to mix different materials from both countries.

I have taught my daughter many Finnish traditions, mostly connected to annual celebrations. One of the most popular traditions in my family is baking karjalanpiirakat, Carelian pastry. My mother used to bake them and my grandmother taught me how to get the perfect look.

Through the language we learn a lot about our cultural heritage. I've always spoken Finnish with my daughter and used to read books to her in Finnish.

Now it's my mom who reads for her over Skype. She reads all kinds of books in Finnish, novels, poetry and also Finnish folk tales like Hölmölaisten Tarinoita, similar to "The wise men of Gotham" from England. In Iceland they are called Bakkabræður. Such folktales exist in all countries.

I am not quite sure if Ylfa always understands the humour. But I'm sure she will understand it later in her life.

It is so great that we can visit each other every year. I think through our relationship we learn how to appreciate our local environment in a new way – when we put ourselves in each other's shoes we can teach each other so much, which is great.

A few months after making the pouch I met up with the mother and daughter to document their everyday use of the pouch. Since she uses her pouch as a pencil case the daughter brought me to her school where I photographed her in front of the building. The mother brought me to the place where she and her band meet for practice, and she uses her pouch to carry her guitar tuner, cables and pics. I also photographed them together in their favourite cafe where we drank hot chocolate.

The method I used when creating this work is derived from a traditional narrative form that draws on an event of significance and the experience of making the pouch. When creating the work, I found a strong influence from Dewey (2005/1934) and his emphasis on conforming and shaping experiences to maintain the narrative unity.

[An] experience has a unity that gives it its name, that meal, that storm, that rupture of friendship. The existence of this unity is constituted by a single quality that pervades the entire experience in spite of the variation of its constituent parts.... In going over an experience in mind after its

occurrence, we may find that one property rather than another was sufficiently dominant so that it characterizes the experience as a whole. (Dewey, 2005/1934, p. 38)

When creating a work reflecting on participation I wanted to touch on the fact that in modern society I feel generations are spending too little time together. Comparing it to older times when many generations lived together passing on important know-how between generations I felt the challenge to search for a contemporary setting where people are learning in an active way to appreciate each other's wisdoms. Selecting the form of a narrative enabled me to grasp the possibilities of meaning, which is what gives this work and life in general its imaginative and poetic qualities. It thus gives the viewers space for interpretation and the potential to connect to their own experience of sharing knowledge.

5.4 Empowerment through participatory pedagogy and transdisciplinary learning

In the pedagogy of the oppressed, Paulo Freire used a constructivist attitude to pedagogy that was transdisciplinary in nature. His theories embrace student centred learning and a dialogic approach; theories which have become increasingly relevant and recognised, such as his border-crossing perspective and his transdisciplinary approach (Gadotti & Torres, 2009).

Through a real-world context, one of Freire's emphases in his critical pedagogy, the transdisciplinary learning approach, links concepts and skills. The educator moves instruction beyond just blending disciplines to objectives that require pupils to both find answers to questions and to form questions they might have about the content, allowing them to faithfully create and build their own ideas. That is in line with the participatory pedagogies and notion of the praxis of scholars such as Wolff-Michael Roth (2007), that are dependent on the individual and inter-subjectivity.

A framework for 21st Century Learning⁸ (2015) has been developed by an educational developer in the USA, and is used across 21 states. They highlighted the vitality of the transdisciplinary approach, and that it has the potential to promote a depth of understanding as well as adaptability, both of which are important skills needed to succeed in our changing world.

Both in the A+EfS course and in the WIG project the student teachers were empowered by learning how to articulate their own experiences and relating these to social change and their own values and virtues. This can be seen when they express their thoughts by creating learning sequences, art works and other artistic products, including frequently working in a transdisciplinary manner. In both cases the potential for transdisciplinary knowledge production was developed through a focus on the interactions between participation and values that are used

to support normative viewpoints. In the past three years we have focused more on a transdisciplinary approach and the IAA student teachers focused on looking at pupil experiences, both in terms of what is happening in other subjects and what they have experienced in their life, something they can only find out through dialogue. However, not all of the projects in the WIG reach the transdisciplinary level. In my journal in 2014 I wrote:

It is hard for the student teachers to create transdisciplinary learning objectives. They need to include references to many disciplines (some of them do not always have those references) but they should also connect them with a human centred goal or global issue. (Am I perhaps asking for too much?) To expect all these pieces to connect for the objective to make sense in order to achieve transformative learning.

In their projects, the student teachers focused on contemporary issues and problems, and on projects to build the future as is characteristic of Freire's approach. In the A+EfS course the student teachers discussed transdisciplinary teaching and learning. We found that the objectives dealing with values and personal experience were the best practice in relation to addressing local problems and education for sustainability, in some cases using news from newspapers.

Transdisciplinary teaching is democratic in nature. The most important fundamentals for transdisciplinary teaching are a high degree of openness and curiosity from all stakeholders with an open mind that is willing to adapt, both quickly and unconventionally, to new and unexpected circumstances. When going through my journal writings this is clearly something the student teachers have discussed as the biggest learning curve at the WIG.

It was a challenge in the first days to give partial control to the pupils because the issues that we believed they would value were not always the same issues they valued as important. (Student teacher, April 2014)

The pedagogical approach at the WIG and in the A+EfS course aims at developing transdisciplinary learning and teaching using art as the medium to express the participants' ideas and thoughts. When compared with participatory pedagogy, the approach used in the WIG project and the pedagogical focus of the A+EfS course managed to meet all learning outcomes that I aimed for with a balance between direct instruction and project-oriented teaching methods.

In the future, transdisciplinary teaching could be implemented more often at the IAA. My experience has allowed me to acknowledge the value of connections between disciplines and opportunities for transdisciplinary exchange.

8 The framework was developed with input from teachers, education experts, and business leaders to define and illustrate the skills and knowledge students need to succeed in work, life and citizenship, as well as the support systems necessary for 21st century learning outcomes.

5.5 Action competence and developing efficacy

One can talk about students achieving ‘action competence’ when they have developed the ability, motivation and desire to play an active role in finding solutions to problems and issues they feel are worth a fight (Mogensen and Schnack, 2010).

In all the fieldwork assignments discussed earlier in this paper, the majority of the students had reflected on their experience and indicated their appreciation for being able to connect between theory and practice. Creating the WIG together developed broad consensus and a shared vision.

Many of the student teachers have said that they found it important to create educational settings where the focus is on the learning process rather than on a final product. Through that kind of experience, they are able to identify aspects of their own action competence. There have been students that are less motivated than others and simply said: “Can’t you just tell me how to do this?” Those students have always in the end become enthusiastic once they have found their own interests. In both the WIG and in the A+EfS course, the student teachers explored for themselves what sustainable and desirable actions are, instead of being told what to do (Sterling, 2001). That leads to, as stated by Jickling and Wals:

a very transparent society, with action competent citizens, who actively and critically participate in problem solving and decision making, and value and respect alternative ways of thinking, valuing and doing. This society may not be so sustainable from a strictly ecological point of view as represented by the eco-totalitarian society, but the people might be happier, and ultimately capable of better responding to emerging environmental issues. (Wals & Jickling, 2002, p. 225)

Many of the student teachers found they could help the pupils to understand the concept of sustainability when they connected their approaches to culture and history. In this way they encouraged creative and critical thinking through invoking the principles by which people desire to live. The student teachers also experienced the development of their action competence by connecting their activities to the pupils’ lives.

In order for students to achieve action competence and develop efficacy, it is essential that they have space to go deep into issues of their own interest. Many of the assignments in the A+EfS course encourage this.

For example, one of the students (2014) brought in a clipping about palm oil consumption for the newspaper assignment discussed in research question #2. Through finding the clip and introducing it in class, she was encouraged to research deeper into the palm oil business in Indonesia where one of the three big tropical rainforests remaining in the world is located. She told the group that locals frequently set fires intentionally to the forest in order to create palm oil

plantations, which grow the cheapest vegetable oil in the world. All the participants felt guilty when she mentioned all the products that use palm oil. It is found in cooking oil and almost all processed food, in our cosmetics, and in our detergents. The expansion of the palm oil industries has taken over 80% of the rainforest. What is at stake here is both people's livelihood, and the survival of wild animals like elephants, rhinos and orangutans. This student searched for knowledge, and her willingness to share her findings helped her to achieve action competence and develop efficacy. Her research also taught me about the palm oil industry and now I am more careful about what I buy. This shows how everyone in the class can learn from each other. I wrote in my journal:

While people keep on buying stuff with palm-oil the growth of palm-oil plantations will continue. The decisions I make when choosing what to buy in supermarkets affects ecosystems in other places. Changing my diet is one way to start my change.

The WIG and the student-driven initiatives helped the student teachers to develop efficacy and construct settings where they can evaluate whether their artistic activities helped the pupils to make connections between their own experience and the messages being conveyed in the activities on which they worked.

Many of the students that took the A+EfS class reported that they felt making an artwork as a part of the final reflection of the course had had an impact on their learning. These included, for example, different ways of using material in a sustainable manner. Ásdís Spanó, who created an installation from outdated biscuits that she found in a bin in front of a supermarket, continued to work on the topic of sustainable use of materials in her thesis. She developed expertise in this area and has had a great influence on the teaching community in Iceland by frequently giving talks at public conferences. Another artist later worked with her ideas from the course in her thesis too, and this was based on her observations in the class on how to use the ideas of narratives, stories and drama when teaching students about sustainability issues.

Local context, as seen both in the community and the environment, has played a strong role in students achieving a better understanding of EfS. Some of the former A+EfS students have developed efficacy creating projects as part of their theses, including settings for increased community understanding of the local context. Guðrún Hjörleifsdóttir created an environmental information board on the local beach in Akranes. She felt that being in the students' local area had an impact on student learning.

The same was true with parents and teachers participating in the WIG project. They talked about a better understanding of their local garden when indicating the meaning and relevance that this gave to the students' experience when working with environmental issues.

The focus was on connecting theory and practice in A+EfS and the WIG

project. From year three of this research, the later student teachers showed more signs of higher order thinking than in earlier years of this research and before we included those projects in the programme. By higher order thinking skills I mean activities such as asking critical questions more frequently, comparing different perspectives, creating meaning, drawing conclusions, and developing opinions and values.

A focus on pupils' sensory engagement has frequently been a key component in the master theses of students in the A+EfS course. Many of them have come to the conclusion that it is important to include in students' learning a focus on being able to see, hear, touch, smell and 'live the experience'.

All the workshops in teacher education at the IAA have originated with the goal of preparing the students for including EfS as part of their professional theory. According to the students' project reports the experience was seen as an educative one:

I feel motivated to have EfS as my leading principle as a teacher.

We're encouraged to take risks, try new things and be a bit more creative and to work together and develop and share good practice. I think we are all ready to focus on EfS when we start to teach in schools after graduation.

If you have respect for others and their ideas, which we have, we all learn from each other.

... Because we [the student teachers] had all worked together before we went to do the fieldwork with the kids I knew they would be very open and make things happen..... we all knew we were trying to transform education, we had to find a way to make it practical. I think we were all surprised at how great the kids are, and how much they know.

We have proved ourselves successful and effective in what we've done in the WIG, it's made us confident in our practice and more prepared to take part in changing the school system and put more focus on EfS.

It's a lovely atmosphere here at the Botanical Garden. It's a lovely school we worked with and I think we did a very good job. Everyone was determined not to make mistakes and there were of course certain things where we thought 'I wish I'd done that'. But you learn from it at the end of the day.

My experience and reflections suggest that a course like A+EfS is a good way to create a setting for a collective agency and participatory pedagogy where a group of students are given the task to achieve shared knowledge and skills based on both the participants' resources and the interactive, coordinative and synergistic

dynamics of their transactions.

The beliefs shared by the participants and their work together influence the type of future they want to achieve through collective action. In being a part of a group it is the behaviour of its members that promotes its operations. Two of the students state in this context:

It helped me to shape and clarify my ideas when articulating to others and helps shape and clarify ideas. (Student teacher, 2015)

The collaboration had a positive impact on the learning process of the students:

A group has more resources to call on than an individual. (Student teacher, 2015)

I will continue to use the notion of efficacy in my teacher education practice to stimulate a reconstruction of students' existing beliefs and knowledge. Trust and mutual support were stimulating factors for the participants and they agreed that they were more willing to risk expressing only partly formed ideas, to ask questions, to admit to a lack of understanding and to challenge fellow learners in the small group context. When sharing, they developed self-confidence as learners, and the positive reaction of peers contributed to valuing personal experience and having confidence in their capacity to generate knowledge.

This suggests that trust must be a key element in professional development among scholars when developing mutual objectives. There are many indicators that the EfS activities at IAA empowered the participants. The student teachers became engaged in EfS both through participation, involving both action and thought. During the time they spent as student teachers, they were affected by a wide range of influences, past experiences, cultural and social norms, memories and our local settings. They could each use their own artistic specialisation and skills and by reflecting on their experience they found ways to understand not only themselves but also the phenomenon of sustainability in its many forms.

Values, to some extent, are connected to all these forms and the range of issues facing contemporary society. They represent a strong guiding force, shaping our attitudes and behaviour throughout our lives. EfS can get people to internalise their values and in the different projects which were introduced to them, it seems that EfS has the potential to get people to believe in what they observe (Holmes et al., 2011). Art teachers can take up a wide range of EfS issues such as: promoting sustainable use of materials; maintaining and developing existing technology and knowledge of issues in visual arts; and working with content that increases understanding of issues relating to sustainability. My findings in this Icelandic study suggest that we focus on Biesta's (2010: 493) argument:

To concede that the knowledge we can gain through experimentation is knowledge about relationships and, more specifically, about relationships between our actions and their consequences.

In the A+EfS course and the WIG participation and sustainability awareness were enriched by collaboration and harnessing the participants' diverse knowledge and their experiences. It is the combination of individual change and collective change that provided the potential for empowerment and 'action efficacy', which I will return to in the reflections and implications in chapter six.

In this research, I have facilitated reflection, debates, arguments, dissent and consensus, to stimulate the articulation of multiple voices and positions, and thus to lay the foundations for empowerment. When empowerment is based on inner transformation it can motivate people to improve not only their own lives but also the lives of others (McLaughlin & Davidson, 1994). Individual empowerment, i.e. inner transformation through collective action in the courses focusing on EfS, has its own significance though it may differ from what is visible as external community development.

5.6 Continuing opportunities in regards to education for sustainability

As a programme director at the Department of Art Education it is one of my tasks to develop new courses and activities that meet the needs of the student body each year. In order to do so I conduct interviews with the students focusing on visual art education, about 30 in all. For me it is essential to establish this contact so that trust materialises through our personal interest in what they are doing.

Over the past eight years we have introduced new possibilities into the department such as working on independent projects where students work outside of academia, creating workshops in different settings that they choose and organise themselves.

Many of the students that have taken the A+EfS course developed a strong interest in going deeper into the field of sustainability. For that reason, every year I organise a short, intensive, more specialised course that is also open for alumnae so that we can keep track of one another. One former student who took a summer course in summer 2016 for in-service art and design teachers said:

I think it is amazing how you can always learn new things about EfS.
I have taken many courses here at the department but I am always introduced to new aspects and new methods.

This responds to an understanding that there is a dichotomised standpoint of either being dominated or powerless and that this needs to be recognised in order to be prepared to act and challenge injustice. Wolff-Michael Roth & Hannah Arendt's notion of praxis however, is dependent on the individual and inter subjectivity.

One of the student teachers who took a 4 ECTS (80-100 hour independent work) course reported on her experience in an interview:

I think there are loads of opportunities for doing projects out in the

community. I think the individual person influences how much of this learning they actually take on . . . there are some people in the school who are perhaps a little more shy than I am, they aren't accessing all the opportunities . . . The two-year curriculum is good in the programme, but it is a classic one . . . Some people wouldn't dream of going and doing an independent project like I did, so they're missing out on that learning opportunity, and yet it's there for everybody.

We have also introduced possibilities for student teachers to take part in conferences and exhibitions (see appendix 4), in which they put in the context of their studies with a written commentary. In the spring, after assessing all the applications, we also have to assess each group that enters the programme and come up with elective courses that fit their needs.

The memory workshop that is discussed in article 2 is one such course and it took place in year 2. The participatory, critical place-based approach used in that course turned out to be a fruitful approach for the student teachers. The participants engaged with the community at different levels.

5.7 Being a part of a group

Even though beliefs of collective efficacy (Goddard, Hoy, & Woolfolk Hoy, 2000) include emergent aspects, they serve functions similar to those of personal efficacy beliefs and operate through similar processes (Bandura, 1997). The shared beliefs in the teacher educators' collective efficacy in the WIG influences the types of future they want to achieve through collective action (Bandura, 1997).

In being a part of a group at the IAA, as well as the alumni group, it is the behaviour of these members that promotes its operations. Articulating to others helps shape and clarify ideas; a group has more resources to call on than an individual. I have used this when preparing the teacher education classes to stimulate reconstruction of existing beliefs and knowledge. Trust and mutual support are stimulating factors for the student teachers and they became more likely to risk expressing partly formed ideas, asking questions, acknowledging their lack of understanding and challenging fellow learners in the small group context. When sharing they developed self-confidence as learners and the positive reaction of peers contributed to valuable personal experience and developing confidence in their capacity to generate knowledge. When the student teachers tell stories about their experience from taking part in EfS with pupils in the WIG project and in other projects, they are working with tacit knowledge. Teacher knowledge is often described as tacit or craft knowledge beyond verbalisation (Brown & McIntyre, 1993; Ottesen, 2007).

Being part of a group is also empowering:

Power as empowerment of others. The ideal structure for exerting this

kind of power is not the hierarchy but the network, the central metaphor of the ecological paradigm. In a social network, people are empowered by being connected to the network. Power as empowerment means facilitating this connectedness. (Capra, & Luisi, 2014, p. 35)

Results from research have shown that tacit knowledge has a positive and significant impact on empowerment (Amirkhani & Heydari, 2015). Tacit knowledge is personal, involves emotions and values of the given individual and their sharing presumes reflection. The individual experiences his or her stories in experiential texts and tells stories using the same words he or she uses to reflect on life and explain it to others. Through stories we give moral, practical or aesthetic meaning to situations and are able to understand ourselves, our broader culture and our knowledge. The individual experiences his or her stories about their experience in experiential texts using the same words he or she used to reflect on life and explain it to others. Through stories, the students have given moral, practical and aesthetic meaning to situations at the Botanical Garden and are able to better understand themselves, the broader culture and their knowledge.

5.8 Participatory art

In preparing the works in the exhibition *LOOKING back - around - forward* I made use of aesthetic, embodied, experimental and emotional ways of creating knowledge. The exhibition presented findings from my arts-based doctoral research that took a participatory, collaborative approach to understanding the significance of working together. The journey of sustainable development requires that we do not, and cannot, take this path alone. Through engaging with the exhibition the visitor was to experience the possibility of finding and connecting with corresponding spirits who share a common understanding of the need for personal responsibility and the notion that art can be, and is, a potent agent of change.

When organising the exhibition I used the feedback from the first two exhibitions to make sure that the three exhibits would provide different perspectives on the input and potential contemporary art has for education for sustainability. I also used the same tetrahedron format as with the others (figure 5.3) but with new components. In the exhibition *LOOKING back - around - forward* the main focus was on participation. I tried to make sense of present time through theories of place-based education and everyday aesthetics. I used different artistic mediums to make my thinking visible. In my artistic practice, I was concerned with my surroundings, both natural and man-made.

In this exhibition I both deliberated on the spaces and surrounding places and also moved back and forth in time, revisiting my own past and the people in it and moving ahead to speculate on what might be waiting for the next generation.

In my pursuit of sustainability I would like the world to be shared, understood and conserved.

When organising the exhibition *LOOKING back - around - forward* (Appendix 10) six concerns guided my way. The concerns arose from the application of the relational assessment tool in figure 5.3. The concerns are marked in numbers 1-6 reflecting on relations between the points. Those same concerns have also been valuable when writing this review and evaluating my processes:

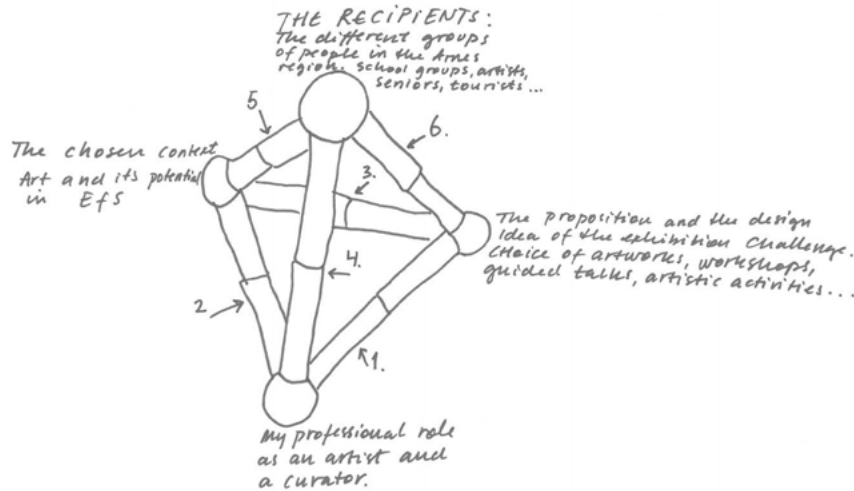


Figure 5.3 Tetrahedron used to plan the exhibition *LOOKING back - around - forward*

1. How can I develop different activities within the exhibition that offer participation and engagements that will deliver a good overview of the concept sustainability? What elements could I include in approaches that include direct participation?
2. What do I know about the concept sustainability that I can share through curating an art exhibition? What do I know about participatory art? How can I create artworks that provoke curiosity, and encourage museum visitors to participate? What kind of work connects to self-identity and participation?
3. What kind of environment could be created within the museum that includes its possible environmental, social, cultural effects on sustainability revolved around Rovaniemi? What kind of impact can it have within and beyond the preparation in Rovaniemi?
4. What kind of relationship can I form with the general museum visitors which are tourists passing through? How can I connect to the people from Rovaniemi? How can I use my communication skills and show interest and will to participate?

5. Why do the museum visitors need to learn about sustainability? What do they need to know about sustainability? How can I develop settings that are useful for the diverse visitors of the Arktikum Museum? How can the exhibition show new perspectives of sustainability related to issues with a focus on participation? What is needed for the different groups that visit the museum?
6. What kind of activities are interesting for the diverse groups that visit Arktikum Art Museum? (most of them only stop for short time at the museum) How can the activities that I provide include creative opportunities and participation?

While educational reformers in the Dewey/ Freire tradition of thinking are critical of industrial culture, including the way in which life processes are reduced to fit the mechanistic model, they nevertheless think of change as linear and progressive, the individual or societal group as engaged in the continual process of reconstructing intergenerational knowledge, and that there is only one cultural way of knowing - experimental inquiry of Dewey, critical reflection for Freire. (Bower, 2006, p. 35)

In some of the works I focused on regional identity with an emphasis on public pedagogy and involvement, encouraging the viewer to see, think and wonder. I aimed to enable the viewer to participate in the productive interpretation of art research to generate new meanings, embodied in concrete works of art. The work *Colours of Rovaniemi* is a work that required participation on many levels, both through the creation process and also in the exhibition because the museum visitor had to interact with the work.

5.9 *Colours of Rovaniemi*

The work *Colours of Rovaniemi* (figure 5.4) was created with the participation of people from Rovaniemi and also demanded active participation from the viewer when looking at the work. The aim of the work is to reveal new depths of the experience of being in Rovaniemi, to engage the viewers or inhabitants, rather than abstracting that place into generalisations that apply just as well to any other place.

The work is inspired by my reading of the book *Everyday Aesthetics* by Yuriko Saito. In her writings on everyday aesthetics, she focuses on the aesthetics of objects, environments and situations from our everyday life. She stresses that all people, both professionals and non-professionals participate in the world-making project as citizens and consumers and everyday aesthetics plays an important role (Saito, 2013). When planning the exhibition in the Arktikum Museum, I had decided to make participation the theme with a strong focus on including the

inhabitants of Rovaniemi.

Saito's ideas of the power of everyday aesthetics encouraged my creative thinking and I decided to work on the thinking routine for critique with selected inhabitants: see/think/wonder (Ritchhart et al., 2011) in combination with Saito's ideas on how you can work on forming attitudes that can guide us towards actions to determine the quality of life and the state of the world for better or worse.

Those ideas connect to David Orr's ideas of the importance of awareness of the natural elements in education discussed in chapter three.

We are moved to act more often, more consistently, and more profoundly by the experience of beauty in all of its forms than by intellectual arguments, abstract appeals to duty or ever by fear. (Orr, 2002, p. 178-179)

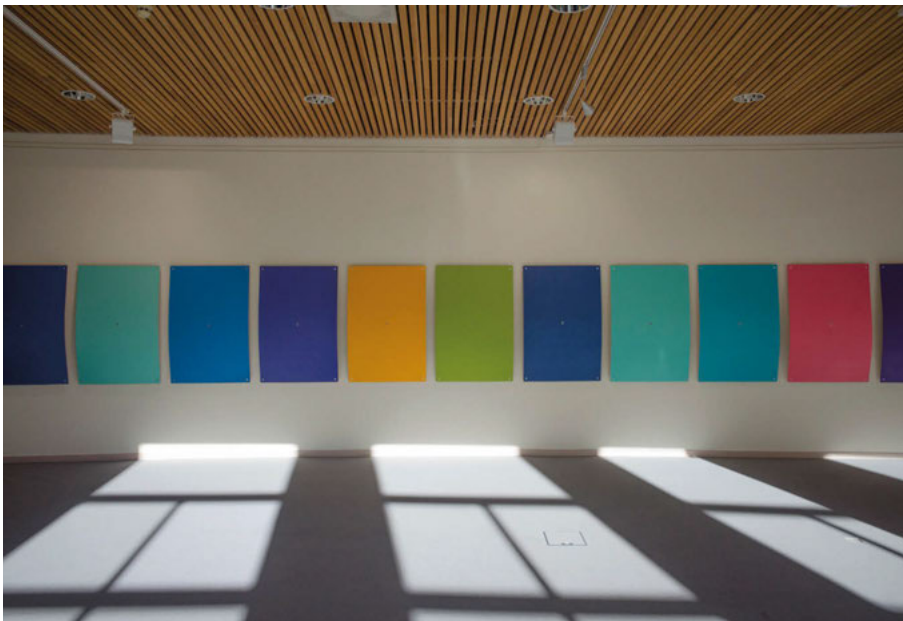


Figure 5.4 *Colours of Rovaniemi, 2015*

I interviewed seventeen individuals and asked them to tell me about places within Rovaniemi they believe people could enjoy better. The places are very different and represent people's perceptions of alternate spaces, alternate routes, journeys through the city and the much needed intermittent spaces of pause. Most of the places the participants selected are connected to water, either the river or lakes.

The same people in Rovaniemi were asked to choose a colour that makes them feel good from 314 colour samples (figure 5.5). The colours comprise most of the colours we see in the world around us. Most of the participants chose colours in a blue tone and connected them to Finnish light and nature.



Figure 5.5 Colour samples



Figure 5.6 Fish eye peepholes

I wanted to create an element in the exhibition so the work would require some involvement from museum visitors. I bought ‘fish eye’ peepholes (figure 5.6), one for each panel, that normally are used in external entry doors so that someone can be seen before the door is opened. That stands as a metaphor of the privacy the participants shared with me and the museum guests.

Each panel is the size 140x100 cm which is large enough to have a physical influence on the viewer.

When peeping through the surface of the works you find photographs of the places the participants selected. On top of the floor skirting I glued quotes from participants such as a middle-aged man who loves photography. He pointed out that it is sometimes hard to enter those places during the winter.

The bird watching tower close to the university is a great place to take photos.

The parking house near Arktikum House, which is normally empty could be used for something else like an art gallery and cafés, for people to use it, not for cars. This would bring people near the river.

The Kemijoen river flows behind the Arctic Centre. It is a sandy beach down there that has old Viking ruin stones. It is a peaceful place down there. Where the water meets the land is where the spiritual and the physical world come together. It is nice because it is a little bit away from the busy road.

With the help of the participants I found the places on Google earth, and placed them behind the panels. Originally I had planned to photograph each place but after trying it I found I was too partial. The Google earth images are neutral and viewers can connect to their own virtual travel.

I did some experiments with the installation and decided to work on masonite board which can easily bend. The curve created a tension, which became an important element. I used acrylic paint that was mixed in colours identical to the colours on the cards the participants used.



Figure 5.7 Google earth images from the places in Rovaniemi

With the work *Colours of Rovaniemi* (figure 5.4 & 5.11) I point out the importance of developing and cultivating aesthetic literacy and utilizing the power of aesthetics towards making a better world. One way to do so is to take a stand and make a contribution with what people might experience as seemingly insignificant and trivial but is important for the whole as a collective effort.

The work also gives the potential of self-discovery through participating in the art making and through engaging in the art at the museum. The work gave inhabitants of Rovaniemi a chance to go through self-discovery, transcending their own horizon.

Works of art are means by which we enter, through imagination and the emotions they evoke, into other forms of relationship and participation than our own. (Dewey, 2005/1938, p. 347)

To some degree we become artists ourselves as we undertake this integration, and, by bringing it to pass, our own experience is reoriented. Barriers are dissolved, limiting prejudices melt away...This insensible melting is far more efficacious than the change effected by reasoning, because it enters directly into attitude. (Dewey, 2005/1938, p. 334)

The AR findings have led to the same conclusions that a sense of place grows from identifying oneself in relation to a particular piece of land. Sense of place is also a combination of the characteristics that make a place special and unique, involving the human experience in a landscape and in the local environment (Jónsdóttir, 2013).

In this exhibition the value of recognising the important and changing role of culture in contemporary society was fostered. The aim of the art was not to find answers, but rather to make people think and question.

The work reflects on my prior writings on EfS and I think I have managed to make my thinking on EFA visible. When working on this work the art creation was useful in the thinking process when I tried to be as sensitive as I could to the world around me and respond to things that I thought might be relevant to the people of Rovaniemi. I brought the topics I discovered to the artwork, focusing on

being true and honest just like all the people that generously worked with me on it. This work inspired and provoked people to reflect upon these issues, regardless of their familiarity with the places the participants selected and the vocabulary they used. It can be connected to Wenger's social perspectives of learning (1998) as he discusses how we learn and establish learning.

The ability to negotiate new meanings...[which is] fundamentally experimental and fundamentally social. (Wenger, 1998, p. 226-227)



Figure 5.8 Museum visitors interacting with *Colours of Rovaniemi*, 2016

I would have liked to take the work further, working more site specifically from each place the participants selected, but only having three weeks in total working on the piece in Rovaniemi created some limitations.

I would like to create another work based on my experience in Rovaniemi in an Icelandic setting. It would give interesting possibilities for comparisons.

5.10 *Everything Connects*

The work *Everything Connects* (figure 5.9 & 5.10) is in strong relation to the work *colours of Rovaniemi*. It is built on the same principles except in this work I invite the museum visitors to co-produce a new piece of work. In this work visitors could express their ideas for developing Rovaniemi or to reflect on the same concepts as in the other works of this exhibition. Here the line between the participants and the artist has been blurred. The work includes a space that is designed for participation involving a number of variables, where individuals' behaviour is self-

directed as they are reminded that everything around us exists jointly in a delicate balance. The humans are at the top of the food chain; therefore it is important that we understand the balance between nature and ourselves.

We need to respect life around us from the tiniest insect to the tallest trees. We need to consider the life of the planet as a gift. We should consider our reasons for utilising natural resources and think of them as the organic matter of the earth viewed as a sacred circle of life, but not as linear growth for human satisfaction.



Figure 5.9 Participants in the work *Everything Connects*

5.11 Participatory learning in relation to UNESCO's approach

When the learning pillars identified by UNESCO are connected to the context of the EfS and the research questions discussed above, there is a clear need to foster diverse forms of participation in EfS. I use these pillars to analyse my own learning journey during the six years of my project.



Figure 5.10 *Everything Connects*, 2016

5.12 Summary

In this chapter I have explored various aspects of participation in my practice. The characteristics of critical pedagogy and the aims of my work have included student empowerment, social justice, liberation, democracy, and responsible citizenship. Using place-based critical pedagogy in EfS not only transforms classroom practices, but can also provide actions that transform the community like in the WIG.

The artistic actions both in the exhibition *LOOKING back - around - forward* and in the processes at IAA have shown me that collective efficacy for sustainable development offers actions of a different nature.

After my experiences in all the exhibitions I remarked in my journal that I had developed both self-efficacy and action competence at organising transformative learning settings for the visitors. While writing this review I have realized the strong connection to transgressive learning which is evident in many of the activities described in chapters 3 to 5. Working with issues related to moral action and ethics have provided dynamic relationships for understanding issues related to sustainability. Collective efficacy builds on trust in other people's ability and professionalism. Collective efficacy requires joint motivation which is the same characteristic as in transgressive processes where knowledge is generated, aiming at enriching the 'common good' through a process of connecting.

With respect to participatory processes and action research it could be argued that the field of education is far in advance of the natural sciences in this respect, although there are some tokenistic forms of participation being used in science projects in the form of citizen science projects. (Gray & Colucci-Gray, 2014, p. 27)

In the chapter I have explained to what extent participation can influence student teachers and exhibition visitors. I have explained how pedagogical settings that provide participation can develop in visitors empathetic attitudes toward nature. I have emphasised the importance of direct experience of nature; discussions about environmental problems, student driven initiatives in environmental activities and role models.

The WIG has convinced me of the importance of active engagement of young people in pro-environmental actions connecting the school and the community. The experience of the student teachers in the Botanical Garden suggests that they have the potential to encourage their students to analyse and discuss environmental problems. The empowerment of the teacher students in the WIG is developed in collective pro-environmental actions.

Table 5.1

Learning about sustainability through art and participation in the IAA courses with regard to the UNESCO pillars (2012).

UNESCO Pillars -> IAA courses: learning about sustainability through art:

Learning to know

Since I started the doctoral journey it has been important for me to get to know the fundamental issues behind EfS before designing and implementing actions towards sustainability. This knowledge has developed a lot since I systematically started to study EfS. For the last eight years I have developed my approach and discovered it to be important to allow students themselves to select some of the reading material, online lectures, and talks. That way they connected to their own experience.

Learning to do

The fieldwork at IAA has helped me and the student teachers to understand that our own actions have influence (action competence). It was therefore important to create settings for exhibiting their works and allow them to work on ideas in the community that they have developed in connection to their study. When the student teachers experienced that their work has an influence it becomes more likely that they will select EfS issues that they think are of importance. By creating a project like the WIG, the student teachers could practice good quality arts education and discover its essential component as part of holistic education, both formal and informal. We have discovered that the project has the potential to enhance self-esteem, a sense of identity, unity and diversity. The student teachers have discussed different ways to understand sustainable development in their local society.

The focus on maintaining sustainable knowledge encouraged student teachers' appreciation and understanding of cultural heritage at the same time as it enabled them to engage in innovative thinking and designing for the future.

Learning to live together

Through the artistic projects and the field work, the students have gained skills in common responsibility and tolerance. Often different works of art have been used as metaphors as they have been examined and throughout the creative process it was important to keep in mind that different points of view exist and are of equal importance.

Through my learning activities for educators and artists I promoted EfS and encourage participants to teach about sustainability through art practices, with a special focus on participatory pedagogy.

Through the exhibitions a large number of visitors from diverse backgrounds had the potential to open up to an understanding of EfS and their cultural environment through diverse participation.

Learning to be

To know themselves in the context of complicated social contexts and to develop attitudes towards society and the environment. In the A+EfS the student teachers reflected on the importance of trying for themselves the artistic process of reflecting on their own local environment. Many works of art dealt with subjects that are better understood when discussed. The artistic methods allow for more diverse reflections on my own and the participants' sensory experience of a place, than the written text. In my educational settings, both in the museums and at the IAA, I wanted the participants to be able to contribute to their intellectual and artistic fulfilment. I aimed for enhancing the value of the cultural heritage and promoting cultural diversity.

Learning to transform oneself and society

Through this research I have learnt to systematically use actions that influence the sustainability of society. I have created settings for student teachers that develop their efficacy and action competence where their own knowledge can be used to arrive at informed decisions for the good of themselves and others, with a focus on increased participatory virtues where individuals have the potential to make a living, be more creative in the workplace and achieve well-being in other spheres of life. That includes encouraging freedom of expression and enriches the learner's creativity and imagination:

Here the concern was not with order and efficiency but with increasing individual autonomy. The goal of social change is increased individual participation and control of the social system. This model rests on the conviction that a great deal of the power of modern social institutions depends on the willingness of the people to accept the authority and legitimacy of these institutions. In this context the question becomes, not how to fit the individual into the social machine, but why people are willing to accept work without personal satisfaction and authority which limits freedom. (Spring, 1998, p. 131)

6 Reflections and implications

Over a six year period I have conducted action research on my practice at IAA as a teacher educator, and I have undertaken art-based research and artistic actions as a curator and artist. Focusing the meta question on the potential of art in EfS. I published seven articles, made many presentations and curated and contributed to three art exhibitions, preparing catalogues for each. I worked intensively, but I also gained a sense of personal and professional fulfilment. In this review of my research I take the opportunity to reflect upon my study as a whole, discuss what I have learnt from it, reflect on the three research questions discussed in chapters 3-5 and speculate on the lessons learned for arts-based approaches in sustainability education.

6.1 Developing my own practice and understanding actions for sustainability

The purpose of this research was to create and reflect on the processes I use as an art educator concerned with exploring the potential of art for sustainability education. In particular, I looked at the questions and dilemmas I am confronted with in my practice when meeting the needs of student teachers. When I started my action research project I had about fifteen years' experience as an art educator both in lower and upper secondary schools, and I was starting my third year as an academic preparing student teachers for EfS. I documented the changes I

experienced with the intention of creating settings within my practice to develop sustainability awareness, while I also developed practices suited to meet their needs. At the same time, I developed a deeper understanding of the concept of sustainability and EfS.

I acquired comprehensive knowledge of how to work with EfS with artists that are learning to become art teachers, by reflecting both on successful practices and those that needed further development. I analysed my own practice while developing new knowledge about EfS that had operational significance for my workplace, the art education department at the IAA, and this analysis led me to formulate guidelines for student teacher training for sustainability.

In my research, I was concerned with the nature of my practice at the IAA and how it developed over a period of six years in connection to EfS. The primary context of this research was my activities as an assistant professor and programme director in visual art education throughout the research period. After I took the decision to include arts-based research, the research context was extended to galleries and exhibitions. The potential of contemporary visual arts in EfS is discussed in the exhibition catalogues and in the articles. I explored the relevance of artistic and critical place-based education in EfS. Examples of art works are given in the printed publication, where there is an ongoing discussion of how sustainability can be interpreted and embodied in art education practice.

Since EfS was a relatively new concept in art teachers' education at the time when I started to work on my research, I was stimulated by creativity and curiosity to investigate the potential of art in education for sustainability. I wanted to know what had been done and what I could do in this context. As a teacher educator at IAA, I felt strongly about the relationship between my values and my drive to put these values into actions. I looked for integration amongst different fields, and methods which would support my development. In this situation, the underlying questions throughout the whole process have focused on what values the student teachers and I needed to acquire, and how, and with whom, so they could learn about such issues. All these aspects relate to artistic pedagogy and the culture of learning, which could be referred to as the learning environment (Kelly, 2004). Significant questions concerned, i.e. where do we best learn EfS and what community dynamics are desirable? In chapters 3-5 I have discussed three themes from the perspective of the teacher educator and artistic actions.

The importance of focusing on intrinsic and collective values in education became clear as the research progressed. After rethinking the processes and knowledge achieved in developing my practice, I developed activities that included social interaction, to find out the different ways in which things can work. I experimented with moving from individualism to more cooperative and collaborative methods, from control to interaction, because our common actions and decisions affect our health and the health of the earth we inhabit. I fully appreciate the pedagogical nature of artistic actions: they involve empowerment and most importantly, develop values. Working with and from sustainability values

encourages a thorough review of how we relate to nature and our environment, and how we relate to each other.

Through readings, critical thinking, artistic actions, written reflections, collaboration with different professionals, both in research groups and with my students and colleagues, and in my investigation as a whole, I experienced a deep personal change in my theory of practice, a change I hope to continue to develop throughout my whole career. In this closing chapter, I engage with all the articles and exhibitions that I have created in connection to this research and draw together what I have learnt about my theory of practice.

6.2 Action efficacy: and action competence

When I look at the WIG project in Freirean terms, the student teachers developed settings where the pupils could name their world and interrogate their reality. Through collaboration, they sought solutions to the problems they raised, discussed how the solutions would be tested, shared ideas with the whole group, modified their ideas and deepened them through further dialogue each day. When concluding the culminating activity of the project in the WIG, the student teachers co-wrote and produced a manuscript of their actions, describing how their thinking had developed:

Evaluation of the discussion is jointly pursued, as the learners deepen the historical context of their knowledge, and as they think about their thinking. The process leads people towards conscientisation, or a state of being able to engage in an informed critique of their world, which raises political literacy. This can enhance the confidence that is a step towards collectively challenging the status quo to bring about transformative action. (Hickling-Hudson, 2014, p. 6-7).

Another important principle derived from Freire's approach and embedded in the workshop was that a group needs a theory of transformative action in order to move from critically analysing a situation to envisaging how to change it. People with a strong sense of efficacy can view problems as tasks that they can master. They have the potential to develop deeper interest in the activities in which they participate, along with a stronger sense of commitment to their interests and activities. At the same time, they can recover quickly from setbacks and disappointments (Bandura, 1997).

Personal agency operates within a broad network of sociostructural influences. In these agentic transactions, people are producers as well as products of social systems. Social cognitive theory distinguishes among three modes of agency: direct personal agency, proxy agency that relies on others to act on one's behalf to secure desired outcomes, and collective agency exercised through socially coordinative and interdependent effort. (Bandura, 2001, p. 1)

I felt that all the student teachers in the WIG project were given the chance to develop collaborative skills including active listening, identification of personal goals in connection to beliefs, identification of prior knowledge and using mediating questions to mention but a few; those actions can also be connected to the development of efficacy. The pedagogical experiences of the student teachers seemed to lead to increasing efficacy, developing their potential of taking EfS further based on their own theories of teaching.

Action competence is a concept developed in Denmark that has been used in education for sustainability. When cultivated, action competence helps students develop their individual capacity for critically selecting and conducting possible actions towards societal problems. Students form their knowledge from a range of perspectives, their choices are informed and so are their decisions for taking action (Breiting & Mogensen, 1999; Jensen & Schnack, 1997). Many art educators have addressed the importance of empowering students to understand and affect their role in community and society (Eisner, 2002; Feldman, Csikszentmihalyi, & Gardner, 1994; Goldbard, 2006).

The settings for students developing action competence includes the learners' experiences of the world and reflection by thinking deeply and critically about their experiences, which results in transformed knowledge. The learner does that through connecting between thinking, feeling, and developing coherence in their understanding of the world. Through holistic thinking, the learner generates a vision for a sustainable future, and is able to take action for sustainability.

About half-way through the project I began to link the three concepts of empowerment, self-efficacy, and action competence, and together they acquired the term 'action efficacy'. In a democratic society, there is a tremendous need for action efficacy which is understood here as a key dimension of learning with relevance in daily life. In this research, my conception of action efficacy is an individual's motivation and capacity to select and conduct informed, democratic and responsible actions so that sustainability issues can be addressed in a critical and effective way. Some of the student teachers included action efficacy in their final projects (explained in figure 1.3). As visual artists, it was important for them to value the potential of the knowledge that contemporary art and art practices could provide.

I would claim that I also developed action efficacy as I felt increasingly able to take on tasks that earlier had seemed daunting, for example, art exhibitions that were more successful than I originally envisaged, and through them, I have gained recognition for my work in an international context. The WIG is also a result of action on my pedagogical instincts and could be counted as an example of my own action efficacy.

6.3 Empowerment principles

One of my major goals as a teacher educator has been to find ways to help the

student teachers at the IAA to feel empowered. Developing participatory actions through a Freirean dialogic approach enriched their voice, which “fundamentally is about the right to speak” (Hall, 1993) and strives to enhance the power of the individual. In art education this is important because according to Eisner (2002), as students engage in the arts, they learn skills such as observation, problem-solving, organizing, and communicating that not only are necessary for the artistic experience, but are also skills that can be transferred to other learning situations.

6.3.1 Pedagogy and empowerment

In the role of the teacher educator, I looked for diverse ways for artists who are becoming art teachers to feel empowered and include EfS in their theory of practice. Those artists have a very diverse background, so to be effective my tools needed to be diverse. In the interviews I took with student teachers before starting each A+EfS course, it seemed to me that what most of them needed were settings to develop efficacy and action competence, attributes that are important when working with sustainability and in EfS. The artists had artistic resources but needed other resources to help them with twinning art with EfS, diverse information, and general support when choosing their path in art education with independent initiatives.

These realisations guided my teaching as described in articles 2 and 4. I frequently experienced a sense of empowerment through the learning processes I shared with the student teachers. Taking part in these artistic activities and organising exhibitions gave me a chance to connect to society in a meaningful way. My increasing empowerment had a strong influence on my artistic actions, as sometimes discussions about issues related to sustainability that had taken place in the IAA classes became the starting point of my own art creations.

I wanted the student teachers to develop their own beliefs and reasons for action. Efficacy and action competence could help them connect the subject knowledge of art and design with their teaching knowledge, thus producing their own pedagogical knowledge through projects; examples of this connection included the Workshop in the Reykjavik Botanical Garden (WIG) and the Art and education for sustainability course (A+EfS).

My earlier journal writings (appendix 1-3) indicate that it was important not to underestimate the amount of time needed to work on assignments that connect such different types of knowledge. Discussions about experiences where the student teachers connected theory with practice when experimenting with EfS were crucial when fostering implicit and explicit knowledge. The learning that took place when the student teachers shared each other’s experience usually happened informally, when the student teachers were not even aware of the learning process, and this allowed them to work with tacit knowledge. My findings supported my initial assumption, which was that tacit knowledge is personal, and involves the emotions

and values of the given individual. Discussions about experiences and experiments helped the student teacher to share knowledge, engage in communal reflection and navigate the complexities of topics related to sustainability.

As discussed in the last chapter and in article 7 it is important to nourish tacit knowledge in teacher education. Tacit knowledge is personal and different for everyone, because it is closely connected with a specific person and context. Tacit knowledge is not easy to explain in a straightforward manner since it is deeply rooted in a person's actions, experience, thoughts and values (Wasonga & Murphy, 2006). In my classes the student teachers shared tacit knowledge through stories from shared events which had the greatest influence on their career in education, and which they would tell their future and beginning colleagues.

6.3.2 Empowering principles

Empowering principles that were introduced in chapter 2 have influenced my approaches and affected the choice of methods by which to work.

- A safe and supportive environment
- Individual and community level orientation
- Shared power
- Socio-political change goals
- Meaningful participation
- Critical reflection

6.3.3 Environment and community

For the student teachers, it has been important to work within a safe and supportive environment. That does not mean that they never go out of their comfort zone. But they are challenged to take risks and try new things, i.e. connecting theory and practice when they are ready. Developing the WIG was one of my initiatives to create settings for them to try their boundaries. Through their final theses many of them have developed action efficacy. Examples of this are: the thesis by Húgrún Þorsteinsdóttir discussed how you can learn about sustainability through school buildings. She based her writings on her knowledge as an architect; Guðrún Hjörleifsdóttir in her school based project looked at how EfS can work with theories of place-based education for community. The project included a collaborative effort between the Akranes Environmental Protection Agency and an Akranes elementary school. Helena Guttormsdóttir studied the visual elements and the figurative language of the landscape which surrounds us, each and every day and Kristín Bogadóttir her researched everyday aesthetics and values within the frameworks of EfS.

6.3.4 Participation and shared power

In the WIG and in the A+EfS I have created settings for the student teachers for meaningful participation. It has encouraged me to put myself in the shoes of the midwife discussed in chapter 1, where I create a nurturing environment for learning to take place. As discussed in chapter 4, I have focused on tacit knowledge and student teachers' artistic background. In order to make their experience meaningful, I have worked with reflections in actions where the students reflect on their own theories and actions in an attempt to make tacit understandings explicit for critical examination resulting in critical reflections.

Individual and community level orientation has been the focal point of the WIG from the beginning. In the project the student teachers and I have shown courage and the will to step outside of our teaching safety zone into new unexplored domains. I have always emphasised being honest, applying analytical formative assessment, providing encouragement to the student teachers so they felt supported during an unconventional learning format, thus encouraging them to develop self-efficacy (Bandura, 2000).

6.3.5 Critical reflection and socio-political goals

In the WIG the student teachers apply place based critical pedagogy as they present problems without obvious solutions so that a dialogue takes place. This approach challenges everyone who takes part with the complexity and plurality of real world problem-solving. The wicked problems (Rittel & Webber, 1973) of society often have more than one solution, and a solution in one place and time is not a solution in another. This approach encourages the student teachers to situate them in the pupils' own experiences, to change their present state of affairs, and to examine the selected problems together through artistic actions. This happens with the intention of developing collective community values and it was important to work from the perspective of providing learning experiences that embrace whole systems thinking (Capra, 1996; Clayton, Clayton, & Radcliffe, 1996; Sterling, 2008; Tilbury et al., 2005) and making thinking visible (Ritchhart, Church, & Morrison, 2011).

The partnerships in the WIG between the schools, the Botanical Garden, families, and the cultural board of Reykjavik were important for the community. The IAA was in the role of supplying an external cultural organization that introduced new values, guidance and showcases pupils' work, thus also convincing parents of the benefits of arts education. In presentations and written articles I also gave pedagogical support to teachers who wanted to learn from our experience. Many of the projects dealt with common values like respect, tolerance, freedom and equality. In the last two years of the WIG project we focused on evaluation meetings where the student teachers discussed with the pupils the processes they used, imparting knowledge about such common values. By determining both the

individual and the collective associations we were able to point at the social action and the forms of interventions they were able to exercise.

Shared power was sometimes difficult, because some people were more willing to take this kind of power than others. Some needed to be encouraged to take power while I needed to remind them to allow others to take responsibility. My artwork *Lesson from the Geese: Dreaming of collaborative protection of our waters* that was discussed in chapter 4 deals with this same concept.

In the A+EfS course and in the WIG project the student teachers in their professional approach embraced a truly collaborative culture and wanted to be open to their pupils, and contributed thoughts on creating settings for critical reflections, and inquiries. They also expressed a willingness and wonder in learning from the pupils and each other. That included the importance of acknowledging different qualities brought to partnerships by different partners.

In the WIG, the student teachers as a group always showed a capacity both to make purposive choices and to transform those choices into desired actions and outcomes. All the student teachers and all the students participating in the WIG brought in different sets of expertise and lived experiences. All the projects worked with common directions and shared interest, developing and discovering shared values. As discussed in article 7, all of the projects in the Botanical Garden took a team approach, creating awareness, identifying problems and some even offering solutions.

It was important for me to develop my competences in working collaboratively. We had to plan together, research, implement, evaluate and at the same time allow time for critical reflection. It is more time consuming than just to do it by yourself but it makes a better project (Student teachers, 2016).

This sense of mutual respect and shared commitment toward creating settings using natural elements in the WIG shaped the experience and hopefully took all the participants beyond their experience by working with metaphors, connecting to lived experience and values. Respect for diverse ideology and diverse projects allowed the student teachers to learn from each other and hopefully start a journey to lifelong learning. Through discussions they realised that all their projects included planning a learning process that was based on student interests and choice. They all faced the same challenge, to facilitate settings that included collaborating with the pupils as opposed to informing them.

My experience at the WIG and in the A+EfS course harmonises with the internal relationship between means and ends that Biesta (2010) focuses on. We need to think of the means we use in education, our teaching styles and the ways in which we try to promote certain ways of doing. We have to realize we can't be neutral with regard to the learning outcome of education for sustainability, but we have the potential to allow students to have more say in what concepts and which

methods they are used when creating learning settings for pupils.

These points show that values are not simply an element of educational practices, but that they are actually constitutive of such practices. We might even say that without normative orientations, without decisions about what is educationally desirable, without an articulation of the telos of educational practices, these practices simply do not exist—or at least they do not exist as educational practices. (Biesta, 2010, p. 501)

After collaborating officially with the local school and the WIG for five years, I realized the importance of allowing time for development because good, respectful partnerships are not developed instantly. To repeat two projects many years in a row allows the ideology to grow and sustains a long-term connection.

In many cases, the development of efficacy is only achievable through collaborative efforts. In social cognitive theory, the conception of human agency is extended to collective agency. Empowered student teachers with strong self-efficacy, willing to share beliefs in their collective power to produce desired results are a key ingredient of collective agency (Bandura, 1997).

The A+EfS and the project at the WIG has been a good way to create a setting for collective agency where a group of students get the task of achieving shared knowledge and skills based on both the participants' resources and the interactive, coordinative, and synergistic dynamics of their transactions. Perceived collective efficacy is therefore not the sum of the development of self-efficacy of individual members, but the developing group-level property.

Social cognitive theory extends the conception of human agency to collective agency. People's shared beliefs in their collective power to produce desired results are a key ingredient of collective agency. (Bandura, 2000, p. 76)

6.3.6 Academic and communicative actions

The UNESCO framework introduced in chapter 3 and 5 can be called socio-political change goals. These expectations of action or social change clearly demonstrate critical place-based pedagogy in action with a focus on creative critical thinking. As critical pedagogy is interested in collective action, so individual and social criticality are intimately linked (Burbules & Berk, 1999). I have experienced that a critical pedagogical approach has helped the student teachers to engage with activities, to free themselves from taking the stereotypical position of a teacher. In place-based art and EfS, teachers can see students as actors in building their own knowledge and understanding its value. As the challenges of sustainability are often contradictory and complex, it is important for students to discuss conflicts and complex realities (Breiting et al., 2005).

With my role as programme director I could influence the socio-political

change goals of IAA and how we approach the framework for 21st Century Learning discussed in chapter 5. Going through the six years of action research did not only influence my teaching role but also my role as a programme director. I gained an improved understanding of what goes on in higher education in general. This insight has also presented relevant knowledge (including tacit) by which I could better consider the context in which I was operating as a programme director. This knowledge has helped me to follow up on departmental policies on interdisciplinary collaboration resulting, for example in an international course on cultural sustainability and memory work discussed in article 2.

Through participating in diverse conferences and open houses I have taken part in promotional tasks of the study programme as well as public student events in collaboration with the project manager and dean of department. In that context, I have been able to highlight my interest in EfS.

Among my main tasks, along with teaching, is providing students with guidance, supervising their learning progress, and other issues connected to their studies. Many students have been influenced by their participation in the WIG and the A+EfS. It has been my challenge to encourage them to find their passion and develop their own artistic action that often leads to their action efficacy.

I have also supervised part-time teachers who come and teach short courses and I have supported them in their work. This has been very important for creating a network among the staff. To know them and their approaches personally has allowed me in my own praxis to help the student teachers to make connections between disciplines. Often those same part time teachers have become important collaborators in my own artistic actions conferences and research groups. Since my role has also been to be a member of the admissions committee, I have been able to take notes of the student teachers' interests from day one. This has often given me the chance to find opportunities for them in the first semester. In consultation with the dean of the department I am also responsible for finding supervisors for their final projects for which a good network is crucial. I have also been in the role of supervising final projects and final theses where I have followed the same principles of empowerment as discussed earlier.

In order to strengthen my role within academia I have collaborated with diverse external parties for example through my participation in the association of art educators and through the research group. I have built and maintained relationships with the professional milieu, including organising conferences, symposiums and exhibitions. I supervised and had the role of the editor of the visual art part of the national curriculum (2013) for compulsory schools. I have also organised a symposium as part of *Hugarflug*, inviting 16 different individuals who are all nationally recognised for their approach to sustainable development. I have participated in public discourse in the field of art education, both nationally and internationally. I have sat on different panels and other committees on behalf of the Academy and organised a public platform for dialogue within my professional field,

but also took the initiative in bridging between fields as I did in the Arctic Circle conference discussed in chapter 4. This initiative is in line with Ingold's ideology (2011):

[I am] concerned about the widening gap between the arts and the humanities on the one hand, and the natural sciences on the other, I was looking for a discipline that would somehow close the gap, or enable us to rise above it, while still remaining close to the realities of lived experience. ... These fractures ultimately seem to derive from a single, underlying fault upon which the entire edifice of Western thought and science has been built – namely that which separates the 'two worlds' of humanity and nature. For this is what has given us the overriding academic division of labour between the disciplines that deal, on the one hand, with the human mind and its manifold linguistic, social and cultural products, and on the other, with the structures and composition of the material world. (p. 1)

In collaboration with the dean of the art education department and other staff I served a key purpose in structuring the study programme and teaching. As a programme director, my official task was to act as a leading agent in strengthening the creative atmosphere of the teachers' study track along with my colleagues. Throughout the time of this research and my focus on sustainable approaches I have experienced changes in my focus as a programme director towards a more holistic approach and putting stronger emphasis on student driven initiatives where they get more responsibility. When going through the governmental department assessment we reshaped the policy of the department and developed the study track, including the development of the curriculum, writing course descriptions and the assessment criteria. Collectively we have also followed up on courses and course modules, including teaching plans and learning assessments, and developed them towards the Bologna framework for qualifications of the European higher education area.

6.4 The learning experience and knowledge characteristics from the exhibitions

The evidence from the ABR study shows some characteristics of the artworks exhibited and some concepts have emerged. They can be described in the following manner: Through this research I have developed critical self-understanding, learning through the participation of others with personal narratives. The narratives create new perspectives in understanding education for sustainability and interpersonal communication. Once I introduced the ABR into the research my own teaching practices became much more creative. I started to be influenced by methods of participatory artists where the lessons became more performative.

Through the AR and ABR processes I have involved processes where I have challenged both the politics of education and politics of art, which can be very exclusive and exclusionary. By perusing participation and inclusion throughout my process I have brought forth a space for participation and inclusion that has the potential to empower student teachers and myself which is very important in relation to sustainability.

Through my artistic action in connection with the exhibitions I identified valuable information about cultural phenomena and portrayed them as complex, relational, and in-flux. The writings of the explanatory texts in the catalogues in relation to the visuals required multiple perspectives that aimed to have effect on diverse viewers' spirits and emotions.

The exhibitions contained, contrived, formulated, and carried information and knowledge that greatly enriched my understanding of the meaning of sustainability, both in connection to learning about a place and self-knowledge. The format and ideology of each exhibition and art piece created in connection with this study reflected on my intentions and attempts to continuously question the methods used, epistemology, and discourse analysed in relationship to my personal identity and the concept of sustainability.

All the exhibitions, including both the art objects and the creative process embodied situated, tacit knowledge about sustainability. Knowledge was revealed and articulated by means of experimentation and interpretation resulting in the art works and exhibitions.

Through the artistic activities in the WIG and my activities in connection to the three exhibitions I have discovered the value and potential of art in education for sustainability. That includes the learning processes and their role in developing cognitive and social skills; promoting innovative thinking and creativity; and encouraging behaviours and values that underlie broadmindedness and respect for diversity.

Action research afforded a paradigm suitable for my concerns and research questions and offered an appropriate model that I could use for my investigation. The living educational theories developed by Whitehead (2008) opened my eyes to new perspectives on practice. Inspired by this insight, I could include not only my experiences, findings and analysis in my research account, but I was also able to describe my personal values and beliefs and create the research presentation.

The interviews made it possible to meet and interact with student teachers, mentors and teacher educators, 38 persons altogether. For me this was an immensely educative process, in which I discovered these interviewees' commitment to the teaching profession. They had a shared vision of promoting good practice and being able to influence the lives of the people they were working with. Most of the student teachers seemed to be guided by idealistic reasons for entering into this profession, and all found it important to foster their prior professions as artists. My research produced this discovery, which put a special demand on me to evaluate and

construct interactions with my students where these expectations could be met.

Through the process of my artistic actions I have enhanced the capacity to make purposeful choices and to transform those choices into desired actions and outcomes that have been beneficial to me and to others. This dissertation has not only empowered me, but allowed me to develop action efficacy. As I have matured, both as a curator and an artist, my understanding and involvement at a local level and later at an international level have deepened with my exhibitions being shown at the United Nations headquarters in New York, at the Arktikum in Finland, and in the Scandinavia House in New York. My artistic actions have served as a springboard for the study of regional, national and global issues. Throughout this process, I have learnt to understand how to live a more sustainable life by developing self-efficacy at home and in my professional life. I have managed to develop my action competence and self-efficacy into transformation resulting in action efficacy. My exhibitions and artworks bear witness to it.

6.5 Summary

When answering the research questions, I have explained my professional development and experiences that allowed me to reflect on my philosophy of practice through the lens of quality, considering the purposes, approaches, and effectiveness of EfS. It was important to do this in conversation with other arts educators at IAA because that helped us at the art education department to believe in the importance of developing a learning community among adults, encouraging teachers to stay in contact with each other and with broader conversations in the field.

As an educator and an artist aiming for sustainable awareness I have developed a heuristic device through overlapping lenses: learning, pedagogy, community dynamics, and environment. These lenses all focus on the same experience, but each one brings a different dimension into view. All the lenses include decision making in complex situations. The decisions include competence and building on judgement, insight, inspiration and the capacity for improvisation as I strive for good performance in teaching and as an artist where I also use my tacit knowledge. This connects to Dewey's (1997/ 1938) ideas of learning by doing. According to his theories meaning-making is a complex and dynamic process. Knowledge building is not a lineal process as it undergoes change; knowledge grows and develops rather than just accumulates. The hands-on approach learnt in the arts is not the only thing that benefits the student teachers but the process, from being motivated to practical applications and artistic actions, is a gain in itself.

At the IAA I have a role as a teacher educator, a researcher and programme director. In my developmental process, I have worked with my colleagues. With them I exercise my judgements and decisions taking collective responsibility. Being a professional requires that I continue to learn in all fields. This requires openness

to feedback and willing transparency. Through the action research I have learnt not to be afraid of mistakes, because I reflect on them and learn from them.

I conclude with offering a heuristic device that is a result of my EfS work and the process of studying it at IAA and through my artistic actions. My findings and my experiences may be useful to other art teacher educators and the field of EfS in general.

6.6 Heuristic device

As I leave this research study I would like to present a heuristic device which I have developed. The device could help others to reflect on their own situation (table 6.1). Merriam-Webster (1990) defined heuristic as a process that involves or serves as an aid to learning, discovery, or problem-solving by experimental and especially trial-and-error methods. That includes heuristic techniques and a heuristic assumption. It is also related to exploratory problem-solving techniques that utilize self-educating techniques to improve performance.

The heuristic device I have developed was guided by my work through the past six years, based on what has worked in my practice. It could help others to reflect on their own situation, to form their own goals when developing their theory of practice. Each and everyone can approach the device on their own terms and figure out where they are located within the device and plan their development from there.

The heuristic device (table 6.1) invites reflections on questions related to core issues, firstly related to values particularly issues of learning (what?) and pedagogy (how? and with whom?). Secondly reflections on culture, with emphasis on environment (where?) and community dynamics (why? and with whom?). These together and in collaboration make it possible to understand the whole and different parts (discussed and defined in the other chapters this review) of the developmental process. Together they make up the whole as well as the fundamental nature and powers which are presented on the bottom line and which characterize my EfS lessons.

6.7 Implications arising from the study

IAA, as all other schools, operates in a challenging environment that alters along with the community. It requires the academic staff to be creative leaders that take action and influence their field. In this research, I have identified how I have influenced the field of art education for sustainability through teacher education and artistic actions, including curatorial work and art creation. My responses to issues of sustainability have had implications for the field of art education and could influence trends and changes in the environment of EfS and art education. The outcome of this research indicates that there is a general need for wide-ranging research and focus on EfS in teacher education.

Since the beginning of the research the general knowledge of the student teachers on issues related to sustainability has grown and in recent years they are better able to

define and connect to the concept of EfS at the beginning of the study. Even though the awareness is stronger the importance of creating space for personal reflections and the development of action competence and efficacy is as strong as before.

The resulting heuristic device (table 6.1) provided understanding through implications of changes for different schools and the community. Using the heuristic device as indicators to follow learners, development and adaptability allowed flexibility in the approach to leading and managing changes within individual theories of praxis when developing a sense of education for sustainability. Some people might not need the heuristic device because they have already reached the second or third level, and others might be at the same stage as myself and the student teachers at the beginning of my research.

This study indicates that research in teacher education has the power to improve how future teachers develop their teaching, and that it can also act as an example of how a teacher educator can, through action research, explore professional standards, knowledge, practice, inquiry, and research (Darling-Hammond, 2010). Knowledge discovered through this research can then be added to the knowledge that drives the coursework. The societal changes we face are caused by human actions and their impact on the earth. Therefore, there is a real demand for a discussion forum on EfS.

My artistic actions supported and led to the heuristic device and which had implications for the authenticity of artistic actions for sustainability. The exhibitions had also portrayed artistic processes, showing artistic inquiries and reflections on habits. The third exhibition with its focus on participation in the learning experience of the exhibition, provided indicators for intentionality, flexibility, and transparency. Setting personal goals were important, both for the student teachers and for myself when making decisions that were being aimed at transformative learning in the community.

The whole research process has had great implications for my artistic practice as I discovered new ways to focus on thinking. I am in the habit now of describing and analysing how I do what I do regardless of what my initial aims were. From this, I have learnt that it matters to see both if and how my actions count when following up on my exhibitions to take them to new platforms.

In the three exhibitions, I have identified what the implications for environmental sustainability in the arts and culture might be, and reflected on the potential of art to understand sustainability. The learning implications in museum settings proves the museums' potential role in raising public awareness of sustainability. Museums like Arnes Art Museum that hired a curator to set up an exhibition based on sustainability are able to meet their responsibility to future generations' by organizing well managed activities that encourage the people in the community to think about issues related to sustainability. It will take some time to see the practical implications of this change, but it seems likely that the Arnes Art Museum will continue with this focus. Local ecological knowledge and educational practices, as part of developing values and meanings, have proved to raise sustainable awareness. The challenge is now to translate this into more practical projects like the WIG and the art exhibitions.

Table 6.1
Heuristic device for working with art based methods in addressing sustainability

Learning (what?) Pedagogy (how? and with whom?)	Environment (where?) Community dynamics (why? and with whom?)
STRENGTHEN and develop efficacy	
<p>Involve student teachers in actively investigating (both independently and in a group) the phenomena of sustainability, allowing different interpretations and results. Foster broad dispositions and skills, especially the capacity to think creatively and the capacity to make connections.</p>	<p>Creating settings for the student teachers to make sense of their findings of their relation to their lived experience and tacit knowledge. Create an empowering environment which is both safe and supportive but also challenging. Encourage students to take part in meaningful activities they can connect to their lived experience.</p>
USE action competence for transformation of knowledge	
<p>Combining expert knowledge in the arts and the newly found EfS skills based on theories and tacit knowledge, both the tacit artistic knowledge and the theories of art education. Making learning relevant and connected to prior knowledge when creating settings for students to develop their professional theory of practice. Addressing issues, artists, artworks, actions, events, problems, or topics significant in EfS and of interest to participants.</p>	<p>Providing ways of pursuing understanding of the world through diverse learning settings. The classroom vs. learning outside and learning in museums. Student teachers engage with community, civic, and social issues when working with values and virtues. Student teachers become individually and on a community level empowered through a different orientation. Student driven initiatives and unique approaches empower students to become responsible</p>
EXPERIENCE efficacy and action competence through critical place-based pedagogical approach	
<p>Introducing student teachers to relevant literature, media, exhibitions, and resources that expand their knowledge about art and EfS, and their ability to access further knowledge. Incorporating ongoing reflection on the process and outcomes of understanding sustainability through inquiry, experiments and art creation. Intentionality, flexibility, and transparency. Investigating theoretical and practical problems in teaching and learning and that help students develop as individuals. Allowing the student teachers to take the role of the teacher Critical place-based approach in practice.</p>	<p>Learners can choose where they like to learn and how they like to learn. Sharing findings out in the community. Discussing aesthetic awareness with student teachers. Modelling artistic processes, inquiry, and habits. Creating connections, respecting others and different viewpoints. Overall sense of sustainability, connecting to their own interest and lived experience. Sharing responsibility and becoming part of community with collective efficacy empowers</p>
PRODUCE artistic actions	
<p>Building on students' current understanding, ability, values, virtues, memories and attitudes and care for tacit knowledge. At the same time, be open for new approaches, and learn from others. Create comfortable settings that encourage students to practice self-expression and intrinsic motivation. Pedagogical approaches build on participation and mutual trust. To create settings for choice based learning empowers the educator as they discover the relationship between the person that empowers and the person that becomes empowered.</p>	<p>Artwork reflecting on student's senses of sustainability, including participatory elements. Appreciation of art and the role it plays in the world. Community based settings that foster collaboration and participation that leads to trust. Artistic activities empower both the creator and participants that can take part in settings where participants can make choices. Participation that welcomes experiments and mistakes</p>
MOVE towards transgressive learning	
<p>Encouraging and support teachers in efforts to collaborate and participate in different happenings. Project-Based Learning with participatory pedagogy nurturing supportive conditions that allows students to develop efficacy. Working with others with common motivation leads collective efficacy. The artistic actions are dynamic as people move and grow and are dependent on time. [Student] Teachers are able to work with others building collective efficacy.</p>	<p>Working with values can help us to define what is a good action and what is a bad action. Shared values and vision, participation in the learning experience. Research has shown that collective efficacy is not the sum of different levels of efficacy. If you want to get the best teaching out of a group of teachers they must trust each other. Motivation goes hand in hand with trust. Participation and organisation of artistic events that include others, leads empowerment when socio-political change goals come true.</p>
<p>Building on tacit knowledge - a frame of mind - solving problems - wicked problems Leading to the ultimate goal: Artistic action efficacy</p>	

6.8 Concluding thoughts

This research has been practical as it has offered me findings that had direct relevance when dealing with sustainability as I tried to find out the potential of art in EfS. Based on my findings I had a range of opportunities to make a difference.

This research revealed that in my practice at the IAA I have identified multiple ways to approach EfS in visual art. EfS can exist in or out of schools. I look forward to continue to use my heuristic devise with student teachers on different projects reflecting on transformations and how they have developed their professionalism within art education for sustainability. I will continue to write about this and follow up with my own development. When working on EfS with student teachers we want to look at it through the lenses of perception while EfS could also be integrated within other concepts or taught as a separate subjects; and there is no single recipe for achieving quality. The key is that the student teacher follows his/ her heart towards sustainability awareness. Through this research, I discovered some necessary components in EfS, such as strong knowledge based on lived experience, the importance of participation, and a focus on values related to sustainability.

When researching the artistic actions I have organised in relation to IAA and independently in art museums, this experience has taught me that everybody has wanted to say something about this topic and the emphases of their concerns are ever changing. Therefore, the continued need for researching EfS and how it continues to develop is crucial. This study proposes arts, rich education and EfS share collaborations that are valuable for further research. Extended research that explores the potential of art in EfS will support teachers to plan processes that educate students today for a better future for all.

I look forward to continuing to organize and curate exhibitions that will hopefully create bridges between different groups, and create a better understanding of sustainability and related issues through art.

I realise now that I should consider the extent to which education and sustainability are problematic in and of themselves. That gives me a great opportunity for further reflection.

7 References

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Art and place-based education for the understanding of sustainability.

Icelandic teachers face complex challenges with an increasing emphasis on sustainability being demanded by the curriculum. This new demand calls for more critical approaches as teachers meet diverse student needs. Place-based education can offer a way of responding to the challenges. Teachers need to construct learning experiences that equip students with knowledge, which enables them to develop values that lead to more sustainable lifestyles. This paper describes the nature and impact of different aspects of art in the context of place-based education. The purpose of this inquiry is to examine what artistic place-based education has to offer education for sustainability (ES). Ideas are discussed on how to create settings and design activities that give art students an incentive to achieve an understanding of sustainability. The terms quality of life and well-being are discussed in relation to the possibilities that art education provides for students to better understand their own space and place in time. Examples are taken from art in Iceland and elsewhere.

Keywords: art, pedagogy, place, space, time, place-based education, education for sustainability (ES)

Introduction

Learning for the future is important, but learning for the present and in the present and from the past is just as important. This is the complex task facing schools, teachers and learners: how can school experiences be developed in such a way that meaningful connections are made between place and time? One solution can be found in the arts. Understanding the arts is important for the mind and can have a profound impact on many people. People have different motivations to express themselves. For many, art is a language. Artists, no matter with what medium they work, create works that are in close connection with their social context and influenced by current events. That is why I argue that place-based art education could be so appropriate for increasing the understanding of sustainability.

The 2011 National Curriculum for pre-, primary, secondary and vocational schools in Iceland lays out six important issues, one of which is education for sustainability (EfS) and another is creative work.



Art education students at the teacher training department, Iceland Academy of the Arts. As an art educator I want my students to get excited by a subject and let them experience why it is worth knowing the subject that interests them, preferably with reflection on their own experience and their own environment.

Other issues are literacy, equity, democracy and human rights, and health and well-being. These concerns resonate with the substance of the five learning pillars promoted by UNESCO (2005) in its implementation of the Decade of Education for Sustainable Development (DESD). The pillars are:

- Learning to know; i.e. what do we know about sustainability? What established knowledge does the concept of sustainability challenge? What knowledge do we need to work with sustainability?
- Learning to do; i.e. learning to recognize oneself and one's skills in the context of a complex society, giving learners the opportunity to search for patterns, raise their own questions, and construct their own models.
- Learning to live together; i.e. learning the skills of shared responsibility and tolerance.
- Learning to be i.e. perceiving and understanding one's own actions and emotions.
- Learning to transform oneself and society; i.e. learning to apply systematic actions that affect the sustainability of the community.

The 2011 curriculum in Iceland promotes key competences including that students should be aware of the diversity of natural resources and be able to take a stand on their rational use knowing, understanding and respecting the environment and nature, understanding how the ecosystem puts limitations on man and understanding their own ecological footprints and how communities and grade (age 15) students should be able to critically assess the value of information on society, the environment and nature. Students should be active and contributing citizens and be able to take a critical attitude towards the environment, society, culture and economy and understand the shared responsibilities of the world the earth and its inhabitants (Ministry of Education, Science and Culture, 2011).

The key question for educators is: how can students utilise their own knowledge to make informed decisions about the future? This article

discusses how art teachers can meet these new demands in education through addressing "place". It deals with the importance of learners finding ways to connect to their own lives and their local environment through critical thinking about their real needs for a good and fulfilling life and well-being. Such connections lie at the core of place-based education. The aim of the article is to clarify the potential of artistic place-based education, with respect to education for sustainability.

Place-based education

The central point of place-based education is to become more conscious of places in education and to extend the notion of pedagogy and accountability to the concept of place. 'Place' has been defined and used in different ways by various people. Place has several meanings. Some think of it in geographic terms as location by putting down a coordinate on a map. Geographical place is a material environment. It can be as natural as unspoiled nature, but it can also include artefacts like buildings or structures. Others think of place in connection with feelings of the place itself, constituted within some social process as an artefact or permanence and therefore identify a place with a name. The uniqueness can be connected to feelings of the person, who feels a sense of belonging to a certain place (Cresswell, 2004; Tuan, 2004; Harvey 1996). Place is the result of processes and practices.

It is constructed by people doing things and in this sense is never finished, but constantly performed (Cresswell, 2004). The relationship between places and spaces is connected to one's connection and feeling where space defines landscape, but space combined with memory defines place. Therefore, the landscape is seen from outside, like a backdrop when place can be defined from inside (Lippard, 1997). Each country, city or neighbourhood can therefore be described as a series of places, each with their own unique histories and iconographies. A place is not just

a thing in the world, but a way of understanding the world. While we hold common sense ideas of what places are, these are often quite vague when subjected to critical reflection. Most often the designation of a place is given to something quite small in scale, but not too small. Neighbourhoods, villages, towns and cities are easily referred to as places and these are the kind of places that most often appear in writings on place (Cresswell, 2004).

It is important to focus place-based education on students' and teachers' experiences, so that the places have meanings to educators, students, and citizens in tangible ways. Place-based education, therefore, bridges the gap between scholarly discourses and practices and the living world. With place-based education teachers and students get a first hand experience of local life, which gives them the potential for understanding the political process taking place and hopefully to have some influence on it. We need to focus on the local and understand it if we want to transform it (Gruenewald, 2003).

Places can be fruitful learning sites for students. In order to learn to understand themselves and their environment students need to get a sense of their own place. Attachments to places vary from one person to another. One's identity changes over time, subject to both space and place and it is important to work with identity in a broad sense. One could start by looking at one's home as a house and, in the larger sense, a neighbourhood, hometown, country – and then ultimately, the earth. The identity expands and is enriched as the places in which we feel at home, if only temporarily, are multiplied (Tuan, 2004; Tuan, 1977). People have to learn to explore their close surroundings because places like home not only nurture children, but they are also highly educational. In one's home there is space and place that invites exploration.

A little trip to the attic or basement could be an adventure and that camping in the backyard had the same sort of thrill they now have camping in the wilds. (Tuan, 2004, p. 7)

One might worry that local could create tunnel

perspective but it does not have to mean isolated, self-indulgent or inbred. In order to understand the big picture you need to understand the small one (Lippard 1997), "The cleverer I am at miniaturizing the world, the better I possess it" (Bachelard, 1958, p.150).

People have to spend some time in a place to discover the fundamental element of it. When dwelling in a place, the spiritual and philosophical endeavour unites the natural and human worlds (Cresswell, 2004). As students mature, their understanding and involvement at the local level serves as a springboard for study of regional, national and global issues.

Today the curriculum of many countries expects schools to take notice of physical places outside the classroom. But still the local, human and natural communities are usually not core parts of the school curriculum (Gruenewald, 2003). It can be tempting, for teachers that are still expected to fulfil standardised outcomes, to avoid place-based education because of pressures on the outcome they are expected to promote in standardized tests. Place-based educators often question reforms based on standards and testing because of their tendency to cut off the process of teaching and learning from community life, where students and teachers are "learning all the time" (Holt, 1989; Gruenewald, 2003). Some even posit that pursuing locally focused pedagogies might boost achievement in relation to traditional standardised measures (Gibbs and Howley, 2001; Lieberman and Hoody, 1998; Theobald and Curtiss, 2000).

It has been pointed out that some scholars have criticised place-based education for neglecting the ways in which socio-cultural differences, inequality, and politics contribute to environmental degradation (Gruenewald, 2003). But by connecting it to EfS, this concern could be solved since a radical view of EfS involves taking into account society as a whole and understanding different disciplines that facilitate the adoption of a holistic approach to the issue being addressed (Huckle, 2006).

Education for sustainability (EfS)

A variety of people and organizations have shaped theories of sustainable development (SD) and EfS. Different worldviews influence how issues are formulated and what kinds of actions have been proposed. SD was originally conceived as the overlap of environmental, societal and economic issues, separate but connected entities. In later years some scholars argued that SD is much more complicated since one cannot look at those issues separately, they are all interconnected (Adams, 2006). Giddings, Hopwood, & O'Brien (2002) therefore proposed that the connection between human activity and wellbeing is linked to ecological issues and the environmental limits of the earth. Well-being itself takes several different forms, including well-being as a state of mind or as a state of the earth, capability for action or a basic needs approach (Dodds, 1997). Sustainability can be seen as the struggle for a balance between the good life and the integrity of nature, resulting in human actions often coming into conflict with the integrity of nature and crossing the earth's environmental limits as a result of over emphasis on the "good life" (Háskóli Íslands, 2012; Sampford, 2010; Hattingh, n.d.). Those worries are shared by other international scholars and the message enhanced by the use of satellite technology:

Increasingly, people believe that the integrity of the earth itself is under threat - a belief that is fueled by disturbing images and reports from outer space. (Tuan, 2004, p.15)

The Bonn declaration (2009) stated:

The challenges arise from values that have created unsustainable societies... We need a shared commitment to education that empowers people for change. Such education should be of a quality that provides the values, knowledge, skills and competencies for sustainable living and participation in society.

The core skills in EfS involve taking a holistic understanding of the current situation. That involves going beyond raising awareness to address the underlying issues causing the unsustainable practices in students' daily lives and to challenge the assumptions that underpin day-to-day practices. Education can help learners develop skills that influence change within their local society. In doing so the students themselves create a systemic view around which to organise new practices. EfS relies on the strengths of collaboration and cooperation (Brna, 1998) and transformed knowledge (Miller et al, 2010) that leads to action.

Art, place-based education and education for sustainability

In ES the aim is for the public to participate in a community that promotes good health and integrity and takes precautions. To value culture and the possibilities that arts and cultural providers offer can help us to understand the impact of human activity on the environment.

The arts have educational potential in promoting ethical values and should be used to promote responsible behaviour (Hicks and King, 2007). For example, by getting students involved in "real world" situations, and/or when confronting important social issues through artistic endeavours, many artists deal with values in their works. In art education students learn that works of art, artists and designers have a place in their communities and that specific works of art contain cultural narratives about their own and other cultures. Even though technical skills are important they should never preclude visual imagination.

Visual culture can be understood in relationship to the meaning and value of people's daily living habits. Visual arts have been used through the years as a reflection on people and our actions; when looking at certain art we can see a different perspective of the world. The visual message of art is for some more accessible and easier to

grasp than the message in a written text. Artists of all periods have dealt with ecological and social issues and have often contributed to changes in public conscience, values and attitude (Brenson, 2001).

Environment, racism, sexuality, fear of homosexuality, gender, homelessness and AIDS, are all issues that artists have used as creative inspiration (Desai, 2002). Artists began to rethink and recreate nature as early as 19th century. Before the nineteenth century, most art was neither fine nor popular, but connected to lived experiences (Krug, 2003). The early artworks taught the public to respect nature and understand the importance of it (Hicks, 1990). Artworks relevant to place-based ES are those that reflect the community, deal with political problems and point out the futility of violence and injustice of conflict. Works that deal with people's social status such as attitudes, values or gender identity also have potential for ES as well as works dealing with issues of the environment i.e. the impact humans have on it.

Some artists create works that are site specific. The artist Mark Dion is one of them. In most of his work he inserts himself into the social history of the place. He sees himself as a 'trouble-shooter' who looks at issues with a new pair of eyes and a new set of categories and shows an interest in social, political and natural ecologies (Art 21, 2001). His search for understanding of interrelatedness of things is in harmony with EfS. It is this kind of connection between things that is so important but often missed in cultures. Place-based art education, like ES, has the potential for life centred approaches that encourage inquiry as a means for critically investigating and understanding everyday issues within communities and nationally and globally.

Common issues in ES and place-based education

The two concepts, ES and place-based education, go well with each other. Both in ES and in place-based education it is important to look at the conclusions

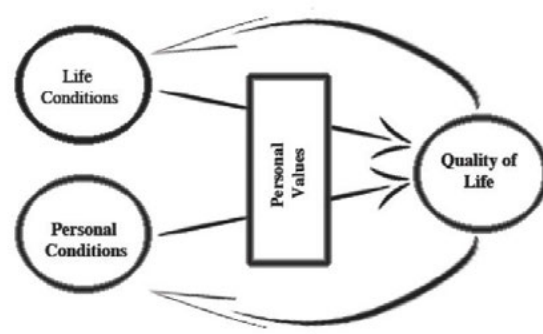


Figure 2. Adapted from Felce and Perry (1995, p. 55)

researchers have come to when looking at the quality of life, well-being and personal values. Sen (2005), Felce and Perry (1996), Schalock (1996), Day and Jankey (1996) and Keith (2004) have all emphasised the important part played by personal values when determining quality of life. Values are the desirable principles in someone's character. Morals work with the judgment of values as they emerge in actions. Schools should help students to revalue what well-being really is and create opportunities for them to rethink their values in life. A task for teachers is to take part in stimulating their students in developing their values so they are likely to live their lives within the limits of the earth's resources.

When education leads to action we can say that the process transforms students' and teachers' ideas and values. As we try to justify our beliefs we deal with our values and feelings and that depends on the context – biographical, historical and cultural – in which we are embedded. We make meaning with different dimensions of awareness and understanding. In the absence of fixed truths, and confronted with often rapid changes in circumstances, we cannot fully trust what we question, our own points of view, what we know or believe and these call for reevaluation (Mezirow, 2000). When educational settings make us question our own viewpoints, it provides us with a more dependable way to make our living meaningful. We can be looking and reflecting on alternate points of view and creating a new way of knowing that



Figure 3. Rúri, *Archive- Endangered water*, 2003

may be different from our old habits. This requires us to become tolerant towards others' points of view (Mezirow, 2000).

When one's life is rated as having quality, one will simultaneously have a sense of self-esteem and pride regarding his or her life. But these two are inextricably linked: a happy individual will live a fulfilling life and vice versa. And quality of life is often confused with material consumption. Happiness and well-being are linked to quality of life (Meeberg 1993).

In EfS it is important to keep in mind that what is considered to be well-being and/or the good life varies between individuals, and between different societies and cultures. Every school setting has to develop its own goals towards EfS because it would be misleading to take the concept of the good life developed in one cultural context and apply it to other cultures (Keith, 2004).

In EfS teachers might deal with topics such as human rights, poverty reduction, sustainable livelihoods, peace, environmental protection, democracy, health, biological and landscape diversity, climate change, gender equality, and protection of indigenous cultures. Place-based education could deal with all these issues where the local environment and community are the primary resources for learning. The students' own sense of place derives from background when it comes to dealing with environment, culture, economy, literature, history and art. This way students start to learn to understand their own culture, places and spaces before they move

on to broader global subjects. Place-based education is always related to real life (Gruenewald, 2003).

Place-based learning and ES aim for complementary competences and can be combined to accomplish critical school and community goals. By engaging the local community, a place-based project has the potential to promote civic knowledge, responsibility, and participation in individual and collective actions. To find a solution to issues of public concern, looking for community-based opportunities can result in student actions that have great impact. Educational experiences can be developed around personal and social knowledge across many different subject areas. It is for this reason that I advocate using an integrated curricular approach based on life-centred issues.

Examples of an artistic approach to place-based education

Artists have always been moved and inspired by the beauty and mysteries of nature. There is sincere commitment in artists' efforts to raise consciousness about the ecologically critical time our planet is going through. An artistic approach to place based education can be very rewarding, both for students and teachers. Many works of arts can be an inspirational start to a place-based education project.

A journey through life is composed of movement punctuated by pauses, which produce a place. Long pauses produce homes or home-like places. Our journey through time has a different character because there is no pause, not even in our sleep. It is a common experience that both space and time can seem discontinuous. We need stasis so we notice a change in ourselves, to recuperate, but also to take stock of what the world is like and who we are (Tuan 2004). Some artists frequently deal with the relationship between time and nature. Rúri, one of Iceland's most internationally known artists of today, is one of them. In her series of photographic and sound installations *Endangered Waters* (figure 3), she documents how the natural landscape is threatened with extinction

as a consequence of human intervention. She catalogues the qualities of individual waterfalls in Iceland, preserving their unique sounds and appearance, for a future in which they may have ceased to exist. Her work exposes the environmental

costs of Iceland's exploitation of hydroelectric power by highlighting the threat to the survival of Iceland's waterfalls posed by extensive dam building. Two-thirds of the energy produced is used by the multinational aluminium industry at below market rates. Her work has a strong spiritual dimension and a real political edge. For Rúri, art is philosophy; her works are concerned with the connections between man, the earth, and the universe. She looks at the relationship between the existence of mankind and the inestimable age of the universes: and considers human perceptions (Schoen, 2011). The work is an interactive installation that comprises 52 photographs of waterfalls which Rúri has taken of different waterfalls. The pictures are developed on transparent film, mounted between two sheets of glass and arranged in sliding slots installed inside a large steel frame structure. All the photographs are labeled and when a photograph is drawn out one can hear the sound of that specific waterfall.

The installation was the representation of Iceland at the 50. Biennale di Venezia – 2003. This work has great potential in place-based education. Everyone can connect directly to the work through interaction. The powerful sound effect produced by waterfalls in their natural environment has been silenced with dams and hydropower plantations. Teachers can ask students to think of places and spaces in their own surroundings that they would want to protect. When taking action through formal study students are more likely to become active citizens. Visual culture can be understood in relationship to the meaning and value

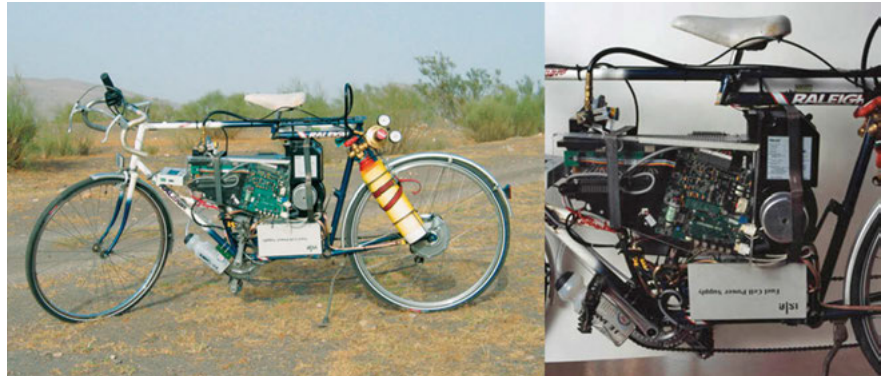


Figure 4.-5. Simon Starling, *Tabernas, Sesert Run*, 2015

of people's daily living habits.

The British artist Simon Starling creates works, in installations and performances, dealing with issues surrounding the growth of global capitalism and man's relationship with the natural world. Most of his works are site-specific projects where each work is deeply linked to the space or to the place from which it is conceived. Starling describes his artistic process as finding homes for projects:

I tend to carry around a bunch of half-baked ideas for things that for some reason or other suddenly find their place or are triggered by a particular set of circumstances. It's a question of joining the dots. I always approach sites with very particular baggage but I guess you develop a noise for the global in the local or something like that. (Bonaspetti, 2008, p. 9)

Starling got the Turner prize in 2005. It was his solo exhibition at the Modern Institute in Glasgow and at the Fundació Joan Miró in Barcelona that got him shortlisted for the prize.

Starling work *Tabernas Desert Run* (Figures 4-5) fits well within the discussion of place-based education. In this work he documents the artist's journey across southern Spain's Tabernas desert. He travelled on a self-made electric bicycle that produced water as a by-product. To document this artistic process he collected the wastewater from his

bicycle and used it to paint a simple watercolour of a cactus. The catalogue from the 2005 Turner prize says of this work

The contrast between the supremely efficient cactus and the contrived efforts of man is both comic and insightful, highlighting the commercial exploitation of natural resources in the region.

An ecological ethic where humans have to value life in relationship to nature has been a catalyst for some artists to create socially responsible artworks. Libia Castro and Ólafur Ólafsson, often described as “*citizens of the world*”, have worked together since 1997. They seek to find connections and utilise different media in order to raise questions addressing social issues and urban politics. The aim of their work is to portray a group of people living in a specific cultural, social and economic environment and mapping the spatial and architectural context where they live. With their “site-related practices,” they engage with the dynamics of locality, reactivating and revealing its current concerns. In Figure 6, the artists are portrayed wearing the Icelandic national women’s costume. They stand in front of the first Icelandic aluminium smelter. In this work they question the environmental costs of Iceland’s exploitation of hydroelectric power by highlighting the threat to the survival of Iceland’s traditions and cultures posed by an emphasis on heavy industry. Two-thirds of the energy produced in Iceland is used by the multinational aluminium industry at below market rates.

Even though a global perspective is important when designing action to improve sustainability, it is also good to start to act locally and think how one can change one’s own action towards a better design of our physical environment that can be constructed and/or managed to improve sustainability.

Teachers can help students to shadow artist methodology that was implemented in other settings. The most important step is personalisation - when students think of what an artwork means to



Figure 6. Libia Castro and Ólafur Ólafsson, Untitled, 2000

themselves and how it makes them feel and how they place value and importance and how they perceive the work. Critical discussion and explorations into what one really needs to live a good and fulfilling life can be a good starting point in art education. These explorations can use individual experience as a starting point for changing one’s daily habits, by starting locally, i.e. to help lower energy waste and respect the integrity of the earth.

October 22nd 2011, the first day of winter in Iceland: a new sculpture garden was opened in Reykjavík. For the occasion Halldór Ásgeirsson fused together 5 lava rocks in a hole (figures 7-8). The rocks came from volcanoes in France, Italy, Japan, China and Iceland; countries where he has worked on different lava-melting projects. Ásgeirsson melted down the lava using a blowtorch. All the lava on the earth is originally the one and the same object in the earth mantle. The performance in the sculpture garden reminds us that the earth is one closed system. The performance included participation of representatives from each country. They formed a circle around the hole, sending a message, a manifesto as to the brotherhood of mankind. Underlining the message Ásgeirsson wrote a poem on a wall and a concrete floor in the garden with the alphabets of the nations represented, informing us that the languages are essentially the same.



BRÆÐ(R)ALAG - FRATERNITÉ - FRATERNITÀ - 友愛 - 兄弟會

Figure 7-8. Halldór Ásgeirsson, *Brotherhood* (2011)

In the statement with the show he says:

Art is a common expression of mankind, albeit our different origins, colors, languages or nationalities. Culture originally comes from the conversation between man and nature; art is a natural part of this world, just as the people living in it...The mysterious letters written on the wall might be a message from earth, a type of encouragement for a conversation between different cultures, in the same way the lava rocks form a brotherhood in the park. (Ásgeirsson, 2011)

The work focuses on the impact every person has, both on the ecosystem and on a society's culture. The performance can be seen as a metaphor for the importance of human unity in modern existence.

In the same way one can look at and interpret the work of the Canadian photographer Edward Burtynsky. In his works he explores how nature is transformed through industry. In his photo series *Nickel Tailings* we see works that are aesthetically fascinating and at the same time a horror show.

Burtynsky uses his photographs to inform the public, corporations and governments about how people are drawn by a desire for a comfortable life and how the world is suffering for our fight to achieve this 'success' (*Nickel Tailings No. 34*, Sudbury, Ontario 1996). He says about his work: "I feel an urgency to

help make people aware that what we give to the future are the choices we make today" (Burtynsky, 2010). His ideas are in harmony with the ideas of ES discussed earlier. The core function of art is to give people a fresh understanding and awareness of our environment and how we interact with it. The arts have the potential to build a relationship with the physical world and global society through the senses, intellectually and emotionally.

This kind of approach works in place-based art education and in ES because it enables a conscious and holistic response to finding the delicate balance between the integrity of the earth's environment and human wellbeing.

Teaching critical thinking should be part of SE, which makes students more competent in identifying values and understanding the importance of taking action and being an active participant in the community (Breiting et al, 2005). Many art projects that engage with sustainability emphasise a combination of critical and creative thinking. Such projects are often focused on perceiving and exposing social and political contradictions, and thereby empowering viewers and participants to transform oppressive conditions. In many cases art creation will help students to place emphasis on issues that they feel are worth fighting for, and thus build a bridge between knowing and acting. One can talk about students achieving "action competence" when they

have developed the ability, motivation and desire to play an active role in finding solutions to problems and issues they feel are worth fighting for (Mogensen and Schnack, 2010). Using their acquired knowledge to change their environment, Jóhannesson (2008) points out that school projects that emphasise critical thinking and that involve action competence have not only a personal impact on the student when developing his creative and critical thinking, but the work can also have an impact on the community.

Critical thinking encourages an analysis of situations and arguments to identify faulty or unreliable assertions or meanings. This expectation of action or social change distinguishes critical pedagogy from critical thinking but still both invokes the term “critical” as a valued educational goal: urging teachers to help students become more skeptical toward commonly accepted truisms. Critical pedagogy is interested in collective action so individual and social criticalities are intimately linked (Burbules and Berk, 1999). Critical Pedagogy embraces a raising of the consciousness, a critique of society, as valuing students’ voices, as honouring students’ needs, values, and individuality. Critical pedagogy is a hopeful, active pedagogy enabling the students to become participatory members of a society. Peter McLaren explains that critical pedagogy is an approach adopted by progressive teachers attempting to eliminate inequalities on the basis of social class, and that it has also sparked a wide array of anti-sexist, anti-racist, and anti-homophobic classroom-based curricula and policy initiatives (McLaren, 2000).

This approach helps artists and art teachers to engage with activities to free themselves from taking the stereotypical position of a teacher. Through critical discussions students are encouraged to think about different ways of knowing and modes of working and questioning decisions, rather than merely receiving them. It is important that students learn by doing something or experiencing it, not just hearing about it. In place-based art education and EfS, teachers can see students as actors in building their own knowledge

and understanding its value. As the challenges of sustainability are often contradictory and complex, it is important for students to discuss conflicts and complex realities (Breiting, Mayer and Mogensen, 2005).

Place-based art EfS encourages a sustainable lifestyle and participation in a democratic society. Artists use their imaginations to reflect the world and reflect on it. The issues they focus on emerge through interesting metaphors, which do not have to be realistic because imagination and creativity are part of the real world. Artists sometimes work with issues that provide viewers with new perspectives, connected to their daily life, in order to interpret and connect with their own experiences and community structure.

Some works of art deal directly with the community. Ólöf Nordal was asked to create an altarpiece for a church in the town Ísafjörður,



Figure 9. Ólöf Nordal, *Birds of heaven* (2007)

which is located in the west fjords of Iceland. The work received the name *Birds of heaven* (Figure 9). She chose to build an altar table from a story in the bible where the bird golden plover is a metaphor for absolution of sins. When creating the work she had in mind that the work should have wide appeal with close connection to Icelandic cultural traditions. She also wanted to relate to the environment and personal relationships within the parish. She created the work



Figure 10 - 13. Volunteer participants working on *Birds of heaven*

with volunteers from the local community that formed the birds for the altarpiece. The work consists of 730 clay birds, formed by 730 individuals (Figures 10-13), and it can be said that it represents the diverse and multicultural group living in the same place (Morgunblaðið 2007).

Nordal bases her work on extensive and detailed research. Her work, in which she often uses diverse materials, tends to deal with social issues that are closely related to the values that form the basis of ES. Many of her works could be described as showing in a simple and clear way a complex issue in one piece.

Behind most artwork is conceptual development, often both through the medium and the idea. Much contemporary art work involves research, which may be a good model for students' research. When artists work with place-specific art their work reveals new depths of a place to engage the viewer or inhabitant, rather than abstracting that place into generalisations that apply just as well to any other place. Some artists can strengthen the bonds among art, audience and context. Their interest is in the narrative landscape, understanding place and history to include people (Lippard, 1997). Nordal and Dion use approaches that allow participants from the communities to become part of the social multicentre.

As discussed earlier it is important to keep in mind the influence of time when working with a place. The meaning of artworks can change over time and it can also be given different meaning depending on the society in which it is shown. Some artworks are meant to speak to global settings but others are designed to be more local. They can be beautiful or provocative. Many contemporary artists work with complex

contemporary issues and aim to use the works to make the audiences ask themselves tough questions, often dealing with matters mentioned earlier in this article in the context of sustainability. When working with the contemporary in the art room the teacher challenges students to look at their world in new ways.

When locating art education within a critical place-based pedagogy, standardised pedagogy is disturbed. When valuing the peculiarities of the local and when we take it for granted to question assumptions about progress and our relationship with nature, we encourage our students to think critically. In this way, teaching becomes responsive to ecology and local culture (Graham, 2007). Place provides nurture but it is also an important source of our identity - a key to who we are. The arts are, like nature, symbolic and revelatory. What you strongly like or dislike, says a lot about you (Tuan, 2004).

Conclusion

Visual arts are a vital part of cooperative and collaborative approaches in ES. Such education must be based on critical thinking and moral foundations, creating a general attitude that could lead to a brighter future for everyone. Place-based education offers a way to address important issues in education promoted in the 2011 national curriculum in Iceland. It does so by offering opportunities for integrating the arts within and across other subjects. To connect to one's own place, experience and values through critical reflection should be a natural part of all learning. The art discussed in this paper looks critically at ideas and

issues, making connections and crossing disciplinary boundaries, juxtaposing forms and ideas that bring the viewer to new insights and new knowledge about personal places.

Working with localised social actions, activating the inhabitants gives a potential for conservation with an ecological approach where human culture is nested in ecological systems (Gruenewald 2003). Smaller societies like Scotland and Iceland can develop local models of sustainability with place-based education as a central element.

Iceland has become rapidly urbanized and the connection between the new urban population and traditional rural society is a complicated one. It is entirely possible that such rapid social change can cause deep ruptures in the traditional fabric of society. Place based approaches to education for sustainability are bound to become increasingly important in this context. New emphasises in the national curriculum reflect these concerns.

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Making memories visible: A photographic exploration of cultural Sustainability

During the spring semester 2012 the University of Lapland in Rovaniemi and the Iceland Academy of the Arts in Reykjavík offered a Nordic and Baltic workshop called Cultural Sustainability and Photography Workshop. This article presents a description and analysis of the workshop that worked on clarifying the role memories and a place-based approach can play in education for sustainability (EFS). The purpose of the workshop was to develop participants' conceptions of cultural sustainability through working with memories, stories and photographs and to foster these and pass them on to others. Cultural sustainability means here cultural values, heritage, and memories that are important to the participants. The leaders of the workshop were a group of teachers, Ásthildur Jónsdóttir, Mari Mäkiranta and Outi Ylitapio-Mäntylä and students from the Nordic and Baltic countries. The project began with an application for funding to Cirrus, a Nordic exchange network. The participants came from Iceland, Sweden, Finland and Estonia including exchange students from Russia, Italy and China. The workshop started with a weeklong meeting in Iceland in March 2012. The Icelandic students hosted the

visiting participants. The same thing was done in Rovaniemi in May when the second work-period took place. This was to create a stronger bond between the participants.

For the first meeting of the group in Iceland, each participant and the teachers were asked to bring one photograph from their private collections with them. The participants were told that the photograph should be of a place that had special significance to them. Through sharing these memories and stories of places with each other, the teachers wanted the participants to reach back to the past, and through critical discussions they searched for connections to understand the present. The participants found similarities and differences in their cultures. The discussions created a platform to cultivate self-awareness, an understanding of self, and what elements in their cultures are important to sustain. The approach used in the workshop was 'photo-related memory work', in which photography is combined with notions of social action. The participants reflected on the process in which they identified, represented and enhanced their community and places through memories and photography. Products of the workshop were presented at the exhibition *Sincerely mine*, at the Rovaniemi Design Lounge, as part of WCD (World Design Capital) May - June 2012, Helsinki- Rovaniemi.

Teaching and learning strategies photo related memory work

In human societies, individuals and groups make and keep records that document their activities and function as evidence and memory. Recording memories can take many forms. The choice of what is recorded and kept relates to ideas and values at the time of their recording regardless of their usefulness and the continuing value to individuals, groups or the wider society (Stoler 2002). Later these records prompt memories, which have a history and are shaped by history. Individuals and groups belonging to the same culture may have developed ways to

remember their past. Old photographs remind us of our past and where we come from. Photographs hint at silent stories that are open to interpretation. In the methodology used in the workshop the participants reconsidered notions of perception of memory and identity as they related the photograph they brought to Iceland to their personal values, connection to place and the photography's presumed message. The idea of the photo-memory approach is to reveal personal experiences that build cultural understanding and values in everyday life. The workshop addressed beliefs and values the participants were able to understand and share collectively. Memories are greatly connected to one's understanding of a place. Collective memory is often made concrete through the production of particular places. The idea of collective memory represents a type of memory that is shared among members of a society and passed down between generations (Bullinger & Salvati 2011).

Place

Place and space both conjure up emotional connections. Space defines landscape, but space combined with memory defines place. Each country, city or neighbourhood can therefore be described as a series of places, each with their own unique histories and iconographies. As people deepen their understanding of places and memories that are important to them they can make informed decisions about the future. The relationship between places and spaces is connected to one's connection and feeling where space defines landscape, but space combined with memory defines place. Therefore, the landscape is seen from the outside, like a backdrop, whereas place can be defined from the inside (Lippard, 1997). Place has been defined and used in different ways by various people. Place has several meanings. Some think of it in geographic terms as location by putting down a coordinate on a map. Geographical place is a material environment. It can be as natural as unspoiled nature, but it can also include artefacts like buildings or structures. Others think of place

in connection with feelings about the place itself, constituted within some social process as an artefact or permanence and therefore identify a place with a name. The uniqueness can be connected to the emotions of a person who feels a sense of belonging to a certain place (Cresswell 2004; Harvey 1996; Tuan 2004). Place is the result of processes and practices. It is constructed by people doing things and in this sense is never finished, but constantly performed (Cresswell 2004).

There is a connection between place, memory and the identity of a particular group of people. Collective memory is often made concrete through the production of particular places, but production of memory in a place is no more than an element in the perpetuation of a particular social order that seeks to in-scribe some memories attached as if by nature (Cresswell 2004, 61). Memories are greatly connected to one's understanding of place. In Bachelard's (1958) research on how we might experience this world through our senses and the places we dwell in, he comes to the conclusion that we can isolate an intimate, concrete essence that would give a reason for the uncommon value of all our images of protected intimacy. His findings emphasize the importance of values in identifying one's place.

All values must remain vulnerable, and those that do not are dead. It is better to live in a state of impermanence than in one of finality (Bachelard 1958, p. 3).

A place is not just a thing in the world, but a way of understanding the world. While we hold common sense ideas of what places are, these are often quite vague when subjected to critical reflection. Most often the designation of a place is given to something quite small in scale, but not too small. Neighbourhoods, villages, towns and cities are easily referred to as places and these are the kind of places that most often appear in writings on place (Cresswell 2004).

Education for sustainability

In education for sustainability (Efs) it is important

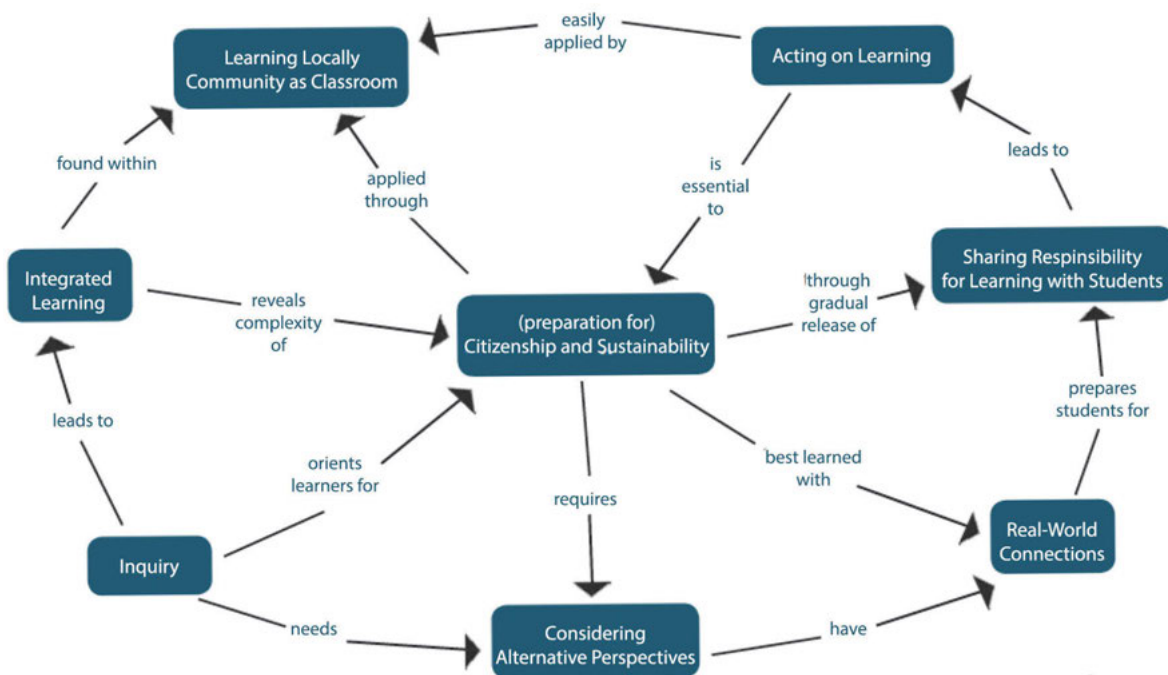
for teachers to integrate ideas from several disciplines to construct a framework around the challenges of sustainable development. These are challenges that should be examined and then translated into learning outcomes (Sibbel 2009). The Canadian scholars Stan Kozak and Susan Elliott (2011) have created a summary of learning strategies called Connecting the dots useful for organizing experiences in EFS. This framework is presented as a web, which is a good tool for artists and art teachers to use when evaluating whether they are dealing with key concepts on the journey towards a more sustainable future. In education for sustainability teachers link together environmental, economic and social issues and values within subjects and across disciplines. Some learning strategies are more useful than others for disciplinary work that is student-centred. Sustainability is an endless development towards better harmony between “wellbeing” and the integrity of the earth. Therefore it is dependent on the moment of time, on where and when sustainability develops. The time scale can differ

across and within systems including similar spaces and places. The same system can even have different components of sustainability that are best measured in different time frames (Bell & Morse 2008).

Globalization is a phenomenon that will continue to have great effects on people through the growing influence of new media. Events within one country or actions taken by that country influence or are influenced by those in other countries in ways that effect social and cultural change. In EFS educators need to create opportunities for students to become aware of this fact in order not to lose important cultural heritages that are inherited across generations. Linking students to each other, their home life, their schools, their environment and their community is a good way to strengthen cultural heritage and a sense of self.

An example of memory-based work

Patti Chen from China approached the subjects of sustainability and memory using traditional Chinese



Connecting the dots, Kozak and Elliot, 2011.



Patti Chen and her installation *Memory*

painting paper and ink in two different ways, both abstractly, in relating to her personal memory. Her approach has been objective, integrating geometrical forms and photography of air, water, sand, or earth, for instance. These approaches merge together naturally, offering visitors to go into the light and shadow of the installation and move around, stand, sit, interact, and let the stardust fall. She says about her work:

Memory is something we create in our mind, a mixture of truth and imagination. It is all about details of reminiscence and often there is absence of time. Fragments and pieces of the reality are the relics of personal history. Memory gives us identity and it is ever moving and changing. Hidden and beyond literal description, the feeling we have about everything around us are like blurred pictures, deformed and montaged in our own particular way. I am fascinated by the fact that through memory, we are building up our “reality” in a way only we can. I want to capture the subtle feeling of memory-how it is partly forgotten, partly enlarged, and montaged by ourselves spontaneously. I try to express it through my work and evoke emotional connections with the viewer. (Chen 2012.)

The workshop - structure and activities

In the cultural sustainability and photography

workshop we wanted participants to link memory-based methodology with an awareness and understanding of the importance of sustainability in relation to the participants’ native regions, using a place-based approach. The central point of place-based education is to become more conscious of places in education and to extend the notion of pedagogy and accountability to places.

Place-based education is focused on students’ and teachers’ experiences, so that the places may bring meanings in tangible ways. With a place-based approach participants can get a firsthand experience of local life, which gives them the potential for understanding the political process taking place and hopefully to have some influence on it. There is a need to focus on the local to understand it, if it is to be transformed (Gruenewald 2003).

We wanted to support the participants in developing selfawareness and self-efficacy, the capacity for effective advocacy through their art creation. The international and the interdisciplinary collaboration between art teachers, artists and designers helped raise awareness of social and moral responsibilities associated with professional practice. In the workshop the participants dealt with issues concerning one’s need to link knowledge, skills, and perspectives through memories, personal engagement and action.

In the workshop we focused on creating a relaxed atmosphere and time for sharing stories and life experiences. Participants were also able to comprehend the differences of worldviews and experiences that made them distinct from one another. Through photos and critical discussions they dealt both with cultural sustainability as the role of culture in sustainability and the sustainability of cultural practices.

When organizing the learning sequences for the workshop much value was placed on the process of transforming the participants’ knowledge and experience into ‘knowledge in action’ (Boyer 1990). Some research on students’ prior beliefs and

conceptions as they enter higher education suggests that life experiences play a powerful role in shaping the interpretation and application of each program through the influence of prior knowledge on the understanding and integration of program concepts (Bullough 1989; Zeichner & Gore 1990). The participants brought a great deal of knowledge with them when they entered the workshop. Once an artist enters the field of sustainability concerns they have to build a bridge between different communities of practice. It was the teachers' role to create educational settings that ensured that the participants could build this bridge in a community of practice.

Communities of practice are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly (Wenger et al. 2002).

This transformative ideology, where teaching should stimulate active not passive learning and encourage students to be critical, creative thinkers, with the capacity to go on learning, was followed in the workshop. It means not only transmitting knowledge, but also transforming and extending it as well (Boyer 1990). The challenging task was to create educational settings that gave space for developing knowledge, skill, mind, character or ability. At the same time each participant was tasked to look at their own findings in relation to those of the other participants. Through common experiences and through exploring the rhythms of their daily lives bonds were formed between the participants. Through that awareness they created different kinds of relationships to the past, which acquires a kind of autonomy in relation to the present.

To learn about cultural sustainability through photos and memories in relation to a place through image-based methodology is valuable in order to enhance the status and acceptability of image-based inquiry. But the images also provided a critical platform from which to examine and refine visual methods.

The workshop began with an informal gathering

where everybody introduced themselves and their ideas about the workshop. The group then went on a tour around Reykjavik where each of the seven participants from Iceland brought the group to a place that had a special meaning to them. Before coming to Iceland the participants had read a few articles related to memory work and sustainability and they were also asked to bring a photo of a place that had a significant meaning to them, i.e. be related to their identity or perceived memories. After getting to know each other the participants explored the photos they had brought with them.

To promote critical dialogue and knowledge about personal and community issues related to sustainability the participants also worked in small groups, discussing their photographs, finding ways to represent them together. Once in Iceland the participants created another photograph that was supposed to reflect on the original one and the discussions about sustainability, culture and memories. The participants discussed their findings and developed narratives to go with their photos. Through critique and interpretation the participants found shared meaning behind a series of photographs. The process was designed in order for them to be able to understand the beliefs and values they shared collectively. They were also able to comprehend the differences in worldview and experience that made them distinct from one another.

The webpage created a necessary connection between the meetings in March and May providing support and a venue for trans-community interactions. In an interview some of the participants addressed the issue that the coordinators could have used it even more effectively by demanding participation in more dialogues or by using Facebook, a medium people visit frequently. In a future project it could be useful to encourage online discussions to preserve the heterogeneity and relevance of local knowledge as well as forms of remembering within the different communities.

On arrival to Rovaniemi in May the students

were supposed to have their artworks on cultural sustainability, memories and values with them. The participants addressed some understanding of cultural sustainability by cultivating a greater awareness of self. They defined their own values, heritage, and memories that they wanted to foster and pass on to others.

In Rovaniemi participants were to share their findings and create an exhibition. The workshop's primary focus was related to photography but many participants used it as a springboard for creating work in other media such as performance, collages, stop motion animations, videos and installations, or sound installations.

Learning strategies for EfS and a visual focus

Using the Connecting the Dots framework (figure 1) the article will now address how the participants linked knowledge, skills, and perspectives through their engagement and actions. One could find other relationships existing between these strategies. The strategies identified here interact to support transformative learning. When explaining the web of activities I quote the participants to explain how they experienced each thread.

Learning locally - community as classroom

The participants used local issues and found opportunities to investigate issues related to their memories, culture and sustainability, right outside their own doors. When relating their memories to cultural and sustainability values in their art creation they acknowledged the value of their own places and related their findings to their daily lives. The place-based approach created a meaningful context for the participants, as one expressed in an interview:

For me the memory work is really interesting because it allows you to be personal and in this it's where you find interesting parts anyway. And so many times I think you often zoom out from the general level.

Another stated:

I think this experience taught me that maybe working with your hands and thinking along the process is a better way than you sit there and plan for the details. (from group interview)

Integrated learning

In the workshop the participants integrated skills and knowledge from everything they had learned in the past. This bridged the gap between scholarly discourses and practices and the living world. The participants got first-hand experience of local life, which gave them the potential for understanding it from many different perspectives and hopefully to have some influence on it. Gruenewald (2003) suggests that there is a need to focus on the local and understand it, in order for it to be transformed. The learning sequences gave the potential for personal inquiry crossing social, economic and ecological dimensions. Interviews with the participants indicated that future projects should give critical discussion more time. This would deepen the learning process and allow the participants time to practice skills, especially critical sustainable literacy. Still this project can be considered a good starting point for the participants on their journey towards more sustainable lifestyle.

I found it very exciting and inspiring to take part in this workshop. Memory sharing was good and it was a great feeling to meet people with similar interest. I am more passionate after the workshop. (written feedback.)

Acting on learning

Before defining which learning strategies work best for students to become engaged and active citizens it is important to identify the ideological framework for knowledge and connect it to learning.

For me it is important to create works that involve the exhibition visitors. I'm happy if my work makes people look at the world

with acritical eye (from group interview).

The framework used in the workshop can be called a critical place-based education. Pablo Freire and other followers of critical pedagogy are characterised by democracy (Giroux 1983; McLaren 1995; Shor 1980). Through dialogic education this pedagogy is trans-formative. Critical pedagogy is not limited to a classroom, but through transformation it seeks to contextualise the issues in the surrounding areas and peoples as part of the learning environment.

Through the exhibition, discussed below, the group applied what they had learned for the benefit of others giving the potential to engage all kinds of people. According to interviews the participants believed they had developed self-efficacy by becoming more active citizens. Doing generates hope.

Group sessions were really helpful to broaden my vision of photography, details, feelings and emotions that we share when looking at the pictures (student).

Real-world connections

The workshop connected learning about what is important to the participants and the broader community through the exhibition. The process made learning relevant to the participants:

I have been working with memories but I haven't been recognizing it. What stands out is that I didn't recognize the small things in my life that I'm passing to the next generation, they are so important or can be so important... I realize my values can have more or a deeper meaning because I'm passing on something to the next generation. (from group interview.)

Knowing is a social process, whose individual dimension, however, cannot be forgotten or even devalued. The process of knowing, which involves the whole conscious self, feelings, emotions, memory, affects, an epistemologically curious mind,

focused on the object, equally involves other thinking subjects, that is, others also capable of knowing and curious. (Freire 1998, p. 92.)

By learning about sustainability related issues the participants linked learning to life, applying sustainability literacy to their worldview.

Considering alternative perspectives

The critical discussions and presentations brought different points of view to the participants' learning experiences. The dialogues inspired critical thinking and examination of one's own values. Since the participants came from different cultures it was crucial to value different points of view and embrace diversity of thought and experiences:

To see how others are approaching sustainability - it is very nice, because we are all very different and come from different customs. I think about it like this, it's important to me how culture is, how we keep culture and preserve it (group interview).

According to Eisner (1995) the primary aim of research is to advance understanding. Artistic representations have the capacity to contribute to new knowledge by putting the familiar in new perspective and stimulating viewers through new ways of seeing, thinking and knowing. With a visual approach the participants connect their visual knowledge to their visual culture by exhibiting and sharing their findings. This is educational for both the participants in the workshop and the exhibition visitors.

Inquiry

The learning sequences in the workshop were created in terms of questions that require critical thinking. They encouraged the participants to find information instead of being provided with it. The photographic work brought together scholarly inquiry and creative processes as inquiry. One of the participants said

about the work:

We really started from those old photographs and the memories in them and they were so personal, I really go to the personal aspect as well. And that was something so genuine and so sharing that happened. That started from day one really like straight into it. And I've been thinking about its general energy building from that forward. Even that in a small scale shows so much about sustainability. (from group interview.)

The art creation allowed the participants to explore questions and express understanding through artistic means. Visual research allows for personal, emotional, experiential and embodied expressions of knowledge. Visual research values the participatory creation of knowledge.

Visual images are particularly appropriate to drawing in the participants themselves as central to the interpretive process (Mitchell 2008, p. 374).

Sharing responsibility for learning with students

The teachers participated in all the assignments, creating art works and statements on a peer level at the same time as they provided personal feedback. The workshop included peer learning as one of the students offered lessons in Photoshop. Peer learning also existed on an informal level in terms of reflections and critiques encouraging the participants to take initiatives. Curating the exhibition together fostered cooperative skills. The aim was to support independent thinkers, valuing their different learning styles and learning skills.

The workshop was assessed in two group meetings focused on self and group reflection, as well as through a written evaluation and the exhibition. To illustrate the issues listed above a few of the artworks created will be discussed in relation with the main

themes drawn from the exhibition.

The themes in the artworks

A place-based approach turned out to be fruitful for students. In order to learn to understand themselves and their environment students developed a sense of their own place. Attachment to place varies from one person to another. As one's identity changes over time, subject to both space and place, it was important to work with identity in a broader sense, maybe by looking at one's home as a house and, in the larger sense, the neighbourhood, hometown, country – and then ultimately, the earth. The identity expands and is enriched as the places in which we feel at home, even if only temporarily, are multiplied (Tuan 1977; 2004).

The participants engaged with the community at different levels. Some went back to their childhood like Ásta Þórisdóttir from Iceland who created the *Bootsreboot*.



Ásta Þórisdóttir, *Bootsreboot*

The beach where I played as a child had potential for adventures, experiments and the gathering of knowledge, a dialogue between man and nature. Above all else this beach is what has shaped me. (Sincerely mine 2012.)

The sustainability emphasis encouraged reflection on consumption and waste management. It also created an awareness of the importance of sustainability and encouraged the participants to take action. Some of the works pointed out the importance of managing re-sources and educating people on the importance of making informed decisions when designing options from which consumers make choices. In the work *In all lies beauty* Theresa Harmanen from Sweden created a series of photographs in collaboration with her sister Veronica Harmanen who illustrated the photos with poems. In her work she asks: How do we decide what is valuable? When do we decide to throw something away? What happens when we stop and look at a piece of trash again?

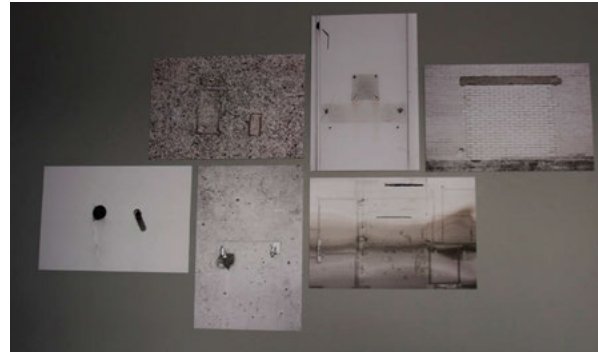


Theresa Harmanen, *In all lies beauty*

Juhani Näränen from Finland created the series of photographs titled: *This used to be in use*. In his work he looks at the town of Rovaniemi with a critical eye and asks if we as consumer could extend the lifetime of the man-made things around us.

I see man-made things that are around us. Every built wall and street is artificial. When I see a change in the scene of the street, the whole view can be seen differently...[Traces] preserve the history

of the location that used to be there. My work consists of detailed scenes found in Rovaniemi. These scenes contain something that was in use, but is not anymore.” (Sincerely mine 2012.)



Juhani Näränen, *This used to be in use*.

Through participation with people closely related to them they created settings for inquiring what effect we have on one another and how we learn from each other.

Pórunn Björnsdóttir from Iceland created an installation called *Please feel at home*. Her work invited the exhibition visitors to sit down, have a cup of coffee and listen to stories that are passed on between generations, stories that reflect on everyday life and connect the viewer to all the stories he or she has shared with others. Stories can help us stop and think about what is important in our culture and lifestyle. She states:

The kitchen is a place to tell stories, secrets and dreams to each other. It is a place where private and public matters are discussed, where our soul and body get nourishment, where we get space for evaluating, pausing the moment, confirm and dissolve...In that way we get a share from the past with a respect for the togetherness, empathy and feeling from a moment in their life. (Sincerely mine 2012).



Þórunn Björnsdóttir, *Please feel at home*

One of the performances included people from Rovaniemi. The performance *Mother Nature* by Þórunn Björnsdóttir invited a group of children in a kindergarten to participate. In front of the kindergarten she dug up a flowerbed shaped like an ear. The children planted a violet and whispered a wish to “mother earth” for good health and welfare. In order to keep their wish alive they had to water the plants during the following summer. Each time the parents picked up their children and saw the ear they were reminded of the unity which making the ear entailed. Working together creates a stronger team spirit and a more positive society (Jónsdóttir, 2011.)

Discussion and conclusion

The conclusions are drawn from my notes taken during the process and the transcripts of the group interviews. The participants appreciated the learning sequences developed through making, looking at, reflecting on, and developing ideas. The visual creation provided pleasure and enjoyment, and also enabled the participants to gain deeper insight and awareness.

I found out stuff that I didn't know before so it was really nice to connect to and try to look at it from different view points. And I found out that my bounds

to my background are really strong.

Visual literacy was cultural and place-specific although the artworks are universal symbols or visual images that can be globally understood. As one of the participant said:

It was very interesting looking at each others art projects and I like that our language is international” (from group interview).

Each location's different visual elements affect the public that lives there; therefore, a place-based approach is useful when learning about visual knowledge.

In visual culture one can find issues concerning political, social and natural ecology. Interpreting images gives the potential for interrelated understanding. Through critical discussion and creation the participants were able to see the connections between things. Understanding visual culture can help in connecting one's actions and personal behaviour. As one of the participants said:

This workshop helped me to think not only about the nature but how to think of us as part of the nature. We also need to work with our identity and I understand more about this topic through the art project. Such self-understanding has the potential to empower students.



Þórunn Björnsdóttir, *Mother Nature*

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Human nature and Participatory Virtues in Art Education for Sustainability

Allyson Macdonald & Ásthildur Jónsdóttir

Sustainability is a complex concept and as a phenomenon is studied by a wide range of scholars. Some have spoken of the wicked nature of sustainability problems. The notion of participatory virtues has been found useful in understanding sustainability and its wickedness and those aspects of human values which complicate and sometimes confound the process of implementing sustainable values. The aim of this paper is thus two-fold: first, to present a short overview of wicked problems and participatory virtues and second, to investigate through a small set of interviews ways in which art educators work with students in understanding sustainability. We consider how art projects and artworks can be used to promote awareness of vices and virtues to open up ethical questions and criteria for practice concerning issues of sustainability. The value of the study lies in how the cases represent ways in which participatory virtues can be used in art education to further the understanding and practice of sustainability.

Sustainability is an evolving concept but in its most common fundamental form it links development to both environmental and socio-economic issues. Hediger (2004) argues that it

involves “concerns for environmental preservation and economic development, and correspondingly calls for an integrated approach of evaluating trade-offs between conservation and change.” This statement however avoids the value-judgements inherent in the ‘good life’ approach to sustainability often favoured in the Nordic countries (Brülde, 2007). Dodds (1997), for example, has identified four definitions of well-being used in research on environmental economics: well-being of the individual, well-being of the state, meeting basic needs (cf. Maslow, 1970) and capabilities (Sen, 1985). The choice of definition will reveal dramatically different interpretations of well-being and what counts for the good life but which are very much affected by culture, nationality, gender, age, disposition and social class.

Traditionally the components of sustainability reflect three sectors or pillars – environmental, social and economic. Increasingly, for example in the work on resilience of systems (Sommerkorn et al., 2013), the social and environmental are being linked in socio-ecological approaches which work to counteract economic development. In this article, we however choose a different approach, that put forward by Giddings, Hopwood and O’Brien (2002) who have proposed that we could approach sustainability by combining the social and economic pillars into one of human activity and well-being as a single sector,



Figure 1. Model of Sustainability (Giddings, Hopwood & O’Brien, 2002)

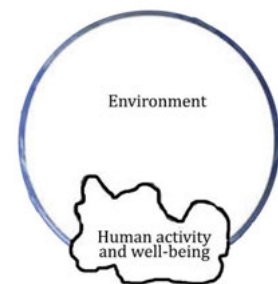


Figure 2. Adapted model of sustainability (University of Iceland, 2012)

perhaps ‘the good life’, which must function within the limits of nature, the environment (figure 1).

Some scholars at the University of Iceland have developed this even further when working on university policy. The comfortable coexistence of human activity and well-being with the environment (figure 1) could be seen as unrealistic. Sustainability is interpreted as the struggle for balance between a good life and the integrity of nature, and already human actions have had such an impact that ‘the good life’ goes beyond the earth’s environmental limits and have upset the integrity of nature (figure 2) (University of Iceland, 2012).

Working with Sustainability

Wickedness

Some help in understanding sustainability and the balance between human activity and well-being is to be found by identifying sustainability’s ‘wicked problems’ which are problems that have a range of characteristics and were first introduced in the research literature in the 1970s (Rittel & Webber, 1973). In wicked problems it is hard to define the actual nature of the problem; there is no one solution; each problem is unique; the solution is neither right nor wrong; and sometimes the problem itself does not appear until the solution is found (Thompson & Whyte, 2011, Ferkany & Whyte, 2011). What is important is to acknowledge the strong and reciprocal relationship between nature and society, that it is a complex not a linear relationship and that it relies on self-organisation and strong interaction.

The ‘wicked’ nature of sustainability extends into policy and decision-making, but could just as well extend into education (Murgatroyd, 2010). Development that acknowledges this ‘wickedness’ recognizes that knowledge from different directions matters, that all participants should recognise the value of different types of knowledge, and that participants should enter a process expecting to learn something. The value of the education will lie not just

in the outcome, but also in the process and the ways in which participation is encouraged and developed. Since no solution is apparent ahead of time, a democratic and deliberative process is necessary. Increasingly this might be accomplished through a transdisciplinary approach.

Children learn in the arts that problems can have more than one solution and that questions can have more than one answer (Eisner, 2002). When considering how to solve the wickedness problem of EFS it is important to keep in mind that complex forms of problem solving purposes are seldom fixed, but change with circumstance and opportunity.

Transdisciplinarity

To put the arts into this complex picture it is important to stress that a transdisciplinary approach is connected to artistic process in education. Assessing art involves more than a judgment of artwork after learning has taken place. In art education students have a responsibility for monitoring their own learning as they create, express themselves, and respond to artworks, both their own art works and those of others. In the artistic process, it is important that the teachers not only enable students to develop their crafts and understand the art world, they also need to help them see patterns, learn from their mistakes, and envision new solutions (NaeA, n.d.).

One of the roles of art educators is to facilitate and design lessons so that making art involves creative ways of working on problems and in engaging with people. Students are required to take on different artistic roles, including inspiring empathy and critical thinking, as well as providing a platform for pupils to experiment with risk and innovation (Wilson, 2011). Risk taking is also important in EFS since it requires courage to try out new approaches. Students need to be supported by their teacher in developing the courage to try out and experiment with materials, forms and concepts. When identifying, researching and studying a series of problems the artistic process has the

potential to focus, analyse and select materials. The Icelandic national art curricula for both compulsory and upper secondary schools emphasizes the personal, social, and cultural contexts of learning, and the power that creating has within these contexts (Ministry of Education, Science and Culture, 2011/2013).

Sustainability is one of six fundamental pillars of education that must be woven in to the work of the school in Iceland: “The fundamental pillars also refer to a vision of the future, ability and will to influence and be active in maintaining society, change it and develop it.” (Ministry of Education, Science and Culture, 2011/2013, p. 14). The other pillars are literacy, health and welfare, democracy and human rights, equality and creativity. The new curriculum further states: “Subjects are an important part of school activities but not objectives as such. It is not the role of schools to teach subjects, but to educate pupils and encourage their overall development” (p. 49). Integrated or interdisciplinary approaches have considerable value for both art and EFS.

Participatory Virtues

In EFS we need to foster self-awareness among students, providing them with empathy for their environment and all the challenges it faces. In order to build a fair, sustainable and peaceful global society, people need to understand and accept their responsibility to one another and to future generations. In education we can work with values, virtues and ethical principles that are needed for the transition to sustainable ways of living (UNESCO, 2011).

The notion of ‘participatory virtues’ discussed in the context of environmental issues offers some criteria that could be useful to education. Three virtues are identified: inclusiveness, engagement and epistemic productivity (Thompson & Whyte, 2011):

Inclusiveness refers not only to representation but acknowledgement of the value of wide

representation and acceptance of different forms of knowledge.

Engagement requires active commitment to the task and its purpose.

Epistemic productivity refers not to the knowledge itself but the ability of the group and the viability of the process in actually producing knowledge and calls for participants to be sincere, pay attention, be reasonable, show humility and empathy and to be charitable.

It is in the nature of arts to celebrate multiple perspectives (Eisner, 2002). When developing the willingness to be inclusive the arts are a good tool because in them there are many ways to see and interpret the world.

When going through the artistic process children learn to be engaged in complex forms of problem solving that change with circumstance and opportunity (Eisner, 2002, pp70-92). Epistemic productivity can be related to an artistic learning process in which students are expected to develop the ability and willingness to surrender to the unanticipated possibilities of the work as it unfolds. By doing experiments with material, forms and concepts new knowledge is produced. Arts student have the potential to change what might be an everyday perspective or way of seeing, into an unfamiliar one bringing out new understandings of what we might take for granted (Wilson, 2011).

Virtues and Vices

Elsewhere (Macdonald, 2012) has introduced three pairs of virtues and vices for engaging students in a critical analysis of their views and those of others. The vice/virtue pairs focus on rights, resources and responsibility, all key aspects of analysing sustainability in a situation.

- The first pair, greed/charity, refers to the extent

to which one's actions are governed by greed, not necessarily in the physical sense but in the moral sense: What gives someone the right to do something or own something or exploit someone else?

- The second pair, sloth/diligence, is concerned with the use made of resources, both in a physical or a moral sense. Too many resources are wasted because someone, an individual, a group or an organisation, cannot be bothered to pay attention to the details of a situation or are not diligent in caring for others and for nature and the environment.
- The third pair, pride/humility, is concerned with the arrogance that comes with false pride, that follows greed and sloth, when someone is somehow more important than someone else and does not take responsibility for their actions.

These three vice/virtue pairs lie at the heart of sustainability issues, in which man and nature must be sustained. The battle is between greed and charity, between sloth and diligence and between pride and humility. If education can work with these issues of rights, resources and responsibility, much will be achieved. When educators are able to inspire participatory virtues students become empowered to tackle these issues. It can be fruitful for empowerment of this kind to use an artistic approach to throw new light on the classical concepts referred to above. Contemporary art often offers fresh insights on ethical issues.

Teachers need thus to create an educational setting that makes students question their own viewpoints, in order to discover more dependable ways to make their lives meaningful. Students should be looking at, and reflecting on, alternate points of view and creating a new way of knowing that may be different from their old habits (Mezirow, 2000).

Art and Art Education for Sustainability

The Bonn declaration (2009) states:

The challenges arise from values that have created unsustainable societies... We need a shared commitment to education that empowers people for change. Such education should be of a quality that provides the values, knowledge, skills and competencies for sustainable living and participation in society.

Art education has the potential to play an important role in an integrated approach to global issues concerning sustainability. An artistic approach can create a platform for students to reflect on their daily activities in profound and critical ways. It can help them focus on taking personal responsibility and on internal changes that become a starting point for change in their external environment. To create the foundations for the good life one needs to foster many different qualities as well as understand how they interact with one another (Jónsdóttir, 2011).

When we think of our values, we think of what is important to us in our lives, such as security, independence, wisdom, success, kindness and pleasure. A particular value may be very important to one person, but unimportant to another (Swartz, 2007). One way of understanding the meaning and value of people's daily living habits is through visual culture. Visual arts have been used through the years as a reflection of people and their actions; looking at art can reveal a different perspective on the world. For some people, the visual message of art is more accessible and easier to grasp than a message in a written text. Artists of all periods have dealt with ecological and social issues and have often contributed to changes in public conscience, values and attitudes (Brenson, 2001). Contemporary artwork has the potential to raise questions that get viewers to rethink their attitudes and behaviour, which, in turn, can lead to action.

Using an arts-based approach gives students an opportunity for broadening their conception of the ways in which we acquire knowledge. "Art is an approach to research

that exploits the capacities of expressive form to capture qualities of life that impact what we know and how we live (Barone & Eisner, 2012, p. 5).

The arts integrate knowing, doing and making (Irwin & de Cosson, 2004).

In the following case studies we investigate whether art can engage students in new ways of looking at their daily habits through facilitating thinking, reaction, discussion, debate and deliberation with connection to their local environment. How can artistic projects help students to create a more responsible society and see how actions by some affect others? How can the arts help students to develop their confidence in imagining new and concrete methods to address problems and to take joint decisions? How can the arts be used to reach students by presenting the problems of sustainability on a human level, to encourage empathy regarding its dangers, losses and conflicts? Could a focus on intangible virtues and vices be a fruitful way to engage students in a critical analysis of their views and those of others?

We use the following criteria for practice drawn from the notion of participatory virtues in analysing the case studies:

of knowledge and representations of knowledge.

- Are participants engaged? How is commitment ensured?
- Will knowledge be produced? How? How will we know?

Methods

In this chapter we use a case study research design in which four educators are interviewed in order to find out the extent to which artistic work encourages ‘participatory virtues’. The participants are four art teachers who are also professional artists (with either BA or MA degrees) and have all participated in a teacher-training course at the Iceland Academy of the Arts called Art and Education for Sustainability. The course supported the participants in developing their approach to a teaching style that promotes awareness of sustainability.

Purposeful sampling was used. All the participants were chosen to participate in the interviews because of their particular interest in sustainability and because their master’s thesis subjects were in different ways related to EFS (table 1). The participants told success stories about sustainability projects within their school environments. In the interviews, the teachers were asked to describe an EFS project they thought was successful. They were asked to talk about their project

Art educator	Guðrún	Ása	Ásdís	Hugrún
Teaching level	Designer, Elementary Art Teacher	Actress, Elementary Art Teacher	Visual artist, teaches in technical college	Architect, teaches at an upper secondary school
Project	<i>Time Capsule</i>	<i>Diamond Village</i>	<i>Design and EFS</i>	<i>Rainbow Bridge</i>
Age Group	4th and 5th grade	1st and 2nd grade	Upper secondary	Upper secondary
Approach	Step by step, focussed approach	Transdisciplinary, story-line method	Model making as method	Share results with community

- Is the process inclusive? This involves both types

Table 1. Interviewees and their art-based projects.



Figure 3. Part of the installation *Time Capsule*.

Figure 4. "I chose birds because they sing for us, and hopefully for our children"

in detail, including all important contextual factors. They were also asked for their responses to particular issues concerning sustainability and their focus and actions. The interviewer sought their opinion in general about EFS, collaboration with others and the potential they see in EFS.

The four cases have been analysed to better understand multifocal perspectives in art teachers' development with regard to EFS. Through the interviews we assess what EFS means to the teachers as we interpret their stories, and finding examples of how they deal with virtues and vices in EFS. We aim to give concrete expressions to these interpretations by taking EFS actions and connecting them with ideas about inclusion, engagement and production of knowledge. Art and EFS both require an in-depth

understanding of critical approaches to art and education.

Analysis of the Four Cases

Guðrún has taught at the elementary school level for eighteen years. She created a project for her 4th and 5th graders that she called *Time Capsule* to be exhibited at a conference for art educators. When her students started the project they were aware that the project would get public exposure. This produced feelings of anticipation and showed them how they could effect change outside their classroom.

In *Time Capsule*, fourth and fifth graders created small artworks that fitted into glass jars. The jars were then arranged so that they presented a unified whole. The theme of the project was to preserve something that should not be lost in the future. The children's choices showed what they held dear, such as animals, plants, or a memory. They inserted their work into a jar and attached a small note that explained their choice.

The aim of Guðrún's project was to spark critical thinking and examine values. It also valued different points of view, embracing diversity of thought and experiences. By exhibiting the work, the aim was also to empower students as active citizens by participating in a project which generates hope.

It was incredibly successful and fun because it inspired them to think about sustainability from a more emotional standpoint.

Guðrún mentions that the arts can give students an opportunity for self-evaluation.

This is connected to developing the attribute of humility, to be able to exhibit their work and say, yes, I worked hard on this and I'm content with it. Some students have reached that developmental milestone, but others think it will all happen of its own accord and that one does not have to work hard at anything.



Figure 5. *Diamond Village* and its surrounding mountains

Creating a village joint based: Working with values and tolerance

Ása is an elementary school teacher with a background in drama, but who uses all art disciplines in her teaching. She has a strong belief in a transdisciplinary approach when focusing on issues that relate to sustainability. One of the sustainability projects Ása has worked on with her students is called *Diamond Village* based on the story line method with a focus on cultural diversity. The project provided inclusive settings for the youngest pupils in the elementary school to engage with social, economic and ecological dimensions of sustainability and form to developing productive group awareness skills and habits. The project centres on recycling and using the resources to develop a village in a remote area.

The focus was on students' imagination. The first step was to sort trash. All of the school's waste bins were emptied into large tubs in the school's entryway. This created a shock effect that can be very useful when teaching drama. The next step was to teach her students how to sort waste. Then they began to create a community for themselves, selecting a nationality and creating a character for themselves, after which the village was set up. When the visual elements were in place, Ása then introduced a problem. She set up a town hall meeting to look for solutions. The students immediately took a critical approach.

By using this story line method the students both experienced the problem first hand and empathised with it. It went beyond being a mere project to touching them personally... It was as if the children became more aware that their voice could make a difference.

At the end of the project, the students were given the task of designing enterprises and solutions that would help their community. In the final phase of the project the inhabitants of *Diamond Village* received a letter from a millionaire who wished to buy the village. The students reacted strongly. They were totally in agreement on rationalizing and defending their decision not to sell but keep going together.

Ása points out that children can offer brilliant solutions to problems, solutions that are superior to those offered by adults.

This is because children are still so straightforward and willing to take risks and try new things.

Design and Education for Sustainability

Ásdís is a visual artist who has taught at a technical college in Reykjavík since graduating three years ago. She tries to work with issues of sustainability in all her courses. One of her projects that focuses on cultural literacy employs model making as a method. The students construct models in 3D, using issues of sustainability to inspire their prototypes.

The aim of the project was to make learning relevant to the students and to connect it to what is important to the students' life and to the broader community. That way they have the potential in their future designs to apply what they have learned for the benefit of others. The aim was also to learn about materials and how they can reuse, recycle and up-cycle things. This acknowledges the value of the 'worthless' items they found in their own environment. By doing so they related learning to what they are most familiar with in their daily lives.



Figure 6.- 7. The *Rainbow Bridge* and students at work.

The project was successful and the participants were enthusiastic. The results demonstrated a wide spectrum of ideas.

Ásdís believes that it is important that teachers communicate the complexity of all the factors that come into play with sustainability to combat the notion that it's only about recycling.

Recycling is always what first comes to mind, and for some reason it is the easiest approach to sustainability. In this project, the students worked on different values.

In her work she tries to stimulate discussions on diversity and what characterizes individual nations; the similarities and differences. She believes that this discussion can contribute to greater tolerance.

Design study offers projects that inspire people to recycle and discover fun solutions for those more vulnerable in our society. One of these was to help kittens by designing a milk bottle with twelve tits so that many kittens could drink at the same time. Students discuss who is to benefit from their design and what materials might work best.

It is useful in connection to values and virtues to think of whether material things are something available for anyone to purchase or whether they are meant for a select few.

Rainbow Bridge: A Bridge Between Cultures

Hugrún, architect and art educator, completed her master's degree in arts education three years ago and has since taught art at an upper secondary school that focuses on art. Hugrún participated in an international project with a colleague that was part of a larger project called Town Squares in Limbo. The project focused on town squares in Reykjavík that were underutilized.

The aim of the project was to support initiative and develop cooperative skills. Hugrún emphasizes student initiative in her work but in her opinion the school system should prepare students better in that regard. "The students expect to be serviced too much." The project also focused on applying cutting edge technologies and taking a critical approach. Hugrún pointed out that within the school system there needs to be a greater awareness that everyone can effect change and that it is important to think locally and start small. Designers, in particular, can have greater opportunities to influence and be role models than most people by including these issues in their design. Critical discussions offer opportunities to learn about values, something that is very important. Hugrún focuses on giving her students projects that connect to real life situations, where the students have to put themselves in other people's footsteps and do a need-based analysis.

Project	Time Capsule	Diamond Village	Design and EFS	Rainbow Bridge
Focus	To preserve something that should not be lost in the future	Working with values and tolerance	Design study is inspirational	Efforts are recognised within the school and in the media
Links to community	Children can have an effect outside their classroom	Cultural diversity in a community	What characterises individual nations?	Connects generations, countries and cultures
Questions	What is worth preserving for future generations?	How do we want to live? With whom? Where How do we find solutions?	How can we learn from our culture? What is the value of the material? How can we fully use this value?	What unites us?

Table 2. Some pedagogical characteristics of the four studies

Hugrún students decided to work on a square in their school's neighbourhood in cooperation with a group of students from the UK. They designed the Rainbow Bridge, a bridge that could connect generations, countries and cultures. The artwork was made out of tops of soda bottles and was called soda bottle tops mosaic. It was formed as the beginnings of a bridge on each side with a roof made of the tops of soda bottles. The project was very successful, fun, and received a lot of favourable attention.

Hugrún puts an effort into sharing the results of her projects with the community, both the media and within the school. This way the students get a sense that their efforts are being recognized by the community and by their fellow students.

Summary and Discussion

Vices and virtues appeared in different ways in the projects. *The Time Capsule* project emphasized the importance of diversity that is clearly connected to one's self, and the importance of not letting what we have today be lost in the future,

so that our children can also experience that good feeling about something you have and

you don't want it to be lost just because you didn't treat it well.

In the *Diamond Village* and in the model design all the participants were given the responsibility for deciding and sorting what could be recycled and up-cycled. These important considerations should be related to the question of vices and virtues and the impact one's actions can have. As discussed earlier, the very nature of EFS lies in inclusiveness and individual engagement. Therefore, small changes in behaviour, the use of materials and habits are important. These small changes will add up.

Guðrún points out in connection to the *Time capsules* that the way students treat their material can inspire critical discussions since the raw material is a metaphor for the environment.

You can't abuse the material. If you have a stick you're going to use you have to treat it carefully. If you're not careful it might break. If you want your work to come out well you have to treat the materials gently.

The way in which the participants in the *Diamond Village* discussed what could be done, and how the

waste might be recycled and put to use within their community, is an indicator of care and diligence. In the *Rainbow Bridge* project and in the model design the participants learned to think through and within a material. The participants in both projects were patient when collecting materials; they discovered the value in material and continued to use it well. In their future material choices they may improvise new ways to use and to stretch both their materials and techniques to provide hope for a more sustainable future.

In *Diamond Village* the dilemma of handing over responsibility for the environment to someone else was highlighted. The critical discussions raised notion of the values of modesty and arrogance, greed and generosity, love, evil and egotism.

All these values are there because we're really talking about a community of living human beings. We are talking about things that all connect to this.

Conclusion

In all of the projects described above the artistic process gave the participants the possibility to assess social, cultural, economic, and environmental interdependence in a local context, and some of them with a global connection, like the bridge project and the story line village with a focus on cultural diversity. Through engagement in the project processes the participants broadened their awareness and understanding of social issues such as in instances when they had to think of what to protect for future generations, where the selections are good examples of humility. Among the many subjects they focused on in the design class, the model making allowed them to look at the economic issues of sustainability. In the story line village students worked together on considering political issues and in the bridge project they worked together on connecting the history of the participants. Going through a project such as those

discussed above requires respect for others as it fosters a sense of community.

The participants in all the projects used the knowledge and skills they learned in and through the arts to demonstrate virtues and vices with respect for cultural richness in local and global contexts. The participants were able to respond with critical awareness to various forms of the arts and were also able to express themselves through the arts about issues they care about. All the projects engaged students both individually and collectively in the creative, expressive, inclusive and responsive processes of the arts as they developed confidence in themselves as creators. As in wicked problems they realized there could be many answers to the same problem.

Students used critical thinking skills in exploring their thoughts, experiences, and feelings. They all used a range of processes to critically respond to their own works and the works of others with respect of their age.

Projects such as those four have the potential to be a foundation for self knowledge with a focus on values and virtues that can develop through arts experiences. These experiences, in turn, provide a key step for the students' future. Arts processes also enabled the participants to develop their understanding of others through working cooperatively in creative art making. The projects also offered students opportunities to work independently which required open-mindedness and understanding of others and challenged the older participants to develop solutions and make decisions. They had to question the norm and encouraged to take risks when developing their own ideas.

The production of knowledge was mainly through opening up situations for exploration in non-linear ways. As the problems were found and resolved new questions were often formed in the process. Arne Naes, a Norwegian founder of the Deep Ecology Movement wrote:

The essence of deep ecology is to ask deeper questions. This is the essence of a paradigm shift. We need to be prepared to question

every single aspect of the old paradigm.
(Capra, 1996, p. 6)

These case studies show that the arts have great potential for producing knowledge about sustainable issues and that participatory virtues provide useful criteria for the process. The cases in this study focus on consciousness, culture and ecology, dealing with vices and virtues in the search for personal values, for collective wisdom, and for artistic expression.

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Teaching and learning for sustainability: An Icelandic practice-based research.

Abstract

We live in critical times, where moving towards the goal of sustainability requires fundamental changes in human attitudes and activity. These challenges call for all of us to rethink our value framework and incorporate new approaches to what we consider a good life. Educators need to strive to create change and work towards a sustainable future through education for sustainability (EfS). This article reports on a project in which the author worked with a group of pre-service art teachers in the Iceland Academy of the arts (IAA) to explore how they can use an artistic approach to learn about EfS, identifying and discovering ethical challenges in contemporary life. This is part of a larger study, which looks at the potential of art in EfS. Using a participatory research method these students analysed which concept they wanted to focus on once they became practising art teachers. The findings indicate connections between action and reflection through an artistic approach.

Introduction

Sustainability can be seen as the struggle for a balance between the good life and the integrity of nature, where human actions come into conflict with nature and exceeding the earth's environmental limits as a result of an overemphasis on the good life (Háskóli Íslands 2012; Hattingh n.d.; Sampford 2010).

The Bonn declaration states:

The challenges arise from values that have created unsustainable societies... We need a shared commitment to education that empowers people for change. Such education should be of a quality that provides the values, knowledge, skills and competencies for sustainable living and participation in society. (2009)

This article addresses this challenge. It reports on an action research project that sought to encourage pre-service art teachers to not only address their own values and practices in relation to sustainability, but also to begin to develop pedagogical approaches that they could put into practice in classrooms.

The project required pre-service art teachers to perceive, interpret and understand the concept of sustainability, and then to understand how collaboration helped them to understand education for sustainability (EfS). The students were all enrolled in a critical place-based course called Art and education for sustainability. The course is part of the curriculum at the Iceland Academy of the arts (IAA) and emphasizes the attitude of the individual towards human rights and environmental issues, as well as economic and social equality. It aims to nurture a sense of self and self-criticism, with regards to democracy, activism and participation. These also reflect some of the concerns the Ministry of Education, Science and Culture, Iceland has introduced for EfS (2013). Including EfS in visual art education is consistent with the goals in the national

curriculum. For that reason the goals of the course included the aim to help students develop their values through critical discussions about art and culture. Through visual literacy, creative work and problem-solving, the participants discussed how they could affect the environment and take part in shaping culture.

This article analyses data collected on the use of an artistic approach as a tool in EfS. I begin the article by outlining the theoretical underpinnings of sustainability and EfS. I then analyse what and how pre-service art teachers can contribute to the field. I seek to answer the question of how pre-service art teachers can engage with the ethical challenges of contemporary life through EfS.

Sustainability and contemporary art

We all want to live the good life but we do not all agree on what ‘the good life’ actually is. Family, friends, good health, diversity, safety, independence, a healthy and beautiful environment, empathy and caring are all parts of a whole. Together they form our quality of life. To create the foundations for the good life one needs to foster many different qualities as well as understand how they interact with one another (Greenwood 2008; Jónsdóttir 2011).

The key to sustainability is to maintain the good life without diminishing the quality of life for others and by depleting natural resources, but protecting their use for one’s own and future generations. Pre-service art teachers have to go through a personal journey where they look at their own values, beliefs and life patterns that govern their behaviour. Allowing them to act on basic human values of justice, solidarity, peace and respect for life – values they already have but may not act upon – gives them a foundation to build on.

Values are the desirable principles by which people live. Morals work with the judgement of values as they emerge in actions (Parra 2013; Katzner and Nieman 2006). Education can help students to re-evaluate

what well-being really is, and create opportunities for them to rethink their values in life. A teacher’s task is to take part in stimulating his or her students to help them develop their values so that the students might be more likely to live their lives within the limits of the earth’s resources. In EfS and place-based education, it is important to consider the conclusions of researchers who have studied quality of life, well-being and personal values (Greenwood 2008). When we think of our values, we think of what is important to us in our lives, such as security, independence, wisdom, success, kindness and pleasure. Each one of us upholds numerous values with varying degrees of importance. A particular value may be very important to one person, but unimportant to another (Schwartz 2007).

One way of understanding the meaning and value of people’s daily living habits is through visual culture. Visual arts have been used through the centuries as a reflection of people and our actions; when looking at certain art we can see a different perspective on the world. The visual message of art is for some more accessible and easier to grasp than a message in a written text. Artists of all periods have dealt with ecological and social issues and have often contributed to changes in public conscience, values and attitude (Brenson 2001). Contemporary artwork of this kind has the potential to raise questions that gets the viewer to rethink their attitudes and behaviour, which, in turn, can lead to action.

Learning and teaching for sustainability

When education leads to action the process transforms students’ and teachers’ ideas and values. In justifying their beliefs, students deal with values and feelings and the context – biographical, historical, environmental and cultural – in which they are embedded. Meaning is made with different dimensions of awareness and understanding. In the absence of fixed truths, and confronted with often rapid changes in circumstances, Mezirow suggests

that one cannot fully trust what we question, our own points of view or what we know or believe, and that doubt calls for constant re-evaluation (2000). When educational settings make us question our own viewpoints, we discover a more dependable way to make our lives meaningful. We can look at and reflect on alternate points of view and create a new way of knowing that may be different from our old habits. This enables us to become tolerant towards others' points of view (Mezirow 2000).

When one's life is rated as having quality, one will simultaneously have a sense of self-knowledge and empathy. It must be noted that a complex scenario seems to be possible with these aspects of quality of life in that each can contribute to, as well as result from, quality of life. Happiness and wellbeing are linked to quality of life (Meeberg 1993). Therefore it is important for pre-service art teachers to become aware of what they value in life and what factors contribute to a good life in order to develop those issues further with their own students.

In EfS it is important to reiterate that what is considered to be wellbeing and/or the good life varies between individuals, and across different societies and cultures. Every teacher has to develop their own goals towards EfS in their school settings because it would be misleading to take the concept of the good life developed in one cultural context and apply it to other cultures (Keith 2004). As individuals we need to consider what influence we can have over our own lifestyles. Using an artistic approach, pre-service art teachers can identify and discover ethical challenges in contemporary life. They can engage with these challenges through art and art education (Eisner 2002; Hammersley 2006; Jónsdóttir 2011, 2013a). Some researchers have discussed how arts can in a critical way contribute to social changes (Haynes 1995; Hicks 1990; Noel 2003). Haynes says that improved cultural awareness will result in artists wanting to create influential critical work that makes people think about where the human race is headed (1995: 50).

Education and research in the field of sustainability calls for interdisciplinary approaches and collaboration while depth and expertise is applied to the individual disciplines. It is important to aim to create settings that will increase local innovation and creativity. An interdisciplinary approach is considered one of the fundamental approaches in an information- or knowledge-based economy that is fuelled less by imported technology (UNESCO n.d.).

Art is an important part of the cross-curricular approach to EfS that includes a moral foundation. Art can bring about general changes in attitude and lead to a better future for all (Hetland et al. 2013). Education should combine these important issues, based on the convergence of the arts and other general subjects. EfS should include critical thinking, and should support students to define values and gain an understanding of the importance of actions and become active participants in society (Breiting et al. 2005).

Education must include stimulating experiences that engage individuals and challenge them with learning tasks both individually and in a team. In EfS students should develop action competences that motivate them to seek, integrate and create knowledge (Mogensen and Schnack 2010).

The core skills in EfS involve a holistic understanding of the current and recent situation. That involves going beyond raising awareness to addressing the underlying issues leading to unsustainable practices in students' daily lives and to challenging the assumptions that underpin day-to-day practices. Education can help learners develop skills that influence change within their local society. In doing so, students could themselves create a systemic view around which to organize new practices. EfS relies on the strengths of collaboration and cooperation (Brna 1998) and transformed knowledge (Miller et al. 2010) that leads to action.

Pre-service teachers bring a great deal of knowledge with them when they enter teacher education programmes. At the IAA they are all

professionally trained artists, designers or architects with art degrees. Therefore, once in the programme, learning is based on their prior knowledge. The organization of the learning sequences is aimed at harnessing the students' knowledge and experience and helping them transform knowledge into action. Keeping the syllabus flexible creates a fluid process that builds on the students' own discoveries. Some research on the prior beliefs and conceptions of pre-service teachers as they enter teacher education suggests that life experiences play a powerful role in shaping the interpretation and application of the teachers' programme that has to do with the influence of prior knowledge on the understanding and integration of programme concepts (Bullough 1989; Zeichner and Gore 1990).

With both values and an action oriented collaborative pedagogical approach in mind the research centres on the participants' experience of and attitude towards arts education and the potential the arts have in EfS.

Methodology and methods

The study is practice-based and grounded in continued interaction with the participants, during the years 2010–2013. With a special focus on the 2013 group. The issues that I discuss in the article emerged from my reflection on the interactions. My reflections were shaped by issues and framing concepts that I brought to the study, but also and more profoundly by the issues that emerged in the course of the study. The interviews constitute primary data, which enhance knowledge about and within the practice at IAA adding a new dimension to the limited existing literature in the field. I use grounded theory in this article as the framework for analysis where I also reflect on my own artistic practice.

Different data were collected from the course Art and Education for Sustainability. First, most of the discussions in the course were taped, recorded and transcribed. Second, all resources, documentation

and information produced by the participants during the course were collected and reflected on in journal writings from all participants including myself. Third, the reading reflections from the participants also gave interesting information about the participants' experience and interest, as did the visual expressions created in the course that reflected on its content. Fourth, to maximize the student voice and presenting it as validly as possible, one of the data-generation tools used in the project are two interviews, each one-hour long and semi-structured, one taken before starting the course and one after completing the course. The course was held in nine weekly sessions, three hours each. The interviews, artworks and the artists' statements are the data underlying this article. The course focused on critical dialogues to establish partnerships between the participants.

Data analysis

All the audiotaped data were transcribed and thematically analysed and coded. The findings were compared with previous data collected from the same course taught in 2010–2012.

The representation of the results of practice-based research cannot be limited to texts, since the application of such procedures in the representation stage can make the research findings easier to understand (Bergold and Thomas 2012). Since the participants in this study are used to expressing themselves artistically, it was sometimes easier for them to express their ideas through visual expression or performance, keeping in mind that

The meaning of images resides most significantly in the ways that participants interpret those images, rather than as some inherent property of the images themselves. (Stanczak 2007: 11)

The participants had to consider the role of written, spoken and artefact-based languages in the formation and communication of understanding. The

participants in this study have all read this article and have had the opportunity to comment on it.

All researchers take political and ethical stances, but being human also involves that they inhabit them and are not fully aware of them. When political and moral positions are acknowledged or exhibited there is a potential to find strategies that enable the outcome to be judged rigorously (Griffiths 2011). In a research like this one it is important to pay close attention not to be biased and remember the power you have as a researcher.

Learning sustainability through art interpretation

One of the first tasks of the course was selecting and presenting a contemporary artwork by other artists, which the participants believed to have significant meaning for sustainability. The interpretation of contemporary artwork included analysing issues in the work and finding underlying themes. The students connected the issues to something they thought of as important, in history, politics or everyday life. Contemporary artwork served as a departure point for the participants' own investigation. An educational opportunity arises when the content of an artwork is about issues relating to sustainability. In environmental issues, humanity is faced with a flow of information of a magnitude that ordinary people will not react to and do not know what to do with (Orr 2002). This is where a metaphor and a visual interpretation might be suitable. Works of art with a clear focus might help viewers to understand their world better. Through critical discussions the participants were encouraged to think about different ways of knowing and modes of working and questioning decisions, rather than merely receiving them. In this context, one of the students said: 'It was important to learn by doing something and experiencing it rather than just hearing about it'. The teacher was no longer in the role of implanting knowledge, but rather as a facilitator. This is in accord

with Biesta's (2010) emphasis on the need to approach Dewey's ideas in a new way, where learning by doing does not require generalizations, but rather discovery and being literate about the different elements of society.

The course at IAA is student-centred. The teaching strategies engage the learners and help them use their curiosity and energy. First, by my design of the syllabus based on interviews that I took with the participants individually before the course started. The course also draws on students' experiences when clarifying concepts and the activities were designed so they could make comparisons, categorize information and to discover answers on their own. In order for this to happen the syllabus has to be flexible to be able to include exercises based on students' discoveries.

One of the exercises was to work with memories through photographs using a place-based approach. All the participants brought in images of a place with a significant meaning to them. They worked in pairs, reflecting on the place through different senses. Art teachers work with their students through making, looking at, reflecting on and developing ideas. To understand one's environment one has to be literate in these visual elements. The visual image is a dynamic part of our life and culture, and has layered meanings and a great influence on our life (Jónsdóttir 2013). In the interviews, some of the students mentioned that they thought this exercise worked well to increase environmental literacy. One of them stated:

It was strange when I was doing this exercise with another student because it was like we were talking about different places through artistic expression and I completely understood his place, and he mine, and why they were important to us. I experienced his place through my own memories.

The visual approach not only provided pleasure and enjoyment, but also enabled the participants to gain deeper insight and awareness. Each location selected by the participants provided different visual elements

and had different affects. In this sense, a place-based approach is useful when working with visual knowledge (Jónsdóttir 2013b). In final responses one of the students wrote:

This learning process connects our history and our place, learning is dependent on time and place, a holistic site-specific approach where everything connects. I use it in the school where I teach, the neighbourhood, the city, social sustainability, etc. ...

Knowledge lives on, if we honour traditions. When reclaiming traditional values through place-based learning I think we get better attention, involvement.

Learning sustainability by making art with young people

The next assignment was to leave the classroom and work with young people who selected a place close to their home where they felt a change was needed and where they wanted to have an effect. In this project the goal was to provide a situation where the participants had the adolescent visualize imaginary situations and understand how their ideas could affect them. This required the youngsters to search for problems, raise their own questions, and find their own solution. After presenting their projects, the participants all agreed with Breiting et al. (2005) on the importance of developing critical thinking. Critical thinking encourages an analysis of situations and arguments to identify faulty or unreliable assertions or meanings. This expectation of action or social change clearly distinguishes critical pedagogy from critical thinking. As critical pedagogy is interested in collective action, so individual and social criticality are intimately linked (Burbules and Berk 1999). Critical pedagogy helps artists and art teachers to engage with activities to free themselves from taking the stereotypical position of a teacher. In place-based art and EFS, teachers can see students as actors in building their own knowledge and understanding

its value. As the challenges of sustainability are often contradictory and complex, it is important for students to discuss conflicts and complex realities (Breiting et al. 2005).

The participants agreed that critical thinking should be part of EfS as it makes students more competent in identifying values and understanding the importance of taking action and being an active participant in the community. In many cases art creation will help students to emphasize issues they feel are worth fighting for, and thus build a bridge between knowing and acting.

One can talk about students achieving 'action competence' when they have developed the ability, motivation and desire to play an active role in finding solutions to problems and issues they feel are worth fighting for (Mogensen and Schnack 2010).

The main themes of the assignment solutions were related to combating pollution and creating settings for increased opportunities of others. The preservice art teachers were surprised at how most of the participants explained the problems the world is facing as related to the fast pace of contemporary society. They all found it important to create educational settings where the focus is on the learning process rather than on a final product. Many of them found they could help students understand the concept of sustainability by connecting it with their culture and history. In this way they encouraged creative and critical thinking through a research process with a focus on the desirable principles by which people live.

Learning sustainability by focusing on values in artefacts

The next class was therefore about values. The students brought in different artefacts, which they believed stood for something that had an important effect on their values. They also read a few articles and got to know the Schwartz value system (Holmes et al. 2011). After introducing the artefacts they

created their own mind-map of important values to work with in the classroom. Many things were mentioned in a group session about values such as respect, kindness, honesty, courage, perseverance, self-discipline, compassion, generosity and dependability, which they saw as important for their future students to foster to live a good life. All the participants concluded that the main emphasis of EfS should be on values, which could be thought of as the guiding principle underpinning one's lifestyle. The students' voices strongly suggest that it is important to focus should be on values:

- They can guide us through many complicated situations in life and help with making sustainable choices
- Students have to learn how to live in peace and harmony with all creatures and nature
- Empathy is a keyword
- Respecting others is important and part of good manners
- Working with values can help students to define what is a good action and what is a bad action
- Learning about values is often learned from others
- It is important to talk about what's right and wrong.

When pre-service teachers make these kinds of statements on values the topic of values becomes a completely 'normal' one in the classroom. In the future I will put more emphasis on having the students work with their own values in the course because the participants felt the need to talk about what they did right, what they did wrong and how to make better moral decisions. Many of them mentioned that at home they are more concerned about how they live their life.

Working with localized social actions and activating local settings creates potential for conservation with an ecological approach where human culture is nested in ecological systems (Gruenewald 2003). Smaller societies like Iceland

can develop local models of sustainability with place-based education as a central element. The value of being true to oneself is considered important in EfS, because the ideology people espouse is not always reflected in their action. In this context one of the students stated:

If the focus is on the truth and students admit mistakes they can learn from it, and it makes them feel good. They begin to trust themselves more and this gives others a reason to trust them.

Trust helps students to build self-knowledge. The participants considered how arts could help students perceive, interpret and understand ideas of sustainability as one of the students said: 'Values can motivate action. However, people have to be aware that it can be implicitly used to explain and justify action'.

The importance of love was also mentioned because that is what keeps families, circles of friends and larger communities going. Discussions centred on issues such as when people experience caring, kindness and friendship from another person they are more likely to turn around and give those same qualities to the next person. During the discussions one of the students stated: 'If we teach our students to show compassion, forgiveness, empathy and acceptance, the whole world is more likely to live in peace'.

The class concluded that it was crucial and indeed very easy to work with values in art education. In written reflection, all the participants believed sustainability is an important factor for the arts and art education. It has the potential to provide an interpretive lens for investigating the environment, implicitly highlighting a particular set of goals and values. It can also motivate critical reflection about social practices, and spotlight human engagement with ecology.

Designing a learning sequence

In the following class the participants created learning sequences based on the EfS goal to educate responsible citizens who have the competence for action. All had in common motivational values. They all had the potential to use the function of art to give people a fresh understanding and awareness of our environment and how we interact with it. One could say that the participants achieved ‘action competence’ because they developed the ability, motivation and desire to play an active role in finding solutions to problems and issues they felt were worth fighting for (Mogensen and Schnack 2010).

An important part of action competence is the ability of students to take part in deciding on a topic (Jensen and Schnack 1997). One can assume that the selection of a subject is directly related to the interest of students and those factors they feel it is important to work with. Therefore it is desirable to elicit the diverse voices of students, to use dialogue and pay special attention to issues that deal with equality, social justice and democracy. Action competence, which is one of the key principles of EFS, is an individual’s capacity to critically select and conduct possible actions that may solve societal problems through democratic mechanisms (Breiting and Mogensen 1999; Jensen and Schnack 1997).

Consolidating and evaluating learning with artistic expression

The final task of the course was artistic reflection on the course context. The artworks provided the participants with an opportunity to summarize their findings in the form they found most relevant. Using art in action research enabled the participants to express their personal and community concerns. It encouraged dialogue within the course, which,

in turn, yielded richer data. Through the art, the participants could transfer knowledge and information about personal and community issues through discussions about the artworks. The students had the option to take part in a group exhibition, ‘Relate North’ at the Nordic House, which some of them did along with a few students from the course last year. Others showed their work at the IAA. When exhibiting the findings the participants gained access to those who are outside the study, including other students, teachers, policy-makers and politicians. Artwork on display can also communicate an idea or a feeling, which can depend on one’s current situation in space and time. It is important to identify which of those stories or narratives are important and if they have any links to lived history or if they provoke other questions concerning the present. Some of the works promoted the sustainable use of materials like the piece

Hey, (Figure 1) an installation; an animation projection on to a wall-piece, made with hay and baling twine. The work is built up with photos of new grown grass in a field, dried hay and the connection between these elements. But the work was also a homage to the artist’s grandfather, a farmer concerned about recycling who did not like to waste good materials. The artist’s grandfather belonged to a generation that grew up with almost none of the modern technology and luxury we take for granted today, a lifestyle that makes our lives more



Figure 1. Kristín María Ingimarsdóttir, *Hey*. 2013, Installation

comfortable and easier in one way but also threatens our environment now and in the future.

Other works focused maintaining and developing existing technology and knowledge of issues in visual arts like the work *Past Times Today*, which represents how the artist gives old fabric such as bed sheets, linen and old curtains new romantic life, valuing the old tradition to reuse all fabrics (Figure 2).



Figure 2. Brynja Emilsdóttir, *Past Times Today*, 2013, textile.

When considering how factors within sustainability interact, all participants mentioned the importance of focusing on the role of culture and values in society. The work ... *so on earth* deals with how people have to decide what they want to pass between generations. The work is built up with eight layers of transparent photographs that reflect on life with all its knowledge, ideas, actions and memories combined into a whole that defines who we are today (Figure 3).

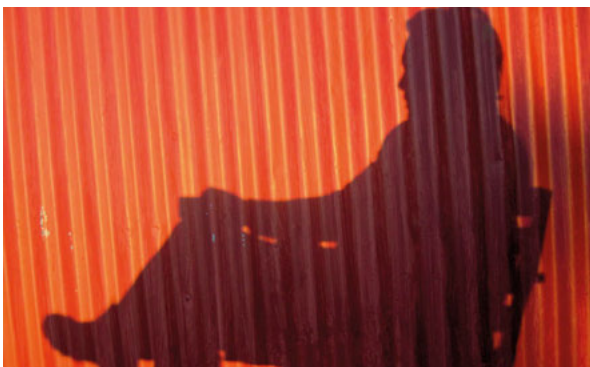


Figure 3. Guðlaugur Valgarðsson, ... *so on earth*, 2013, Photographs on plexiglas, first layer.

The common thread in the artists' works can be connected with how ethical challenges in contemporary life engage pre-service art teachers in their creations. Their values and attitudes are based on their culture, which in turn influences decisions on the sustainability issues addressed. The participants felt that the course process produced reflective knowledge, which helped them identify sustainability issues, as well as ones they had already developed in their own set of values, and which gave them the potential to take action.

When working with contemporary art in EfS it is relevant to ask questions and create settings for critical discussions that lead to visual literacy and knowledge. One can look at whether the work tells a story or has narrative elements. Some of the works increase our understanding of issues relating to sustainability and how we value life. My own work *Value Archive* represents my search for my intrinsic values. The creation of the work is of participatory origin. I invited 43 women to share messages they want to pass on to future generations (Figure 4).



Figure 4. Ásthildur Jónsdóttir, *Value Archive*, 2013, artist book, 40 x 40 x 40cm.

In the course I make sure to make my own contribution to the concept of sustainability where I place my own findings with the students but not separate from them, because this is a collaborative journey. All the works seem to be motivated by a particular set of underlying values concerned with social and environmental issues.

Conclusion: Transformative education for EFS is about collective endeavour.

The findings suggest that a course like Art and Education for Sustainability is a good way to create a setting for a collective agency where a group of students are given the task to achieve shared knowledge and skills based on both the participants' resources and the interactive, coordinative and synergistic dynamics of their transactions.

The shared beliefs in the participants' collective efficacy influence the types of future they want to achieve through collective action. In being a part of a group it is the behaviour of its members that promotes its operations. Two of the students state in this context: 'It helped me to shape and clarify my ideas when articulating to others and helps shape and clarifies ideas'. The collaboration had a positive impact on the learning process of the students: 'A group has more resources to call on than an individual'. I will use this in my teacher education practice to stimulate reconstruction of students' existing beliefs and knowledge. Trust and mutual support were stimulating factors for the participants and they agreed on being more willing to risk expressing partly formed ideas, to ask questions, to admit to a lack of understanding and to challenge fellow learners in the small group context. When sharing, they developed self-confidence as learners, and the positive reaction of peers contributes to the valuing of personal experience and confidence in their capacity to generate knowledge. Trust must be the key element in professional development among scholars when developing mutual objectives.

This course empowered the participants. They became engaged in EFS both through action and thought. They were affected by a wide range of influences, past experiences, cultural and social norms, memories and our local settings. Values, to some extent, are connected to all these issues. They represent a strong guiding force, shaping our attitudes and behaviour throughout our lives. EFS can get

people to internalize and it has the potential to get people to believe in what they observe. Art teachers can take up EFS issues such as: promoting sustainable use of materials; maintaining and developing existing technology and knowledge of issues in visual arts; and working with content that increases understanding of issues relating to sustainability.

The findings suggest that teacher training should stop promoting the spectator view of knowledge and focus on Biesta's (2010: 493) argument: to concede that the knowledge we can gain through experimentation is knowledge about relationships and, more specifically, about relationships between our actions and their consequences. The course was enriched by collaboration and harnessing the participants' diverse knowledge, and their experiences to feed in to it. I facilitated reflection, debates, arguments, dissents and consensus, to stimulate the articulation of multiple voices and positions, which lay the foundations for empowerment. When empowerment is based on inner transformation it can motivate people to improve not only their own lives but also the lives of others (McLaughlin and Davidson 1994). Individual empowerment, i.e. inner transformation in collective action in the course, must therefore be just as important as the external community development. In the course it is the combination of individual change and the collective change of all the participants that provided the potential for empowerment and action efficacy.

Even in countries with strong education systems like Iceland, there is a need to reorient education, awareness and training to promote widespread public understanding, critical analysis and support for sustainability and wellbeing. We need art teachers that skilfully explore the frontiers of knowledge and also integrate ideas, connect thought to action and inspire students. This research argues for the importance of transdisciplinary artistic approaches to EFS. The focus should be on affective outcomes of values, attitudes. Art has an important role to play in this process.

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Artistic Actions for Sustainability in Contemporary Art Exhibition

Ásthildur Jónsdóttir & Chrystalla Antoniou

Introduction

Contemporary art exhibitions have the potential to play a key role for cultural sustainability, as they have unique assets to build bridges between different community members, as well as encouraging self-awareness, values and decision-making. Many contemporary artists deal with issues that are disregarded in mainstream culture and politics, but which may be very welcome in educational settings as such issues are suitable for stimulating discussion, awareness and learning. In this chapter one art exhibition in Iceland is examined for the potential it offers in understanding the importance of sustainability and the ethical issues involved in a society's development.

The exhibition *Challenge* took place at the Árnes Art Museum in Hveragerði, outside Reykjavik, in Iceland, from January to May 2015. The museum,

mostly publicly funded, runs various shows of contemporary as well as modern art in its four large exhibition rooms. The museum director approached one of the authors of the chapter, Ásthildur Jónsdóttir, and asked her to curate an exhibition based on sustainability. The resulting exhibition was composed of two participatory artworks and associated workshops. Participatory art originates from the relationship between humans and the social context of creating art. In the participatory approach the audience is engaged directly in the creative process, allowing members of the audience to become co-authors, editors, and observers of the work. Participatory art works have the potential to create a dynamic collaboration between the artist, the audience and their environment (Bishop 2006). Many visitors came and saw the resulting exhibition, attended associated workshops and guided visits for the public. The events broke attendance records for the museum. The visitors included local residents, travelers, school groups and groups of art teachers.

The exhibition and related activities were fundamental parts of Jónsdóttir's doctoral research which investigated the potential of art in education for sustainability (Jónsdóttir, Macdonald & Jokela, 2017). Learning for sustainability involves gaining a holistic view of a situation while working towards an understanding of it. Many Nordic scholars put a strong focus on environmental awareness through art education. One inspiration is Helene Illeris, whose works in critical art education focus on aesthetics and environmental protection with a strong relation to values and virtues, aiming at changing society through a transformative pedagogy based in liberation, creativity and consciousness (Illeris, 2012). Jónsdóttir used action research and art-based research methods in her work. The activities at the art museum were assessed through a case study (Stake 2003) based in an action research model (Kemmis & Wilkinson 1998). Interviews were conducted with local art teachers and the museum director, as well as with workshops participants.

The aim of this chapter is to describe and explain how an art exhibition can raise awareness of sustainability issues by exhibiting diverse contemporary artworks that deal with different aspects of sustainability. The chapter provides examples of the benefits of promoting sustainability through art exhibitions, and suggests a model that has the potential to be replicated anywhere in the world. In the next section, the selection of artworks is described.

Challenge: The art exhibition and the selection of artworks

Jónsdóttir selected works by twenty-six contemporary Icelandic artists that included photography, painting, performance and installations. The selected works indicate a firm connection to the local environment dealing with sustainability and ethical issues involved in a society's development.

The purpose of the workshops and during the guided tours was to focus viewers' attention to discussions of environmental issues from the perspective of society. It was an important goal to create settings where visitors had an opportunity to participate in the activities in the exhibition. Participation and communication is the building block for a society of shared responsibilities. From the beginning, when designing the exhibition and planning the theoretical framework of the exhibition, it was a conscious decision to create settings that would open up possibilities of connecting to many-faceted values in society, encouraging solidarity and shared values between generations. Selecting works that have the potential of explaining how human creativity is often in close contact with culture, and therefore cultural sustainability can be characterized both by utility and maintaining aesthetic experiences and values.

The selection of the artworks was framed by the wish to show how sustainability is affected by a range of environmental, economic, cultural and

social factors which may interact or overlap with each other. Here, it was stressed that changes within one factor can affect another and change can only be sustainable if it takes into account all these factors (Hawkes 2001). Focusing on educational value, the exhibition aimed at providing an atmosphere that would raise questions relating to the wicked problems of sustainability (Rittel & Webber, 1973). Wicked problems of society often have more than one solution, and a solution in one place and time is not necessarily a solution in another.

Culture was looked at as one of the fundamental aspects of sustainability in relation to environmental, social and economic viewpoints. When curating the exhibition, the selected artworks were linked by the idea of wanting to provoke viewers to consider their joint personal responsibility and help them reflect on values and virtues regarding sustainability (Kagan 2012; Macdonald & Jónsdóttir 2014).

The topics of the artworks selected ranged across a wide spectrum of sustainability issues (Jónsdóttir 2015). The chapter does not allow for a detailed reflection of the selection of all the artworks but there are however some important issues that can be highlighted. For example, some of the works exhibited deal with how nature and natural resources are invaluable, providing services that humans cannot live without – services that are important components of a sustainable society (Orr, 2003). Some artworks ask whether sustainability concerns refer to a struggle for a balance between the 'good life' of human beings and the integrity of nature. These are important issues as we know that an imbalance lead to exceeding the earth's environmental limits (Háskóli Íslands 2012; Sampford 2010).

Other works reflect on the effect that humans have on the environment due to society's demands for increased economic growth and the demand for more energy. With Iceland as reference, some artworks question the fast growing tourist industry and the effects of increased pressure on the natural environment. Two of the works present clear

references to nationalist ideas and invite the viewer to ponder the directions in which society has developed and the increased emphasis on the myth of the 'pure nation', as well as the emphasis on cultural stability.

The exhibits aimed to provoke critical thinking and encourage viewers to take a stand on the issues discussed, even demanding their participation. One example of an artwork of this category asked questions about how we utilize our resources and the consequences of inaction. For example, the photographic work *Revelation III*, by Hrafnkell Sigurðsson, shows the unsustainable use of materials by humans with references to the culture of packaging. In the work a plastic bubble-sheet is drifting down to a depth of twenty meters in an Icelandic lake. The diameter of the plastic is of the approximate size necessary to wrap the artwork.



Hrafnkell Sigurðsson, *Revelation III*, 2014 Photograph, 144 x 96 cm

The works raised questions about consumption and its consequences. Stimulated by the artworks, viewers were invited to reflect on their daily consumption. Consumption is a complex phenomenon and the culprit is seldom one person (Jónsdóttir 2015). Inaction can be expressed as laziness, lethargy or sloth leading to a waste of resources.

Some of the works were chosen with the aim of encouraging people to reflect on values and the

relationship between humans and nature. The untitled work by Libia Castro and Ólafur Ólafsson is one example, showing the artists wearing Icelandic national costumes deals with self- and national-identity and gender roles. On the one hand a man wears a woman's costume, and on the other, a foreigner wears the national dress. At the same time, by posing in front of an aluminium plant, they raise questions on whether contemporary society has forgotten its connection to nature. In this way they elicit an ethical perspective, encouraging people to reflect on life and culture in connection with heavy industry in Iceland. Reflection was invited as to the cost to the environment resulting from harnessing natural resources. This work created a dialogue with other works exhibited that raised questions regarding human beings' connection to nature.



Libia Castro & Ólafur Ólafsson, *Untitled (Portrait of the artists wearing the Icelandic national women's costume; peysuföt and upphlutur)*, 2000, Photograph, 50 x 75cm,

Learning from artwork: The role of place

The main focus in this and the next section is to discuss some theoretical perspectives of the exhibition as a learning process based in arts-based environmental education, which can be viewed as one tradition within a broad program of education

for sustainability. Art activities offer unique ways of interpreting and signifying aesthetic experiences. Both through looking at and making art, people can develop their ability to come closer to reality and their inner self. At the same time such activities feed and guide human sensibilities for reality and life. Art activities invite a more indirect and unforeseen learning process to take shape. Different kinds of learning take place when humans connect to the natural world through art compared to connecting to it via knowledge developed from scientific methods (van Boeckel 2014).

Some contemporary artworks are well suited to help us approach the issues we face regarding sustainability through diverse perspectives and issues such as ecology, the environment, equality and philosophy. Such artworks raise questions of who we are, what we prioritize in our lives, what is our relationship to the world surrounding us, how we behave, and the impact our behaviour has on our environment and on our society. The impression or emotion created by artworks can be long-lasting. The arts make vivid the fact that words in their literal form and numbers are limited in their ability to represent the world, i.e. the limits of our language do not define the limits of our cognition (Eisner 2009).

Many countries and a wide range of schools and educational traditions are now oriented towards UNESCO's learning pillars for sustainable development, which focus on gaining a holistic view of a situation while working towards an understanding of it (Jónsdóttir 2011; UNESCO 2012). Such learning goes beyond raising awareness by addressing underlying issues and values that lead to unsustainable practices in our daily lives, and by challenging some of the assumptions that underpin day-to-day practices.

Artists, in whatever medium they work, often create works that are closely related to the social context and are influenced by current affairs. Artists' works can explore ideas, concepts, questions, and practices that examine the past, describe the present, and imagine the future (Hicks & King 2007).

Teaching critical thinking is often part of education for sustainability, increasing the competence of students in identifying values and understanding the importance of taking action and being an active participant in a community (Breiting, Mayer & Mogesen 2005). Art projects that engage with sustainability offer a combination of critical and creative thinking, often focusing on perceiving and exposing social and political contradictions, and thereby empowering viewers and participants to transform oppressive conditions.

Artwork can help a viewer interpret, research and create art that deals with concepts related to sustainable development, use different kinds of materials in a sustainable manner, and maintain and develop a technical knowledge and understanding of materials. As in the other Nordic countries, the focus in Iceland since the mid-1990s has been on encouraging students' exploration of their own fascination with popular culture through a quest for alternative, open-ended and reflexive conceptions of art education in relation to concepts such as curiosity, fascination, polycentrism and performance (Illeris & Arvedsen 2011). With its diverse educational approaches art education has the potential to engage students in learning about sustainability.

Starting in the middle of last century scholars began to develop a curriculum that is founded on and related to the environment, starting with environmental education and later developing with a focus on place-based education (Somerville and Green, 2015; Birkeland, 2014; Gruenewald & Smith, 2007). Scholars have developed ideas on place and locale that involve people and the communication that occurs within a place (Knapp 2005). It has been useful for educators to use a place-based approach to create settings that give people a particular and personal interest in society and the land (Gruenewald 2003; Jónsdóttir 2013) and to provide a good basis for working with sustainability. Meaningful education provides students with the opportunity to work on projects that create connections between the place

of the curriculum and the place of the students, to one another and their own experiences. Students are encouraged to think critically when the particular qualities of the local environment are valued and questioned in relationship to assumptions about progress and human relationships to nature. In this way, teaching becomes responsive to ecology and local culture as the learning experience is explicitly rooted in the location of the learner (Graham 2007).

An experiential and cultural approach to sustainability in art exhibitions

Sustainability has been related predominantly to its environmental aspects and this relationship has been well documented in literature on education for sustainable development, which covers many research traditions and educational practices (Sandell et al 2005). The broad concept of sustainability requires interwoven contributions from various disciplines to cover a broad range of knowledges, values, skills, attitudes and practices.

An experiential approach based in the educational principles of John Dewey (Dewey 1938) makes it possible to go beyond unilateral approaches of sustainability that are tied to particular scientific aspects – often limited to either ecology or the social sciences. An experiential approach operates in terms of the deeper and larger issues of education offering possibilities for learning from direct experience. One relevant approach focus on the cultural perspective. Eagan, Cook and Joeres (2002) highlight the importance of understanding the influence of culture through facilitating cultural communication when investigating and assessing issues related to the environment and sustainability. Even though the Brundtland Commission's report (WCED, 1987), which put forward a key definition for sustainable development, showed little attention to culture, recognition of its key role in sustainability appears to be growing and the academic sustainability agenda has widened, incorporating a broader cultural

perspective into the former narrow scientific and technical focus (Brooks & Ryan 2008).

The ways in which culture is approached in the framework of sustainability vary. For example, for Hawkes, (2001) culture forms a separate fourth pillar in the three-pillar model of sustainability composed by the environment, the society, and the economy, whereas for Worts (2011), culture is the foundation for the rest. Dessein, Soini, Fairclough and Horlings (2015) have presented a more complete model that represents three different roles that culture adopts in the sustainability framework, namely the self-standing, the mediating, and the transformative role of culture for sustainable development. The self-standing role refers to culture as an autonomous pillar but linked with the other three well-established pillars, the ecological, social, and economic. The mediating role is defined by culture for sustainable development as a situation in which culture adopts a connecting role, acting as a driver of sustainability processes. Lastly, the transformative role of culture for sustainable development gives culture an evolutionary role for creating sustainability. The different approaches are evidence of the academic efforts to find a position for culture in the framework of sustainability and show the recognition of its relevance and significance on a theoretical level.

On a practical level, art exhibitions and contemporary art in particular, have a pivotal role to play. Contemporary art exhibitions have the potential of engaging people with all aspects of sustainability, from multiple perspectives and with alternatives paths (Kagan 2012). Contemporary art exhibitions that intend to promote sustainability indicate that settings in museums and galleries can be created and shaped to shed light on various issues. For example, instead of displaying impartiality in ideas, practices and activities of the past an exhibition can promote environmental learning by highlighting the causes of environmental damage (Barrett & McManus 2007, p. 332). Museums in particular have the potential to develop new audiences, engaging young people

in innovative ways, according to the philosopher Bourriaud (2002). When institutions such as art museums actively solicit engagement and contribution from visitors they can make a significant impact on the health and vitality of the organization (Simon, 2010).

The existence of learning resources and informal educational infrastructure is highly significant, but not sufficient if individuals are not able to effectively and efficiently utilize them, and if they do not have guidance in knowing how to mix and match them (Falk 2005). Therefore, it is important to analyse if and how teachers' awareness, readiness and skills are crucial when analysing learning outcomes concerning education for sustainability when using contemporary art exhibitions as learning resource and infrastructure. It is reasonable to argue that teachers need guidance, training, collaboration and experiences through which their skills can be enhanced. A curator can create a setting for teachers, students and the general public and facilitate active participants in the exhibition. When making educational use of the exhibition, sustainability issues can be considered through an artistic lens.

In the next section, the art exhibition *Challenge* is analysed. The analysis focuses on the close partnership which was developed with local schools and which placed the learning process within the community, thus reflecting the concepts of collaboration, collectivism and shared responsibility in a concrete manner.

Analysis of the art exhibition *Challenge*

The remainder of the chapter describes the results of the analysis of the exhibition. Each participant acknowledged that the exhibit had been beneficial for their professional life.

One of the artworks was called *Our Nature – My Wishes for the Future* by Ásthildur Jónsdóttir. In that project the artist invited young people from the South of Iceland to take part in creating artwork that utilizes the form of a book. In the book-art the participants



***Our Nature – My Wishes for the Future*, and workshop view at the exhibition *Challenge*, 2015**

discussed their vision of the future and their hopes for future generations. Each participant was invited to create a page in the book-art with the collective aim of fostering a sense that art can be a dynamic part of our lives, and provide a lens through which each and every one of us can examine our perspectives on life. This participatory art was not just something that the visitors stood still in front of and quietly looked at; instead they co-created it.

The role of *Our Nature – My Wishes for the Future* was to provide a context for dialogue between young people and the exhibition's visitors about the art exhibition as a whole. It included the voices of the local children that visited the exhibition with their schools and took part in making the book-art after looking at and interpreting the messages they found in the exhibition. The book-art created a space which fuelled the students' interest in those elements of our society that might be improved. The students had the opportunity to freely express their opinions, allowing each and every one to develop his/her position on issues by listening, reflecting, exploring and assessing arguments. All the participants offered strong connections to their own lived experience. The book-art thus provided a potential to empower communities and strengthen the public's awareness of environmental issues, as well as to enhance the influence that the public, through civic action, can have on the decisions of those in power.

It was not possible for all schools in the county to bring the students to the museum. The artist brought the book-art project out of the museum and visited two schools that had expressed interest in taking part in the project. One of the art teachers expressed gratitude for that effort:

It is so important for the schools to be exposed to artworks in their daily schooling. In our village there is only one sculpture and a few older artworks inside the school. To get artists to come into our school and work with us on contemporary issues is very valuable (teacher A).

Before starting their creative practice, the students were shown photos of the artworks exhibited and given space for interpretation and discussions. By creating a page for the book, each student took the responsibility of completing a project that explores issues concerning their own community. They identified natural elements in their environment that they considered important to conserve, and expressed their wishes for a better future. One student explained it in this way:

I wish for future generations to be able enjoy clean beautiful waterfalls; I wish that the children of the future will be able to play outdoors; I wish for peace on earth; I hope future generations will learn to enjoy the birds of the sky (student 1).

Other exhibition visitors were also actively participating by making their own pages for the project, thus adding to it during the actual exhibition. The approach used in the school was based on the notion of place-based education, where the students created meaning that can be related to personal experience in their own locality. The participants had access to a variety of materials, so that each one participant found a way for personal expression and experimentation. One of the teachers described her students' experience:

The work provided my students the chance to be the centre of the experience at the art exhibition. Together they created knowledge by reflecting on the artwork shown in the exhibit. Their awareness of nature, that is normally tacit, became more concrete (teacher B).

The participatory nature of some of the works in the exhibition and the workshops gave the museum the potential to create a two-way communication model establishing a sense of trust and respect in its audiences, taking on the characteristics of a "forum" (Cameron, 1971). Another teacher who visited the exhibit with her family said:

The participatory art making engaged the students so that they become a part of the artistic process in some way. The book-art allowed the spectator to help complete the piece, making the students a part of the team (teacher C).

A teacher who later created similar work with all the students in a big school in Reykjavík where she works as an art director stated:

I felt it was the issue of diverse students' observation that became the key factor in determining the success of this project. I think works like these are important for museum guests so they will feel personally included in the museum when they see people like themselves and their children represented (teacher D).

One of the participating teachers noted that students reported proudly in school how their work was an important part of the exhibit (teacher E). Another teacher, who visited the exhibition with a group of women from her neighbourhood, noted:

They all felt so proud of how the children's observations were 'spot on' discussing issues that are very important for our community.

I am not sure if children from Reykjavik would have the same connections. Our children are used to being more connected to nature (teacher F).

This comment showed the importance of the local dimension. The role of place and the students' interpretation of it played an important role in how they experienced the processes and participation in the art-book. Working with the home-place as teaching resource has a great potential in a place-based education and has the potential of creating place literacy (Birkeland and Aasen 2012, Birkeland 2014). Another teacher explained the importance of bringing her students' artworks out into the community:

The kids take their own works more seriously and show them more respect when they are exhibited in a context like this (teacher G).

Other Museum Activities and Workshops

During the time the exhibition was running, creative activities in workshops were offered. One of the four big rooms in the gallery was designed as a workshop and the book-art described above was exhibited there. When designing the exhibit, a wishing wheel was created to foster the concept of learning to care, allowing visitors to contribute their wishes for the future. That gave them the possibility of reflecting on their own wishes in their daily habits with the hope, which concurs with Hay (2005), that we need to change ourselves in order to make lasting changes to the world. The workshop space was always open for visitors, some of whom came many times. An older lady attended three of the workshops and said she felt part of the exhibition. Some of the schoolchildren came during their leisure time to revisit their work and create more works.

A course was given to the art teachers in the county before the exhibition opened, to assist them with planning on how they could include this exhibit

in their practice. The Art Teachers' Association of Iceland was invited to visit the exhibit and discuss the connection to the national curriculum where sustainability is among the six fundamental concerns. The teachers were satisfied and said it was easier for them to understand what is expected from them in the curriculum framework. Guided talks were also frequently offered with the aim of provoking a dialogue, which would shed light on issues related to the links between nature and culture, in reference also to social and economic aspects.

Some of the workshops were specially targeted at families with a focus on recognizing the value of, and integrating where possible, traditional knowledge and intergenerational considerations. Other target groups such as women, senior citizens, and art teachers had different themes and foci. The workshops were offered to build the public's awareness and practical knowledge of sustainability. That was done by encouraging discussion and sharing stories connected to the artworks in the exhibition.

Closed workshops were also offered for schools, providing diverse approaches to education for sustainability by creating artistic activities aimed at understanding how natural, cultural, economic and social systems work and are interdependent. With these activities, the Árnas museum focused on the integrating role of promoting and implementing sustainability in Icelandic society. With this exhibition the museum concentrated on building links with greater vitality to their community and engagement, becoming places where conversations take place and through which change is initiated.

When organizing the workshops Elliot Eisner's (2009) principles were kept in mind, making the setting a means or tool to reconceptualise personal identity as well as connect to culture and society—to engage with the values of others and to participate and contribute through embodied knowledge. Different forms of knowledge, old and new, became a focus of the workshops. Knowledge was understood as local knowledge, which refers to knowledge that

is unique to a given culture or society, originating from place-based life modes. Different artefacts were looked at and their common aspects were discussed and considered. The creators based their work on knowledge from their own backgrounds, experiences and prior understandings with the hope that it would lead to something good. The participants in many of the workshops were asked to reflect on the artworks in the exhibition and to create an artefact that could help them remember their hope for a better world with greater empathy, equity and tolerance. One of the visitors, an art teacher expressed:

This exhibition has stayed with me ever since I saw it. I think it is great when artwork reminds you of who you are and helps you to sharpen your values in life. When organizing my teaching for this term, this exhibit was on my mind. (Art teacher H).

One of the workshops reflected on the world's over-consumption of plastic. The participants discussed plastic consumption in society and reflected on the negative consequences of over-consumption. The participants, who had all been asked to bring with them used 'worthless' plastic bags, learned a technique to iron together many layers of old plastic bags and left over fabrics. From the new fabric they sewed multipurpose bags, most of which the participants aimed to use as grocery bags.

One of the participants noted:

It was amazing how everyone that participated and had brought in worthless plastic bags that normally would end up in the garbage started to think of them differently. They all wanted to take them back and use them. When I was organizing my teaching for the fall semester I drew from this idea where I have my students use this technique to create bags that we will sell for charity. This also strengthens the concepts that our actions matter (teacher I).

One of the workshops was held at the same time as the town's flower festival, housed in the only

horticultural school in Iceland. The focus of the workshop was to create mandalas. The mandala is a profound and universal symbol of continuity, integration and interconnectedness because in the beginning is the end and in the end is the beginning. All kinds of flowers, plants and natural elements were selected and laid out as material for creation. The participants were given an explanation of the nature of mandalas and how everything, within and around us, is composed of mandalas, the circle being the template of creation. With images put up in the workshop, the space and the principles that provide the foundation for all mathematics, science, geometry, biology and of natural and manmade architecture were explained (Cunningham 2002).

The different workshops, the participatory works and the Challenge exhibition as a whole give evidence of how academic efforts can support the creation of an exhibition based on a framework of education for sustainability. When interviewed, the museum visitors recognised the exhibition relevance and significance as a driver of sustainability in their lives, both professionally as well as personally. One of them stated:

Visiting this exhibition and a workshop for art teachers not only gave me many ideas and insights on how to address sustainability in my classroom, it also gave me a better understanding of this complex phenomenon personally. I'm more concerned about respecting nature in my daily consumption (teacher J)

All the workshops offered in connection to the exhibition engaged the participants both individually and collectively in the creative, expressive, inclusive and responsive processes of the arts as they developed confidence in themselves as creators. They realized there could be many answers to the same problem. This is the key distinction and dimension of making art and engaging in a design process, and according to (Eisner, 2002) one of the principal points in teaching art.

Conclusion and reflection

The aims of the project were achieved since the art educators that took part in some of the workshops have reported on how they have continued to develop their understanding of education for sustainability. Some art teachers have reflected on how useful they have found it to use the exhibition catalogue when discussing sustainability. The visitors of the exhibition and the participants in the workshops were able to interpret the artworks based on their prior lived experience. In the exhibition the viewers used the opportunity to consider and even debate the artistic reflections of the sustainability wicked problems. The artworks questioned assumptions that are generally accepted as true without looking for counter-arguments. The exhibition created an arena to help visitors raise questions, creating a space for discussing tensions within the world and exhibiting works that themselves are connected to their experiences.

The exhibition *Challenge* created conditions where visitors and participants in the workshops were active participants on the different platforms offered. The Árnas museum took on a role as an advocate for sustainability by inviting the general public, educators and families to be active participants and find their personal connection to sustainable development. All art teachers interviewed agreed that the exhibition delivered transformational learning both for them and their students that aroused increasing interest in sustainability.

Responses to issues of sustainability have implications for the field of art education and can influence trends and changes in the environment of education for sustainability and art education. There is a general need for wide ranging discussion and focus on education for sustainability within the society including schools. In the assessment of the exhibition, Jónsdóttir felt that the diverse voices of the artists involved and direct contact with them were missing.

These reflections led to two exhibitions inspired by *Challenge* being opened in New York in 2016. One entitled *Art for Action: Icelandic art in the service of sustainability* was held at the United Nations and the other, entitled *Borrowed Time*, in the Scandinavian house. Here, she included recordings of the artists' reflections and thoughts about their own works so museum guests could listen to them during their visit.

The concrete examples given in this chapter may inspire more curators, artists and teachers to take a step towards working with the arts as a means for promoting sustainability through a unifying approach working with the nature-culture interface. Museums, both because of their collections and because of their role as community gathering places, can be forces for intercultural communication and understanding of sustainability.

When educational settings make us question our own viewpoints, we discover a more dependable way to make our lives meaningful. We can look at and reflect on alternate points of view and create a new way of knowing that may be different from our old habits. This enables us to become tolerant towards others' points of view (Mezirow 2000). When one's life is rated as having quality, one will simultaneously have a sense of self-knowledge and empathy. It must be noted that a complex scenario seems to be possible with these aspects of quality of life in that each can contribute to, as well as result from, quality of life. Happiness and wellbeing are linked to quality of life (Meeberg 1993). Therefore it is important for pre-service art teachers to become aware of what they value in life and what factors contribute to a good life in order to develop those issues further with their own students.

In EFS it is important to reiterate that what is considered to be wellbeing and/or the good life varies between individuals, and across different societies and cultures. Every teacher has to develop their own goals towards EFS in their school settings because it would be misleading to take the concept of the good life developed in one cultural context and apply

it to other cultures (Keith 2004). As individuals we need to consider what influence we can have over our own lifestyles. Using an artistic approach, pre-service art teachers can identify and discover ethical challenges in contemporary life. They can engage with these challenges through art and art education (Eisner 2002; Hammersley 2006; Jónsdóttir 2011, 2013a). Some researchers have discussed how arts can in a critical way contribute to social changes (Haynes 1995; Hicks 1990; Noel 2003). Haynes says that improved cultural awareness will result in artists wanting to create influential critical work that makes people think about where the human race is headed (1995: 50).

Education and research in the field of sustainability calls for interdisciplinary approaches and collaboration while depth and expertise is applied to the

individual disciplines. It is important to aim to create settings that will increase local innovation and creativity. An interdisciplinary approach is considered one of the fundamental approaches in an information- or knowledge-based economy that is fuelled less by imported technology (UNESCO n.d.).

Art is an important part of the cross-curricular approach to EFS that includes a moral foundation. Art can bring about general changes in attitude and lead to a better future for all (Hetland et al. 2013). Education should combine these important issues, based on the convergence of the arts and other general subjects. EFS should include critical thinking, and should support students to define values and gain an understanding of the importance of actions and become active participants in society (Breiting et al. 2005). Education must include stimulating experiences that engage individuals and challenge them with learning tasks both individually and in a team. In EFS students should develop action competences that motivate them to seek, integrate and create knowledge (Mogensen and Schnack 2010).

The core skills in EFS involve a holistic understanding of the current and recent situation.

That involves going beyond raising awareness to addressing the underlying issues leading to unsustainable practices in students' daily lives and to challenging the assumptions that underpin day-to-day practices.

Education can help learners develop skills that influence change within their local society. In doing so, students could themselves create a systemic view around which to organize new practices. EFS relies on the strengths of

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Artistic Action for Sustainability: Developing Practice-led and Art-Based Expertise through a Joint Degree from Iceland and Finland

Jónsdóttir, Á., Macdonald, A & Jokela, T. (2017).

The intention and outcome behind one person's experience of taking a joint doctoral degree is discussed in this chapter. Ásthildur Jónsdóttir carried out her doctoral studies during a period in which interdisciplinary research is becoming essential to understanding emerging issues in our society. Her doctoral project centred on the potential of art in education for sustainability (EFS). She and her supervisors consider the benefits of studying in two universities, one in Iceland, School of Education, University of Iceland (UI) and one in Finland, the University of Lapland (UL). Jónsdóttir herself works as an assistant professor in art education at the Iceland Academy of the Arts (IAA).

The joint degree programme designed by Jónsdóttir and her supervisors was the result of working towards an article-based dissertation focussing on action research complemented by art-based research with three art exhibitions, two as a

curator and artist and one as the exhibiting artist. The methods used in the research complemented each other and the findings extend our understanding of the potential of art in education for sustainability (EFS).

The early part of the doctoral research at the UI was action research. Through courses, workshops and networks, Jónsdóttir was able to develop comprehensive knowledge of EFS. Through action research she developed her personal practical knowledge in connection to her practice as an assistant professor at the IAA. She analysed her own practice while developing new knowledge about education for sustainability that had operational significance for her workplace, a department at the IAA, and led to a model for pre-service art teacher training for sustainability. Competence in action research was verified by publishing peer reviewed articles and book chapters. A degree of PhD by publication was awarded by the University of Iceland. It was important for Jónsdóttir to reflect on her own practice through collaborating with other UI doctoral students and scholars studying EFS in connection to other subjects like natural sciences, human rights and philosophy.

The later part of the study builds on art-based research. Two years into the doctoral project Jónsdóttir felt that it was not consistent to look at the potential of art in EFS without using art in her research practice. Art-based investigations were undertaken to gain new knowledge by means of artistic practice, creative outcomes and through art installations and exhibitions. This research activity led to a Doctor of Arts from the UL. The long-standing role of art-based research and the network of researchers using art in their methodology at the UL has been very important for Jónsdóttir's studies. It is argued that a joint degree can benefit the researcher and the supervisor, giving both a broader perspective and experience as well as providing credentials recognized in more than one country. This chapter explores this argument.

Personal Practical Knowledge: Practice Theory

In the action research studies at the UI, Jónsdóttir developed her practice theory as pre-service art teachers developed personal practical knowledge towards EFS. Jónsdóttir's research was based on her development as a teacher educator over six years at the IAA and her wish to advance knowledge within her practice. She explored how a teacher educator can contribute to student empowerment and self-efficacy and to student practice-theory towards EFS (Bandura, 1989).

One of her main tasks was to create and assess settings for pre-service art teachers to become responsible mentors for sustainable development and cultural sustainability. Her data includes entries in written journals, written and artistic responses of students to particular experiences of working with students and interpreting theories and readings, course descriptions and evaluation criteria. Further data came from assignments in courses taught, interviews with stakeholders about their EFS experiences and an analysis of master's theses.

At IAA the aim was to design and evaluate settings that help pre-service art teachers develop a pedagogical foundation through visual art education, with a focus on contemporary art, critical theory in art, and research methodologies. Through a sequence of core courses developed at the IAA, Jónsdóttir incorporated a progressive, critical approach where students examined the making and teaching of art as a social act. She combined practice-led art education with contemporary art and its social context.

Pre-service teachers develop practice theories built on complex and ambitious understandings of the link between educational theory and the practice of teaching. The theories are based on the interaction between how students want to act as teachers, and their knowledge and understanding of ethical reasoning, attitudes and values. Jónsdóttir conferred

with students, compared different approaches, looked for contrast and created lists of themes and developed methods to map her data.

The findings of Jónsdóttir's study indicate the importance of focusing on student driven initiatives, where they take ownership of their own learning, giving them the potential to develop a stronger sense of self. Through their studies students at IAA have developed an intellectual community amongst themselves, which according to Cochran-Smith and Lytle (1993) is a fundamental value for developing teachers' professionalism. Furthermore, Jónsdóttir has created a research group for professionals interested in the potential of art in education for sustainability that functions as a support network for the IAA alumni, which former students believe is important after they become in-service teachers.

In the action research study Jónsdóttir looked at her actions, evaluating whether she achieved her goals which were to bring together action and reflection through her courses. It was very important that the researcher recognized and acknowledged the different perceptions of the pre-service teachers. They do not have to come to the same conclusion during the process of developing their own practice theory; rather they come to accept that there are different terms and knowledge and they have to be willing to work with this. In EFS students are expected to take part in critical discussions that include different perspectives. Because sustainability problems are dependent on many factors EFS requires complex interconnections. Therefore, public participation processes are appropriate approaches when working with EFS.

Through participation and collaboration, a range of virtues and values (Macdonald & Jónsdóttir, 2013) for deliberations have been refined. A variety of projects have been developed for getting and keeping people involved in participation in EFS. Jónsdóttir herself attempted to cultivate these values and virtues before working towards the same goal with the pre-service art teachers when dealing with EFS and citizenship.

The Art-based research

The art-based research part of the study manifests itself in art creation and curatorial work. It was intertwined by Jónsdóttir with the action research work at the IAA. Jónsdóttir's own art creation and curated art exhibitions emphasised participation with others building on a foundation of personal practical knowledge, theories and practice. The aim of the actions designed was to develop reflective knowledge, which helped the museum visitor to identify sustainability issues in their world, connect to them and take action to change their world based on new knowledge. This was possible because the arts can integrate knowing, doing and making (Irwin & de Cosson, 2004).

Jónsdóttir's artistic practice is shaped by an interest in socio-cultural topics, on the one hand on a global level working on developments and changes towards a more sustainable society, and on the other hand as personal intimate changes towards cultural sustainability. The artistic approach is based on understanding through art making, participation, qualitative, and anthropological investigation, including for example, taking interviews and building into the artwork artistic participation from others.

The three required exhibitions have been evaluated by three different external examiners. Two gave important and useful feedback for further works that forced Jónsdóttir onward both in the practice-based and the practice-led part of the study. In the artistic process, the artwork both creates and represents data. Some of the artworks feed into the action research data and at other times the data from the action research was the starting point of the art-based approach.

In the art exhibitions, the curatorial work focused on creating a holistic approach with a clear focus on sustainability. This included installations of Jónsdóttir's own works with a focus on collaborative approaches, examining the social practices that linked

them to the social realm from different perspectives on sustainability. This involved Jónsdóttir's practical work as an assistant professor, with supervisors, research groups and practicing artists.

Learning from the art exhibitions and articles: The researcher and others

The learning process behind the exhibitions and the art making is always to stay curious, using art making as a thinking process, sometimes making the thinking visible. The fundamental difference between the art-based and the action research was that the products of the artistic activities and art-based work were not necessarily knowledge, but inspiration, and the questions needed to search for new knowledge. In art-based research methods the methodological approaches meet and blend. Knowledge was generated through works where Jónsdóttir looked at her questions in as many different ways as possible both using art as a thinking process and making her thinking visible. Like in the work *MemoryBits* (figure 1) where she used the art to understand her own background and sense of place.

The work was rooted in the idea of memories and place. Collective memory in a place is no more than an element in the perpetuation of a particular social order that seeks to inscribe some memories attached as if by nature. In the article *Art and place-based education for the understanding of sustainability*

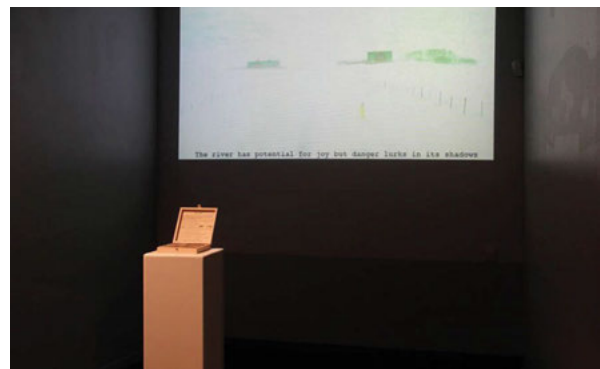


Figure 1. *MemoryBits*, 2013, mixed media Installation

(Jónsdóttir, 2013) looked at the same concept but from a different angle based on her action research findings.

The art-based process was a means of understanding experience or context, often resulting in the artistic process overlapping with qualitative research methods. Sometimes, the artistic creation provoked questions that led to further research in the qualitative realm such as the work *Value Archive* (figure 2) which stemmed from the researcher's interest in values in which she invited 46 persons to share in the creation of book-based artwork messages or knowledge they wanted to pass on to future generations. These women portrayed characteristics that the researcher believed represented different values that are important in sustainable society. Each participant contributed a 10 x 10 cm piece that was cantered on each page of the book, below which there is a short text explaining the characteristics are regard as a role model.

Some of the artwork continued to feed into the action research. Participatory artwork like this departs from relationships between humans and the social context of creating art and is meant to create a space in which art can fuel our interest in those elements of our society that might be improved and thereby lead to sustainability. In the article *Participatory virtues in art education for sustainability* (2014) Macdonald and Jónsdóttir looked at the many of the same principles addressed in the book-art.

The action research findings could be represented visually and continued to develop as art-based. Art-based research brought together Jónsdóttir's scholarly inquiry and the creative processes. The art allowed her to explore questions and express understandings through artistic means.

Visual images are particularly appropriate to drawing in the participants themselves as central to the interpretive process (Mitchell, 2008, p. 374).

The work *Lesson from the geese: Dreaming of a*



Figure 2. *Value Archive*, 2013-, on going participatory work

collaborative protection of our waters (figure 3) was inspired by a dialogue during Jónsdóttir teaching practice at IAA on how we can learn from the nature. Migrating geese have discovered that they can reach their destination more quickly and with less energy expended when they fly together in a V-shape formation with the geese taking turns in leading from the centre and all the other geese trailing behind in two lines. If we humans would work on a similar collaboration towards sustainable development it is likely that we might reach our goals more effectively.

The aim of the first exhibition *Challenge* (2015), that was part of Jónsdóttir's studies towards the Doctor of Art degree, was to help viewers to deepen their understanding of its topic, sustainability. The exhibition took place from January-May 2015.



Figure 3. *Lesson from the geese: Dreaming of a collaborative protection of our waters*, 2016. Installation. yarn and feathers.

It raised the question of what we can do to find a balance between the world's complex ecology and our well-being. This critical move towards the goal of sustainability requires fundamental changes in human attitudes and activity. The practice-led findings indicate the importance of personal connection to sustainable development. Each teacher candidate needs to develop self-efficacy and believe their actions can make a difference (Jónsdóttir, 2017).

Another work Jónsdóttir created for the exhibition is called *Skúli's Crosses, All Around* (figure 4). This anthropological piece shows the quiet influence an individual can have on the environment. Skúli has crafted almost five hundred light crosses since his retirement from farming. He has given the crosses to individuals all around Iceland and some abroad. With the crosses he wants to work towards peace, which is the necessary foundation for well-being in the world. The work reflects the importance of taking mutual responsibility for our environment.

Jónsdóttir's second exhibition *Boundaries and Bridges: Creating new roles for old traditions* (2015) was located in Harpa, a large conference and concert hall in the centre of Reykjavík during the Arctic Circle Conference, October 2015. The exhibition was designed to increase participation in Arctic dialogue and strengthen the international focus on the future of the Arctic. The practice-led findings indicate the importance of this dialogue (Jónsdóttir & Antonio, 2016). The conference has become the largest international gathering on the Arctic, attended by more than 1500 participants from over 40 countries.

The third exhibition *Disclosure* took place in a gallery at the Arctic Centre in Rovaniemi in Finland in March-April 2016. This was a solo exhibition with seven artworks created by Jónsdóttir. The emphasis was on different types of participation through diverse installations. Some works in the exhibition gave visitors possibilities to engage in different ways both before and during the event.

The collective work *Colours of Rovaniemi* (figure 5) was created with participation of people from



Figure 4. *Skúli's Crosses, All Around* 2014-2015, photographs, map and video.

Rovaniemi and demanded active participation from the viewer when looking at the work. The aim of the work was to reveal new depths of the experience of being in Rovaniemi, to engage the viewers or inhabitants in that place, rather than abstracting that place into generalisations that apply just as well to any other place. Jónsdóttir interviewed seventeen individuals and asked them to tell her about places within Rovaniemi they believe people could enjoy better. The places are very different and represent people's perceptions of alternate spaces, alternate routes, and journeys through the city and the much needed intermittent spaces of 'pause'. Most of the places are connected to water, either the river or lakes.

The same people in Rovaniemi were asked to choose one card of colours out of 314 colour samples – a colour that makes them feel good. The colours comprise most of the colours we see in the world around us. Most of the participants chose colours in a blue tone and connected them to Finnish light and nature. When peeping through the surface of the works you find photographs of their places. The action research findings have led to same conclusions that sense of place grows from identifying oneself in relation to a particular piece of land. Sense of place is also a combination of the characteristics that makes a place special and unique, involving the human experience in a landscape and the local environment (Jónsdóttir, 2013).



Figure 5. *Colours of Rovaniemi*, 2016

In this exhibition the value of recognising the important and changing role of culture in contemporary society was fostered. The aim of the art was not to find answers, but rather to make people think and question. This is in line with the findings of another study *Art and sustainability at the Reykjavík Botanical Garden* (Jónsdóttir, 2017).

Potentials for art education

This chapter has described aspects of a joint doctoral study from the UI and UL where practice-based and practice-led methods were used to look at the potential of art in education for sustainability. At the University of Lapland, Jónsdóttir had access to cooperative activities through her professional position in Iceland but by enrolling as a doctoral student she extended access to faculty expertise at both universities and resources as well as the self-discipline required for working in the field. Each supervisor's expertise and the specialization of the two universities have been important throughout the multi-layered research process shown in figure 6.

The dissertation resulting from the joint degrees includes a written component and an artistic component. Both the articles and the artworks are stand-alone items that can be accessed each in their own right. The two components of the study individually create new insights into the notion of the potential of art in education for sustainability.

Jónsdóttir neither uses the artistic approach as an alternative nor as a supplement to conventional educational research because she is not trying to replace it. One method is not superior to the other. Instead, all approaches operate equally.

Through the research studies in Iceland and Finland Jónsdóttir has been able to develop a systematic understanding of the conditions at IAA which shape, limit and determine action she can take. Based on her findings she has created settings for continuous, collaborative dialogue. Her reflections-in-action have led to the reflexivity of the practice at the IAA (Loughran, 2002).

In summary, the difference in doctoral degree requirements broadened Jónsdóttir's education as well as widening her cultural horizons. Additionally, being with two institutions, combined with her own workplace, helped broaden her network and opportunities. The methodological approach of the study was not rigid but rather involved constant revisions to accommodate the complexities of human interaction and meaning making. This is what Jónsdóttir knows today, but through ongoing reflection her knowledge has changed and will continue to change and grow tomorrow.

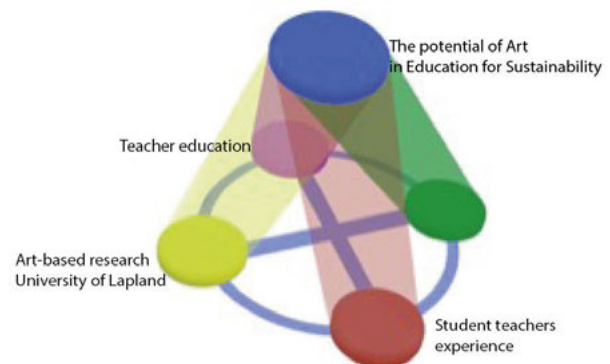


Figure 6. Interconnectedness of the research process

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Art teachers' education for environmental awareness: What is hidden in the nature that we have never seen or heard?

Abstract

It is argued here that teacher education needs to make a fundamental shift in the types of knowledge and experience that count as valuable for future teachers. The article reflects on some aspects of a weeklong project involving student teachers and 5th grade students that has taken place in the Reykjavik Botanical Garden for the past four years called What is hidden in nature that we have never seen or heard? The project has been a part of the Children's Cultural Festival. This is a collective project where more than seventy pupils from a neighbourhood school work under the direction of a group of student teachers from the Iceland Academy of the Arts (IAA). The project focuses on the transformative power of education for sustainability (EfS), and participatory pedagogy including critical place-based learning and tacit knowledge. The settings at the Botanical Garden were developed as a part of a pedagogical

course taught by the author of this article, aiming to develop the student teachers' self-efficacy and action competence.

In the Botanical Garden the student teachers plan learning settings for the pupils and carry the responsibility for that week in collaboration with the local school. The work is based on their earlier learning in the pedagogical foundation course. The way of working of the student teachers in the Botanic Garden can lead to a mutual fostering of these two concepts in ways that may be expected to promote professional development and tacit knowledge. Acquiring and being able to use the concepts augments the voice of the student teachers and I discuss why such pedagogies are valuable in teacher education.

Introduction

We live in critical times for teacher education. University staff that take part in teacher education are facing the need for gaining new understandings of the ecology of our planet and our world because of climate change and the dominance of unsustainable lifestyles (Gore, 2009). Thus universities need to be able to reorient their approaches to address the knowledge and values needed for sustainability. The term sustainability is increasingly used in institutions of higher education, though interpretations can differ widely from the deeply ethical to the highly technical. In schools teachers are required to address sustainability and understand the nature of wicked problems, as the Icelandic national curriculum for all school levels in Iceland has placed EfS as one of the fundamental pillars for all education and all subjects since 2011 (Ministry of Education, Science and Culture, 2011).

It is important to establish intermediate spaces between 'scientific knowledge' and everyday life. One way of making this link is through artistic approaches that have the potential to work with scientific facts in a creative way with a clear connection to lived experience.

The teacher education department at the Iceland Academy of the Arts (IAA) has, like many other teacher education institutions around the world, begun implementing EfS in preservice and in-service teacher education programs (McKeown, Hopkins & Chrystalbridge, 2002). The focus at IAA has been on creating firm connections between theory and practice.

In the spring 2013 a collaborative venture between IAA, a local elementary school, the Reykjavík children cultural festival, and the Botanical Garden was established. The collaboration is based on a weeklong art workshop in the Botanical Garden (WIG) connected to the Children's Cultural festival, concluding with an exhibition. For the student teachers from the IAA their involvement is an assignment. In this article several aspects of the project are presented and discussed. The overall goal of the assignment in the WIG is to provide a variety of settings for pre-service art teachers to use as they learn to organize learning experiences for children in the community. The aim of this project and the related activities is to engage learners within the context of their communities and for them to address relevant local issues with a focus on EfS. The student teachers are 12-18 in number and they create 6-8 projects or workshops for 70-80 fifth grade children, every year. It should be noted that although we speak of the children as the learners in this article, the student teachers are also learners themselves.

WIG is now an annual project with new learners and new student teachers each year and developed by student teachers that have prior to the project covered how to approach EfS in an integrated manner. They have in the preparation course discussed different learning environments such as focusing on learning through sensory experience via material (Hetland, Winner, Veenema & Sheridan, 2013; Ingold, 2011); choice-based teaching for artistic behaviour, (Douglas & Jaquith, 2006); critical place-based education (Gruenewald, 2003; Jónsdóttir, 2013; Macdonald & Pálsdóttir, 2013; Stevenson, 2008, Wakeman, 2015);

and learner-directed settings (Jaquith & Hathaway, 2011). This provides the opportunity for art educators to consider how the qualities of play, passion, participation and pertinence can be acknowledged and embraced in school settings.

My role at WIG was to facilitate settings that provided time and space for the student teachers to make connections to their prior knowledge, give them feedback and support along the journey. By using this methodology in teacher education, students are more likely to use the same methods once they become in-service teachers. The aim of WIG is for the student teachers to develop self-efficacy (Bandura, 1997) and action competence (Mogensen and Schnack 2010). Teachers with increasing self-efficacy and action competence in connection to EfS have the potential to influence the choices their pupils make and the courses of action they pursue (Kozak, S. & Elliot, S., 2014).

WIG has concrete objectives for the participating children. Working with the theme *What is hidden in the nature that we have never seen or heard?*, the aim of the workshop and the exhibition with which it ends is to raise awareness of the impact we all can have on our natural environment, today and in the future. WIG is based on the participants' active interaction with their surroundings in the Botanical Garden and discussions on how to build a fair and sustainable society. The workshop ends with an open exhibition showing the process of the artistic workshop and the art created by pupils using their senses and their aesthetic experiences.

Motivation: Artists and student teachers

Ever since I started to teach at IAA I have taught the course on pedagogy for elementary schools, including student teaching in school. All of the pre-service students in the IAA reported in interviews that they felt they were getting too little field experience and few possibilities to try out alternative approaches in education, fearing that once they became in-service

teachers they would do the same routine year after year and fall into pre-formed ideas of the role of the teachers.

My research data showed that this issue needed to be addressed and in 2013 I approached the principal of the local school and asked if the school was willing to collaborate with us. We got a grant from the city and since then this event has taken place four times and we are planning to continue. All the student teachers in visual art education participate in planning and running WIG as an assignment in the pedagogical course.

The student teachers at IAA bring a great deal of knowledge with them when they enter teacher education programs. They are all professionally trained artists, designers or architects with BA, BFA, MA or MFA degrees. Therefore, once in the program, a great deal that is taught is based on their prior knowledge. WIG gives them the potential to connect educational theories to their previous experience.

Throughout the four years of WIG I have kept a journal to analyse the development and the potential of the project, creating settings for the student teachers to discover how they can experiment with theories of developing knowledge through art creation with the pupils.

Art as a source of knowledge

Many scholars have researched art as a source of knowledge including John Beder (1993), Noël Carroll (2002), Cynthia Freeland (1997), Graham Gordon (1995), Eileen John (2001), David Novitz (1998), Louis Arnaud Reid (1985), James O. Young (2001). Their approaches are different but all come to a similar conclusion:

The scope and limits of the knowledge which can be derived from the arts are examined in 'What can be learned from art?'... Before artists or scientists can represent anything, they must observe

aspects of the world. If their representation has cognitive value, they are grounded in careful observation. Just as scientists conduct experiments and gather observations prior to constructing theories, so artists make a careful study of the objects they intend to represent (Young, 2001, p.65-66).

All the WIG assignments organised by the pre-service art teachers were designed to address how we impact on the world around us, and how it impacts on us. The projects carried out by the student teachers focus on contemporary issues, the problems of our time and on projects to build the future. Some of the assignments are a narrative about how we feel about our community and our planet, how we act in it, and how we care for it. This is done in order to develop deeper forms of connection through creativity and imagination, providing settings for the pupils to find other forms of knowledge and ways of being in the world. An interesting issue for sustainability education is that of tacit knowledge, the type of human knowledge that is bound up in the activity and the effort that produced it. This kind of knowledge is value adding and resides within organisations (Horvath, 1999). Tacit knowledge includes judgment, experience, insights, rules of thumb, and intuition, and its retrieval depends upon motivation, attitudes, values, and the social context. Professionals and other experts generally perform their practice primarily on the basis of tacit knowledge (Polanyi, 1967, Horvath, 1999). To what extent can tacit knowledge be knowledge about sustainability?

The Icelandic curriculum places strong emphasis on knowledge that is gained from lived experience, but it still appears as if the common educational discourse presumes that knowledge refers to facts and objective information. The Icelandic emphasis on knowledge production is in line with Amrit Tiwana's research on different forms of knowledge:

Knowledge is a fluid mix of framed experience, values, contextual information, expert insight and

grounded intuition that provides an environment and framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organizations, it often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices, and norms (2002, p. 269).

Within WIG, the pre-service art teachers experience first hand how EfS connects visual art education to the complexity of the world beyond the classroom. A significant amount of learning time has been spent outdoors, over the course of one week in the settings of the Botanical Garden. The project deals with local elements in connection to the community. The project also reflects on UNESCO's pedagogical foci that encourage cooperation and sharing of knowledge, skills, perspectives, and questions, to help pupils prepare for the world of work as well as community participation and decision-making (UNESCO, 2011). However, in spite of these similarities there are many ways in which the arts' and the sciences' contribution to knowledge is different.

Pedagogical approach

The pedagogical approach at WIG aims at developing transdisciplinary learning and teaching using art as medium, to express the participants' ideas and thoughts. The pedagogical focus criteria are reached with a balance between direct instruction and project-oriented teaching methods. WIG illustrates how a deeper understanding of subject matter can actually be enhanced through art creation. This is the foundation for the transformative power of artistic actions that form the pre-service art teachers' identity, professional values and habitus.

When organising the activities at WIG a framework called Connecting the Dots developed by Stan Kozak and Susan Elliot (2014) was introduced. It is built on key learning strategies for environmental education, citizenship and sustainability. In the framework Kozak and Elliot reflect on how students

can become engaged and active citizens involved in achieving environmental, social and economic sustainability. The pre-service teachers use the framework and design learning strategies for the pupils with a focus on involving them as engaged learners, learning within the context of their communities, and addressing relevant, local issues.

Discovering issues about sustainability through a creative approach that sparked their imagination gave the pupils the potential for self-discovery through participating in art making and through engaging in activities outdoors. The exhibition gave the visiting guests a chance to go through a process of self-discovery, transcending their own horizons, something which was empowering for the pupils as they discovered how their artistic actions could affect the visitors.

Works of art are means by which we enter, through imagination and the emotions they evoke, into other forms of relationship and participation than our own. ...To some degree we become artists ourselves as we undertake this integration, and, by bringing it to pass, our own experience is reoriented. Barriers are dissolved, limiting prejudices melt away...This insensible melting is far more efficacious than the change effected by reasoning, because it enters directly into attitude (Dewey, 1934, p. 334).

The transdisciplinary learning approach employed links concepts and skills through a real-world context, one of Paulo Freire's (1970) emphases in his critical pedagogy. The student teachers' move education beyond just blending disciplines to an approach aimed at learning objectives that require pupils to both find answers to questions, and to form questions they themselves might have about the content.

Transdisciplinary learning aims at stimulating students to solve real world problems and allows them to faithfully create and build their own ideas. Rather than supporting the idea that knowledge of the other

is needed in order to engage with the other, they place more emphasis on the multiple and unique ways that individuals come into the world. Gert Biesta (2012) has come to a similar conclusion:

So just as competencies in themselves are not enough to capture what teaching is about, the idea of education as an evidence-based profession makes even less sense (p.16).

The pedagogical approach at WIG stresses the importance of cultivating environmental values (Gratton et al., 2004), which is in line with the National Curriculum (2013) learning outcomes both in natural sciences and in visual art. When connecting the actions undertaken at the garden there is a strong link between education for the environment and EfS.

The actions are also in line with the framework for 21st Century Learning (P21, 2015) that highlights the vitality of transdisciplinary approaches that can promote depth of understanding as well as adaptability, which are important skills needed to succeed in our changing world. The framework was developed with input from teachers, education experts, and business leaders to define and illustrate the skills and knowledge students need to succeed in work, life and citizenship, as well as the support systems necessary for 21st century learning outcomes.

The pedagogical focus in WIG is of a participatory nature. It seeks to transform structures and practices that perpetuate undemocratic life in order to promote the development of a politically emancipatory and humanizing culture of participation, voice and social action. Scholars researching participatory pedagogy have identified three key elements for successful participatory pedagogy: 1) providing ample choice and flexibility in assignments and course activities; 2) navigating the balance between challenge and risk; and 3) creating contexts for critical reflection (Simmons, Barnard & Fennema, 2011).

Place-based learning

According to UNESCO students should understand how the earth's ecosystems set boundaries for mankind; they should understand their own ecological footprint and how the ecological footprint of societies and nations is linked to development; they should be able, in a critical way, to evaluate the value of information about environment and nature; they should be active and responsible citizens with regard to the environment and nature; they should be able to formulate a critical opinion on the environment, society, culture and economic system; they should have an understanding of the common responsibility of the human race on earth and her inhabitants (UNESCO, 2005).

In this respect, places can be very fruitful learning sites for students. In order to learn to understand themselves and their environment students need to get a sense of their own place (Greenwood, 2008). The WIG project has a place-based focus. Place-based learning is informed by cross-curricular links and contextualized by the diverse characteristics of the places that are studied. Place-based approaches and the tasks proposed are primarily intended to motivate the pupils through humanistic and scientific engagement with their surroundings (Gruenewald & Smith, 2008).

Sustainability: Learning steps

We do not really know how learners, be they children or adults, begin to understand the world in terms of sustainability concepts. Current discourse is, however, extremely fertile, offering a range of ideas and terms, increasingly involving everyday language. In WIG many new concepts were developed. What follows illustrates a few influential areas of discussion which have been used by scholars and increasingly by learners and so are entering common educational discourse.

Frequently, when issues of sustainability are discussed, questions of social behaviours and cultures are discussed in connection with environmental problems. Discussion also involves whether sustainability could be considered as an intersection of the economic, social and environmental sectors or whether social and economic systems are inherently limited by the environment (Huckle, 2005). The course I developed at the IAA was also framed by issues emerging after the turn of the century and then used frequently during the Decade of Education for Sustainable Development (DESD) from 2005 to 2014 and coordinated by UNESCO (2005). A massive website has enabled the development of a basic vocabulary across many countries.

In the early seventies two economists put forward the notion of wicked problems, defined as those characterized by high levels of complexity, ambiguity, controversy and uncertainty both with respect to what is going on and with respect to what needs to be done (Rittel & Webber, 1973). Wicked problems is a term frequently used but still perhaps not well understood and thus requires extensive discussion (Singer & Macdonald, 2016). To use the term appropriately we need to understand many factors: that wicked problems are hard to define because of the actual nature of the problem; that there is no one solution to a given problem, because each one is unique (Macdonald & Jónsdóttir, 2014); that the solution to the problem differs depending on time and space; that it is neither right nor wrong; and sometimes the problem itself does not appear until the solution is found (Rittel & Webber, 1973; Thompson & Whyte, 2011).

In recent years education for sustainability scholars have applied the wicked concept to a range of issues. A parallel discussion is being addressed more vigorously now as some scholars have reached the conclusion that it is no longer possible to be satisfied with a transformation of knowledge, a concept that we have been using in justifying new approaches. What is now needed is 'transgression' where we move beyond our current set of values and practices, and

'look back' and try to cross boundaries and move into areas that would question current structures and not set about transforming them (Lotz-Sisitka, Wals, Kronlid & McGarry, 2015). A further discourse would say that knowledge is plural, contested and inherently contingent (Colucci-Gray et al., 2013). What is important to emphasize is that we are moving within a new and complex field and the language of sustainability is constructed as we research it and learn more about it. This was and is a challenge for teachers and learners.

A case study from Reykjavík

The data for this study are drawn from my personal observation. I designed the project and have organised and developed it from its outset. This case study uses action research and records my observation through journal writings.

The case examines some of the most important, distinct and successful aspects of the four years of WIG. The specific focus of this paper is on the participatory pedagogy which the pre-service art teachers have used in their process of becoming reflective professionals of EfS. I also reflect on the claims of knowledge making through art, the successes and the difficulties experienced, and the teacher educator's effort to develop rational dialogue when reflecting on the practice of promoting critical reflection in connecting theory and praxis.

Using action research to approach investigation has become increasingly important to me as an assistant professor and a programme director where I have responsibility for development. My findings have led to new understanding of operational significance for the practice at the teacher education department at IAA. This has advanced knowledge about EfS within teacher education. The investigation has the potential to help improve teaching and learning within the programme and to contribute to a redefinition of the teacher educator's role within the development of the programme, specifically in terms of values, processes

and methods (Brockbank & McGill, 1998).

The research process followed a similar format for each year, beginning with taking notes throughout the whole process and interviewing some pre-service art teachers who have taken part in the project. It also includes analyses of student teachers' written responses and assessment meetings. During the WIG process, permission was sought, and in each case granted, to tape-record the semi-structured interviews conducted. According to Yin (1984), the strength of a case study is that it is based on multiple sources of evidence which allow the investigation to retain the holistic and meaningful characteristics of real-life events.

Results and discussion

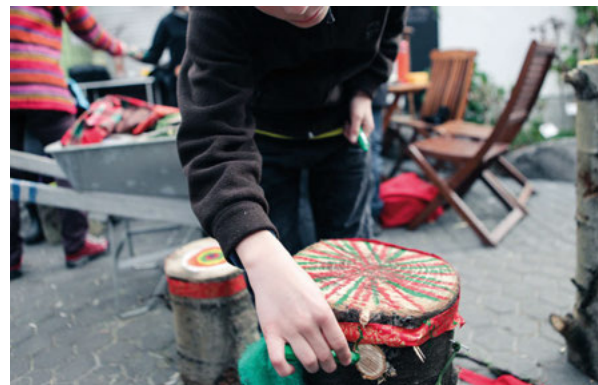
Over a number of years, the pre-service art teachers have created very different approaches or themes with their groups of pupils. When the learning outcomes of WIG have been analysed, there are indicators that show a sense of belonging, increased community vitality, cultural knowledge, and awareness of new artisan skills. The projects raised the participating 5th grader's awareness of their environment and its care through a focus on eco-friendly behaviours, connection to raw natural materials, ecological knowledge and waste management.

Most of the WIG groups have created projects that require intellectual quality including higher order thinking skills, deep knowledge, deep understanding, and substantive conversation. All of them have developed experience-based learning for the pupils with a focus on being in a natural environment, learning by doing, and working on projects in which they have choices and a chance to make decisions.

By creating an open exhibition as part of the week of cultural celebration for children, the project as a whole directed the learning to an audience beyond the classroom. As an organiser, I also created a photo essay showing the children at work, which was exhibited in the Botanical Gardens café.

The key learning strategies for the WIG can be explained in a mind-map based on the connecting the dots framework. The mind-map was created as part of the project assessment. The assessment meetings at IAA with the student teachers lasted for approximately three hours. After each meeting the researcher wrote detailed descriptions from her notes for later analysis. The purpose of this was to draw out the major issues connected to education, themes, issues of implementation, changing attitudes etc. The findings ultimately enabled analysis connected to current available literature. The following section uses data from the four projects to examine the different ways of working with tacit knowledge that encouraged the pupils to become aware of issues related to sustainability within UNESCO's sustainability learning framework (2005).

Content of the learning from WIG in relation to the UNESCO's Learning pillars When the activities are considered with regard to the learning pillars identified by UNESCO (2005), one can see that the projects touch on various different examples of each of the following: Learning to know; Learning to be; Learning to live together; Learning to do; Learning to transform oneself and society.



Learning to know

The student teachers have appreciated being able to access the resources and expertise of the Botanical

Garden staff. The members of staff have shown them how the Botanical Garden comes alive in the spring. Some of the groups have created sound magnifiers so they can listen to the root system of the trees waking up from the frosty winter.

The student teachers have reflected on the importance of trying, by using their own skin, to reflect on the local environment. Some of the groups have developed projects with a focus on sensory experience. The pupils then focus on learning from the materials available, for example one year when a moss and fungus specialist was working in the Garden moss became the theme of one of the groups, such as reflecting on why moss is sometimes unwanted and sometimes desirable. Another group has worked with soil and different kinds of sand to create the perfect mud to build things from. Some of the student teachers have used storytelling in their approach as the materials and accessories that are presented in the garden have become part of the pupils' experience. Stories are an engaging way to open and encourage dialogue, both with the materials used and also with each other (Gersie, 1992).



Learning to do

Most of the WIG projects have built on the principles and values that underline sustainable development. The overall objective of WIG is to contribute to the participants' personal development where mind and body, intelligence, sensitivity, aesthetic appreciation

and spirituality are all challenged.

Some of the groups of 5th graders reflected on active citizenship, like the group that created their own Small society. The group had started to discuss different societies and some of them had seen a new report on artists that had lived in a Mongolian yurt in Iceland. Those artists had carried out creative projects and promoted of a different way of working and living. A student teacher stated:

We had a great conversation about the use of materials and the traditions that are inherent in this kind of adaptable architecture. The Mongolian Yurts are attracting interest from people in many parts of the world as an ecologically friendly and attractive living space that can be used for a variety of purposes (Student teacher 2015).

The group of pupils had, by end of the week, created a set of community rules they found important, and an environment within the yurt where everyone in the group had something to say. They had brought old sheets and curtains to create the yurt itself, decorated it, and constructed decorations or ornaments that were inspired by indigenous cultures in order to drive away bad spirits. Many of the projects related to community have also helped the pupils to learn to live together.

Learning to live together

Here the objective is to know oneself in the context of complicated social structures and to develop attitudes towards society and the environment. Other groups have reflected on differences and observations of how the lifestyle of people has changed. For example, in the neighbourhood of the Botanical Garden there are hot springs that people in Reykjavík used wash their clothes in. Some of the WIG groups have paid tribute to these washerwomen that had walked across the city, the group created sculptures that reflected the hard work the women had carried out. The children

also did experiments with a range of fabrics that they got at the Red Cross, and then dyed them in different ways. One pupil had brought with him a cool-aid drink. After discussing colour pigments in the drink they decided to do experiments with colouring fabrics using both cool-aid and natural colours.

By creating a project like WIG, the student teachers can practice designing and teaching a good quality arts education and discover it as an essential component of holistic education, both formal and informal. Some of the projects have aimed at building capacity for community-based decision-making, resulting in community rules that include social tolerance, environmental stewardship, adaptable workforce and quality of life.

In WIG informal learning is a local ongoing phenomenon of learning via participation and is in contrast with the traditional view of teacher-centred learning that can be described as knowledge acquisition. The pre-service art teachers create an environment in which learning is able to flow and develop in whichever way and direction the pupils desire. Within that ideology the belief is that the pupils will end up learning more, not only about what they we need to know, but also about things that interest them. This kind of learning is transdisciplinary, aiming for the pupils to solve real world problems and allow them to faithfully create and build their own ideas.

Learning to be

Some of the groups focused on contributing to a concrete reality characterizing all our daily decisions and actions. Approaches to the theme Fair community have been very frequently aimed at building a sustainable and safe world for everyone. One of the groups chose to create a world they called Togetherness where the main focus was on playing together and experiencing new and unexpected things. They asked to be located outside the official Botanical Garden to have more freedom. One



child wanted to experience how it would be to live underground. He and some of his friends spent a long time digging a hole in a hill they found. This provided a great learning curve for them as they learned to use different tools for digging and removing stones and different kind of soil.

Both artists said that the pupils that had spent the whole week outdoors (not going in to the greenhouse at all) and had been very happy.

Actually being in the environment experiencing its beauty, seeing the effects of their artistic activities had an impact on the pupils. Some of them were not sure if this was an artwork or not...but that really does not matter (April 2016).

This pair places a strong focus on validating the process. They appeared excited by the prospect of choosing a project significant to themselves and allowing the pupils to have the liberty to design a course of action (Researcher notes 2016).

One of the groups called themselves the Hawks drawing the name from the bird that has great skill in noticing things around them. They worked like spies reflecting on the relationships they noticed with others participating in the project.

They created their own tools to report on their findings, and created metaphors mapping out different relationships to the garden that they had absorbed in the groups in working within WIG.

They noticed how some of the children liked to

work small-scale while others liked to create bigger things. Some created something abstract while others were working with more concrete things. Some chose to work as a team while others worked in smaller groups within each large group.



Learning to transform oneself and society

Through this research I have learnt how to systematically use actions which influence the sustainability of society. All the five pillars of learning relate to all phases and areas of learning in the WIG project. The pillars support one another and are embedded as basic principles in the WIG project, resulting in collective learning for the student teachers as they learn to transform themselves and society. This includes that they have been able to integrate the values inherent in sustainable development into all aspects of their learning through the project. The cross-curricular themes applied in WIG that have been designed by the student teachers and the broad competences for integration in and across subject areas and learning domains have empowered both the pupils and the student teachers. This results in student teachers taking on responsibility for creating learning settings that aim for the pupils to envision a sustainable future.

The student teachers have reflected on the importance of the intermediate space that WIG

provides for them and how it elicits their potential to develop their self-efficacy and action competence. Many of the participants have stated that their experience in WIG, together with their own tacit knowledge and experience, can be used to arrive at informed decisions for the good of themselves and others. They have also stated that the experience made it possible for them to focus on increased participatory virtues (Macdonald & Jónsdóttir, 2014) where individuals have the potential to be more creative and include discussions on wellbeing in other spheres of life. That embraces encouraging freedom of expression and enriching the learner's creativity and imagination.

The student teachers' enthusiasm for their projects seems to arise from the pleasant discovery that they are able to connect educational theories to their own practice. One student teacher, for example, credited this project with making her more willing to experiment with different strategies. Indeed many of them felt empowered as professionals capable of connecting theory with practice, and able to use their judgement to adapt curriculum and educational strategies to the pupils' needs and to the context (Researcher journal, 2016).

Learning by doing and challenges

Many of the student art teachers have described their experience in the WIG as learning by doing. Many referred to their experience as 'hands on' and considered this week as having had one of the greatest impacts on their learning in the pedagogical course.

A number of pre-service teachers have used the term 'real life' experience to describe aspects of WIG, and how that impacted on the pupils learning. This included being outside in a natural place, responding to natural elements and often reflecting on real life situations.

They have also connected their experience to the importance of integrated learning. Many of the pre-service teachers and the in-service teachers from the

local school have described the learning that takes place at the Botanical Garden as connecting aspects of the school curricula with what happens in classroom activities, and how that must have an impact on pupils learning.

After starting this project, that included exploring, investigating, creating and learning new skills through WIG, there was more variety in student teachers' theses. Some said that this experience would encourage them to recreate this project once they became in-service teachers. Some were still afraid it would be difficult to do this alone with a whole class. I think we all wanted to get the children to be confident and have lots of self-esteem, and be able to be independent. We just used different ways to do it. I think the projects with the best outcome had experienced teachers with great self-esteem, and were willing to allow the pupils to do lot of experiments. The most independent pupils were active learners, they did everything themselves and did not rely on us too much. One of the teachers from the participating school stated:

I have been a classroom teacher for many years and been part of this teaching team [in the WIG]. It is an ideal setting in terms of keeping quality high, being part of the team, the kids all working in many small groups, they learn to work together in a new way, outside of the classroom, with new people that don't know their background. ... It is a fresh start (April 2014).

When pairing the student teachers it is important to keep in mind that they do not always have the same values or ideas. One stated:

I know I will have to work with all kind of people in the future but It's much easier to work with people who have similar values to you (April 2016).

It can be very a important experience to learn to work with people that do not have the same ideas as you. After meeting with this pair and discussing

the importance of giving everyone a position where they would feel valued, it was useful to explain that there are many stages of working together and the most important thing is to give them confidence to take responsibility on working out problems. This encourages them to act independently, but also ensures they would always be supported when necessary. This was an important learning event for both of them. Another complained about her partner always wanting to take control:

It's hard to develop self-esteem when the people you are working with don't really have faith in you. It seems to me everything I suggest is wrong, not that I want her to be obedient, that's the last thing I want ... I just want a dialogue (April 2014).

Lack of time was often a problem in the collaboration:

It would have been important if we could have sat down together after each day and asked ourselves what is missing, what do we need to be developed, etc. I know some of the groups did that and that was helpful for them. We were always in a rush to go to another class or we had other duties we had to work on (Student teacher, 2015).

Some of the student teachers have other duties at the IAA so their energy has been diverted away from the Botanical duties.

I have had conversations with some of the student teachers and I have talked to my colleges and asked them to give them a break. Thankfully none of the student teachers are at risk in their practice in WIG. Next year we need to get off the mark sooner so this does not happen (Researcher journal 2015). [It has been agreed that next year no other classes will be required of the first year student teachers during this week.]

The first two years of the project, an assessment

meeting was not included in the planning. But after analysing the data from the first two years, assessment meetings were then included. The in-service teachers and the student teachers have all considered the importance of these assessment visits. That visit gives space for supporting and deconstructing what the pupils had seen and experienced. Their experiences are very diverse:

In WIG we do have so much more space to experiment.

I think this was more like playing then schooling.

I sometimes get very tired in the classroom because I have to sit the whole day and use the indoor voice. It was nice that I did not have to think about that in the Garden. I liked how I could decide what material I used and how I used it.

I didn't like it when it was cold, I always forgot to bring warm cloths.

Our group was the best group because we spent all the time outside. We did not go into the greenhouse.

The different engagement through diverse learning sequences has often brought up how important it is to work with values and virtues in connection to EfS.

One of the teachers from the participating school stated:

I have been a classroom teacher for many years and been part of this teaching team [in WIG]. It is an ideal setting in terms of keeping quality high, being part of the team, the kids all working in many small groups, they learn to work together in a new way, outside of the classroom, with new

people that don't know their background. ... It is a fresh start (April 2014).

When working in the park the student teachers worked in pairs. A few times I did not make a good match when pairing the student teachers. Some of them complained and I had to explain to them that once they become schoolteachers they will have to work with all kinds of people. One stated:

I know I will have to work with all kinds of people in the future but it's much easier to work with people who have similar values to you (April 2016).

Self-efficacy and action competence



The student teachers have developed strong self-efficacy (Bandura, 1997) and achieved action competence (Mogensen and Schnack 2010) in relation to EfS through WIG. Therefore they should be more likely to select tasks and activities in their classrooms that relate to sustainability in the future. That is because feeling competent means they will not avoid those issues. They need to believe in artistic sustainability actions in order to engage in them. It is a indicator of student action competence when they have developed the ability, motivation and desire to play an active role in finding solutions to problems and issues they feel are worth fighting for (Mogensen and Schnack 2010). Even though most research on human agency has been centred mainly around

the development on individual self-efficacy, people do not live their lives autonomously. In many cases development is only achievable through collaborative efforts. In social cognitive theory the conception of human agency is extended to collective agency. Empowered pre-service art teachers with strong self-efficacy are willing to share the belief of their collective power to produce desired results, and this is a key ingredient of collective agency (Bandura, 1997).

The idea for WIG had been developing for several years. The IAA was able to connect with the community, children learnt new things, and the student teachers found it an interesting challenge. Before the project started the researcher was already aware of many issues and had ideas for several activities, based on the theoretical emphases connecting theory and praxis in relation to place-based education.

Prior to WIG, the IAA teacher education department had developed a strong relationship with the local neighbourhood. This included creating settings for the pre-service art teachers to teach in short art courses in their first term for the afterschool programme (started fall 2010). This has been a wonderful opportunity for the IAA pre-service art teachers to gain sometimes their first experience teaching in an environment they identify themselves with and feel good in. It is also very beneficial for the local children, all of whom know the big IAA building but have never entered an art academy before. They are generally curious about what happens there, and many parents have expressed how positive they are about this initiative:

It is really great for the kids to be able to walk here after school and get an ambitious course.

It's great for the kids here in the neighbourhood to be able to walk here. It takes great stress off not having to attend art courses at the other side of town.

My daughter has been taking your course for

the past four years. It is frustrating that she is too old. I have really liked how she has been able to work with different artists that are in your teachers' programme.

I have completely different view on the Art Academy now that my son has been with you for the last two years. Now I like that old meat-processing factory [the building was originally designed for this purpose] and I no longer think it is ugly. He gets a lot out of what he does with you. It is so seldom that kids have the opportunity to experiment with different media.

This positive feedback we have received through our collaboration with the local community has given the project members of WIG a very important positive attitude and will for participation.

Developing professionalism

Sergiovanni (1992) believes that in order to improve schools must adopt the metaphor of the school as community rather than as organization. The central framework for the characteristics of a professional learning community are the five dimensions identified by Hord (2004) (a) supportive and shared leadership, (b) shared values and vision, (c) collective learning, (d) supportive conditions, and (e) shared practice. Currently, education relies on direct leadership and little time is left for leaders to focus on issues of substance that can make real changes in the ways we are teaching and learning (Sergiovanni, 1992). In WIG the emphasis was on a participatory pedagogical approach that allowed the participants to focus on different phenomenon over a long time. Working with participatory virtues has been found useful in comprehending sustainability and its wickedness and those aspects of human values which complicate and sometimes confound the process of realizing sustainable values (Macdonald &

Jónsdóttir, 2014).

When working on school improvement, it is therefore crucial to understand that schools are communities and that everyone must become involved in the leadership of such schools. All the workshop projects have highlighted the importance of working together as a community. Being involved means internalizing shared goals, being committed to professionalism and professional virtue and behaving in a collegial manner (Sergiovanni, 1992). When spending time in the beautiful Botanical Garden, the participating 5th graders were walking, listening, meditating, making, marking, exploring, accepting, questioning, and writing as a group. They also got time for private creation in the group sessions that later became part of the whole enterprise.

Transdisciplinary teaching is democratic in nature. The most important fundamentals for transdisciplinary teaching are a high degree of openness and curiosity from all stakeholders with an open mind, willing to adapt, quickly and unconventionally, to new and unexpected circumstances. The aim is to generate learning environments in the WIG where power relationships are mutually constructed and negotiated between those involved in the learning process, through which relationships evolve during the relational pedagogical approach to co-creating knowledge. Therefore, the concept of participation becomes essential to the pedagogical process and its intention to transform the way we pursue social and ecological justice in line with the ActSHEN project principles and goals¹. When going through my journal writings on the workshop, this is something the student

teachers discussed as the biggest learning curve at the Botanical Garden.

The journey towards professionalism

The project in the Botanical Garden was designed around supportive and shared leadership. It was a venue for the student teachers to try to share responsibilities with the pupils.

It was a challenge in the first days to give the control partly up to the kids because the issues that we believed they would value was not always the same issues they valued as important (Student teachers, April 2014).

Working as a large group when designing the overall objectives and learning outcomes provided shared values and visions for the project. In that process the student teachers built on theories studied in the IAA pedagogical programme. The project at the Botanical Garden also required connection to the curriculum at the local school. That required a transdisciplinary approach some of the student teachers found hard. In the research notes is stated:

I am mindful of the challenges of asking the student teachers to implement a complex transdisciplinary project on as tight a time schedule as the week in the WIG. As I am unsure of what we can reasonably expect from the student teachers, I cannot anticipate all their concerns or be sure I am guiding them in the right direction. I feel that I am not entirely in control of this project and am concerned that the uncertainty may increase the anxiety of the student teachers (Researcher journal, 2013).

Those worries were unnecessary, since the student teachers showed more ability as they were given more confidence.

I have learned to trust the process. The more freedom I give to the student teachers

1. ActSHEN is Action for Sustainability in Higher Education in the Nordic region. In 2013 a group of scholars several of whom knew each other from earlier Nordic cooperation developed a projects, frameworks and lessons which give students more influence i.e. more voice and more choice <http://blogs.helsinki.fi/action-for-sustainability/>.

the better they will deliver. It is still important that they make clear connections between theory and practice (Researcher journal, 2014).

When working in pairs, or in groups of three, this gave them both needed support and also required shared leadership where they had to respect each other's perspectives and ideas.

Student teacher X has shown great flexibility in adjusting her ideas for the project to her partners approach. She is checking pupils' interest and trying to make sure they fit to the ideas of EfS. It is interesting to how they are bringing out the best in each other (Researcher journal, 2016).

When sharing their experience from the fieldwork, the student teachers developed collective learning. One of the student teachers stated, when discussing what she learned from the project:

My sense that I lack control is compounded by the fact that this is a collaborative project.

Another student teacher stated:

I have enormous respect for each of you and the unique qualities you brought to WIG. In my heart the uniqueness of each of you will always be respected. You were all committed to fostering a safe environment for the pupils where they could create the meaning of their experiences.

Working in collaboration with WIG, the flora and fauna specialist, and working with the in-service teachers from the local school, generated a supportive condition. Mounting an exhibition at the garden and then later at the local school allowed for shared practice where the local community gave valuable feedback and at the same time the connection to the community also provided validation and stronger

connection. The exhibition later created added value, as the value of the project was evident when it was awarded the 'encouragement award' by the Education Office in Reykjavik in 2015. The acknowledgement gave real life connections as the project was no longer just a school assignment, but it had become an important initiative in the pupils' lives.

For the student teachers it has been empowering to get direct feedback from the pupils and analyse it later in an assessment meeting together as a group. It has allowed them to share what went well and what needed improvement, forming a collective efficacy that leads to action competence. This project gives them the chance to reflect on their own actions as professionals.

Can the participating pupils learn from art?

In many schools the focus is on children learning for testing but not for real comprehension (Nelson, 2013; Solorzano, 2008). This also involves the danger of dismissing tacit knowing. Progressive teaching methodologies based on the theories such as those advocated by Dewey (1934) and Paulo Freire (1994) are difficult to endorse because of the time and energy needed to prepare students for standardized tests. Many such important educational theorists have in some way or another referred to tacit knowledge in their concepts. It has been interesting to see how the educators in the local schools have been willing to participate in activities that are aimed to help the pupils expand knowledge they already know through the artistic activities.

This understanding of the importance of fostering tacit knowing through art is important because it has a very positive impact on the in-service teachers that take part in the project with their pupils. The concept of tacit knowing is important to our understanding of how students learn and how we can rethink teaching strategies.

When working in the garden through this

collective project, the children have had to make good judgments about qualitative relationships, i.e. by making rules for invented communities. The pupils have also practiced respecting different perspectives because, unlike much of the curriculum in which correct answers and rules prevail, in the arts, it is judgment rather than rules that prevails (Eisner, 2002). In these projects the student teachers have discovered, when fostering a choice-based approach, that they can show the pupils how problems can have more than one solution, and that questions can have more than one answer. That is because the arts celebrate multiple perspectives. One of their biggest lessons in WIG is that there are many ways to see and interpret the world and small differences can make large effects (Eisner, 2002).

For some of the student teachers it was difficult to offer choice to the pupils:

When I first stressed that they should allow each child to choose a project with meaning to himself or herself, I sensed some level of silent incredulity: an “Oh, yeah. Sure.” kind of attitude. At some point, one of the student teachers stated that she felt she was not teaching the kids anything. This was very important because it allowed me to discuss how we as teachers can be stuck in the setting that we were brought up in (Researcher’s notes 2014).

Students can respond to works of art, and in the context of tacit knowledge one can learn from his or her reactions. Through the arts it becomes vivid that neither words in their literal form nor numbers exhaust what we can know. The limits of the language do not define the limits of potential cognition (Eisner, 2002). In the artistic activities the pupils have learnt that, in complex forms of problem solving, purposes are seldom fixed, but change with circumstance and opportunity. Learning in the arts requires the ability and a willingness to surrender to the unanticipated possibilities of the work as it unfolds (Eisner, 2002).

The projects that have focused on creating settings for the pupils to think through and within the natural raw material in the garden enabled them to have experiences they could not have from any other source. Through such experiences, they have the potential to discover the range and variety of what we are capable of feeling. All the projects allow the pupils to experience and to express what cannot be said. By inviting them to disclose what a work of art and art creation helps them feel, they must reach into their creative and imaginary capacities (Eisner, 2002). At the same time, since the main knowledge gained at WIG is a tacit knowledge, it can be often be hard to identify when the pupils have developed value judgment, or gained experience that gives them insights or intuition.

Conclusion

The experience at the WIG provides increased focus on connecting theory and practice for the student teachers at the IAA. The research findings indicate that they are able to identify the higher order thinking skills in activities such as more frequently asking critical questions, comparing different perspectives, creating meaning, drawing conclusions, and developing opinions and values.

The findings suggest the practices in WIG both enact conceptualization focusing on pupil learning and create empowering settings in teacher education, allowing student teachers to reach action competence. As they connect theories and practice they develop self-efficacy, and at the same time they create a powerful learning environment for the pupils, building their self-efficacy through vicarious experience.

The student teacher’s work makes me optimistic about teaching and education. They have done so well with the projects they undertook in WIG! They have managed to reach out to students in unexpected ways in the first day of the project. All the children returned happy and excited about continuing

tomorrow (Researcher's journal, April 2014).

This case study gives a good example of how teacher educators can create settings for student teachers to develop self-efficacy and action competence. WIG is an example of the potential of art in EfS where the learning settings discussed earlier are characterised by play, passion, participation and pertinence.

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Challenge

We all want to live the good life, but we don't all have the same views on what constitutes a good life. Family, friends, good health, cultural diversity, security, independence, financial security, a wholesome and beautiful environment, empathy and love are elements in our lives that together constitute our well-being. In order to create the appropriate conditions for a good life many different issues and how they relate to one another must be carefully considered.

We understand that spending beyond our means will end in having to pay off our debts. In the same way, by maintaining the limited perspective of short term economic growth we endanger the quality of life for future generations.

The key to sustainability is to find a balance in our 'good life' that does not endanger the quality of life of present and future generations. All the artworks in this exhibition relate to the discourse on sustainability and the ethical issues involved in a society's development. Sustainability includes overlapping environmental, economic, cultural and social factors. Changes within each factor can always affect the other and development can only be sustainable if it takes into account all these factors. It is important to keep in mind the benefits and need for sharing of common resources that need to be protected and utilized in a sensible way. In such a society one's living standards are not achieved at the cost of others, nor does it reduce opportunities to improve living standards.

This is why we should ensure that we do not exploit natural resources beyond their capacity to renew themselves. Amongst our greatest challenges is the need to adapt economic development to environmental and social realities. Natural resources are invaluable, providing services that humans cannot live without, and it is therefore paramount that people understand the importance of their preservation. When we discuss environmental issues it is always useful to do so from the perspective of society as a whole.

There is a clear connection between culture and sustainability, as culture can influence behaviour, consumption patterns and production modes. Knowledge is a necessary premise for a more sustainable society and is the building block on which we construct our values and make our decisions. Most people value knowledge and truth thus enabling them to deal with complicated circumstances in their natural or built environment. With increased knowledge of the world we can learn about connections in nature. Knowledge enables the individual to discover his own part in the natural world and in society, making it possible for him or her to make connections between different events and see them in context, as part of a whole.

The artworks in this exhibition Challenge offer a range of interesting situations that are worth looking at in the context of sustainability and raise questions regarding man's connection to nature. Context and knowledge are necessary in order for us to participate in countering the dangerous consequences of man's unsustainable behaviour and its negative effects for future generations. To achieve change we must participate in society and act collaboratively.

Wicked Problems

Unsustainability in the present and in the past is often the cause of society's wicked problems, frequently connected to cultural or social factors which makes them difficult to resolve. The solution is hard to find and not right or wrong but may appear as either a

positive or negative development. This is because we cannot foresee the problems that arise; our attitudes towards them vary; different individuals with dissimilar perspectives are involved in the problems to which there are many solutions and their effects are based on different values.

The artworks in this exhibition are connected to wicked problems. By contemplating their subject matter we may become aware of other places in the world and the impact we have on far flung places. The exhibition Challenge provides viewers with the opportunity to consider and even debate these situations and the issues which arise. In this manner, the artworks question assumptions that are generally accepted as true without looking for counter-arguments. The LÁ Art Museum thus becomes an arena to help us raise questions, creating a space for discussing the tensions within the world and exhibiting works that themselves are connected to our experiences.

The exhibition's objectives are to provide us with the opportunity to discover issues related to sustainability and raise related questions on sustainability, us and the various values we hold. The guiding principles behind the choice of artworks were to provide an artistic perspective from which we have an opportunity to get to know the issues of sustainability and to raise questions on important issues of sustainable development that concern all of us. The content of the work thus raises questions that help us interpret the work on our own terms and thus provide us with fresh tools to consider views and messages portrayed in these creative works.

How can we learn from Artwork?

In a society that strives for sustainability it is important to observe and value different forms of knowledge. Creating art is not a meaningless exercise. Instead, one might say that works of art serve as a window that interprets the world. The qualities of the works chosen for this show provoke critical

thinking and encourage us to take a stand on the issues discussed, and even demand our participation. Artworks of this kind are well suited to help us understand the issues we face regarding sustainability. The connection between the artworks exhibited and the discussion of single works reveals issues connected to sustainability such as ecology, the environment, equality and philosophy from diverse perspectives. The works raise questions of who we are, what we prioritize in our lives, the world surrounding us and how we behave and the impact our behaviour has on our environment and our society. Artworks that initiate a discussion of the social situation of the individual, the connection between man and nature, attitudes, values and national self-identity or gender roles have the capacity to raise our interest and challenge our perspectives.

Encounters with Nature

Some of the artworks inspire us to think about the connection between man and nature. How do we utilize our resources? What are the consequences of inaction? Inaction can be expressed in laziness, lethargy or sloth leading to a waste of resources. Ethical questions are also deeply connected to social factors that are the foundation of a sustainable society. These factors often relate to arrogant decisions made without consultation and in bad faith. Pride has many expressions, both individually and within society. Decisions are based on knowledge and consideration of the consequences of actions in time, place and for the future. It might be necessary to put personal ambition aside and take the time necessary to understand the situation before embarking on the next steps. These steps could focus on universal rights and the responsible use of resources. Those who practice such methods work in the spirit of humility, modesty, and transparency, guided by empathy, equality and consideration. Equality has many aspects that all have in common that they demand empathy, concern and consideration. But the consequences of ill-considered



Rúrí, *Waterfall I-IX*, 2003, Photographs, 175 x 175 cm x 4 cm, Collection of the artist.

Eggert Pétursson, *With out title*, 1991, Oil on canvas, 85 x 65 cm, Reykjavik Art Museum.

Ólöf Nordal, *Skoffin*, 2005, Photograph 116 x 140 cm, Collection of the artist.

decisions are often overwhelmingly problematic and therefore it is difficult to determine what might be the best solution.

Most of us who travel around Iceland are dazzled by the beauty, magnificence and diversity of the landscape, if we give themselves time. In a modern society there is much that absorbs the mind that we often don't give ourselves time to enjoy what we see. The work of Eggert Pétursson highlights the beauty of small things. We often don't have to go far to experience nature's grandeur.

A painting is a painting, not a flower. Although my paintings show certain varieties of flowers and I try to be true to botanical details these are not the actual flowers. I also feel that a title excludes a variety of emotional experiences, it channels the work into a certain direction when I am trying to keep all options open. It's enough that people recognize the flowers in my work, I don't have to tell the viewer what their names are and even less so what frame of mind they should be in to take them in. (Pétursson, 2007)

The artist Rúrí is often political in her work. In many of her works she is concerned with the relationship

between man and his environment and the effects of human actions on the earth.

Humanity seems to be constantly conquering nature, but there is no conquest of the earth: all we can conquer is ourselves by finding a golden balance with our environment. It's the only realistic conquest. (Rúrí, 2011)

The work *Waterfall I-IX* warns us not to over exploit our water resources that are an all important natural resource.

Ólöf Nordal's work *Iceland Specimen Collection, - Skoffin* is based on a folktale about the mythical monster skoffin, that according to legend is an animal or distortion of an animal, a hybrid between a dog/cat and a fox. People feared the bastard offspring of different species because they were unfamiliar creatures. Similar fears exist in contemporary society towards the traditions and habits of ethnic minorities that are unfamiliar to us. Such fear equals racism.

Skoffin are terrible animals that can kill with their gaze. There is nothing cute or sweet about them. (Ólöf Nordal, 2015)

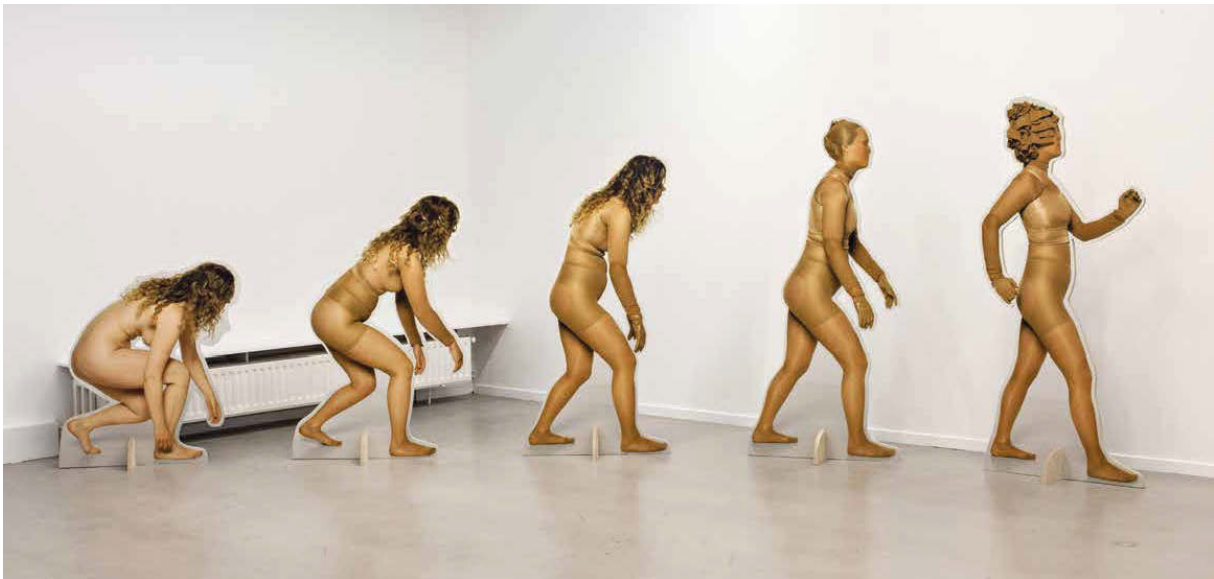
The myth then became a reality when real skoffin

were born in Flateyjardalur in the North sometime around the middle of the 18th century. The Icelandic Institute of Natural History decided to verify the truth of the tale by examining the conserved animal. Methods of DNA testing were used as in the case of criminal pathologists investigating an intended crime or paternity suit. DNA testing of the animal from Flateyjardalur was aimed at discovering the DNA of a dog or a fox. The result was that the animal proved to be a dog. In every instance of skoffin being detected in areas of the world inhabited by foxes it has been proven that this is only a case of natural genetic variations in the animal. In this work, Ólöf illuminates contemporary issue surrounding aberrations in humans and animals. The work invites both past and future references, as the idea of malformation has through the ages been a source of Icelandic folktales. In past centuries people were afraid of deformed animals and considered them of evil origin. In the work, Ólöf also points to the exchange between man and nature and man's efforts to control nature. In the past, Ólöf has explored other

cases of malformation through natural circumstances. With her observations she emphasizes the diversity of nature and its sensitivity to the interference of man. It is also of interest to ponder whether we would rather believe the myth that flourished in Flateyjardalur, or the science of genetics that has obliterated our flights of fantasy on this mythical being that continues to exist even if only in our minds.

The Icelandic Love Corporation has also explored the problem of man's interference in the natural environment. In the works *Attic* and *Evolution*, we are given a chance to reflect on how far man has come from his origins. The work of the artist group is often focused on social and cultural factors, in which context the Icelandic Love Corporation has looked at globalization and pop culture. In their works, the artists often point at feminine factors and to accentuate these they use materials and methods often more connected to women such as crocheting, sewing and textiles.

While we think nylon stockings are an incredibly charming and important engineering feat they are also an example of



Evaluation, 2010, photographs, plywood, 183 x 550 x 40 cm, Collection of the artists



Þorgerður Ólafsdóttir, *You have a face with a view*, 2011, Collage / Photographs and collage 41,5 x 31,5 cm each, Collection of the artist.

Ásdís Spanó, *(Un)foreseen*, 2014, mixed media 85 x 55 cm. *Destination*, 2014, mixed media, 150 x 150 cm, Collection of the artist

how man tries to 'fix' or 'beautify' nature, for example, by producing stockings meant to push the butt up and the stomach in. We are also in touch with a producer who gives us leftover or faulty stockings. The nylon is derived from oil so that you might say that the stockings are our oil paints. (ILC 2015)

In the natural environment the transformation of biomass to oil is a lengthy process. Overharvesting of oil results in an unsustainable use of natural resources. Like other plastic material nylon takes a very long time to break down and the waste creates problems. This group of artists operates according to a democratic framework without rules and where nothing is beyond their consideration.

Man's Impact on Nature and the Environment

Þorgerður Ólafsdóttir's work, *You have a face with a view* (2011) shows how outside market forces have marketed chosen areas of Iceland. Society moves at a fast pace and often it feels like we must obtain everything at once. The portraits are a collage of

postcards that Þorgerður uses to interpret the model's character traits. The work's title comes from a Talking Head's song, 'This Must Be the Place' from 1983, but the song includes the lyrics "Out of all those kinds of people, you've got a face with a view. The work can also raise questions about the fast growing tourist industry and the effects of increased pressure on the natural environment.

The over abundance of images showing the natural environment encourages people to develop a romantic fantasy of certain sites. Places that belong in Jules Verne and William Morris science fiction narratives. This island is a fantasy but still you want to believe every landmark and every adjective. (Ólafsdóttir, 2015)

In her work, *(Un)foreseen* (2014), *Destination* Ásdís Spanó, has developed her own working methods for the sustainable use of materials. Instead of using traditional oil paint and oil mediums, which by their nature are polluting for the environment, she uses a mixed technique with environmentally friendly materials. At the same time, she reflects on the unforeseen consequences we face as a result of the

impact we have on nature.

I connect the lines to time and the multi-layered reality that characterizes the urban structures of the Western world. Linear horizontal surfaces penetrate the organic texture of the picture plane and merge with it just as man-made environment intertwines with nature. (Spanó, 2015)

Revelation by Hrafnkell Sigurðsson is a photograph of a bubble plastic wraps floating underwater. The work makes references to the culture of packaging. The bubble plastic is produced solely for protecting other manufactured items. Hrafnkell took the photographs in an Icelandic lake at about a depth of 10 meters.

At some point, I imagined that the packaging of the artwork itself would have been sucked into the surface of the photograph and remained there floating around. (Sigurðsson, 2014)

Large quantities of plastic pieces are floating in the world's oceans. Most of this plastic ends up in one of the five major garbage patches drifting in the



Hrafnkell Sigurðsson, *Revelation III*, 2014, Photograph
144 x 96 cm, i8 Gallery



Rósa Gísladóttir, *The Doubt of Future Foes Exiles My Present Joy*, 2009, plastic bottles, water, ink, Plexiglas,
280 x 70 cm, Collection of the artist

oceans near the tropics, where the ocean currents gradually collect all loose floating objects in the area. Plastic can cause serious environmental and health risks throughout the food chain. The majority of plastic ends up as landfill with other waste, and it takes plastic in a landfill several centuries to degrade. Various toxins that have been released into the environment, however, tend to settle on plastic garbage in our environment and do even more damage than they otherwise might. With this work the artist opens our eyes to what is important to us, and inspires us to think about what we need to change. This work raises questions about our consumption and its consequences. What sacrifices are we ready to make for our own consumption? In this work the viewers relate to daily consumption placed in a new context.

Rósa Gísladóttir's work, *The Doubt of Future Foes Exiles My Present Joy*, describes the artist's fear of the contamination of our natural environment caused by the habits of affluent society.

Our current well-being is bought at a high price because it entails environmental

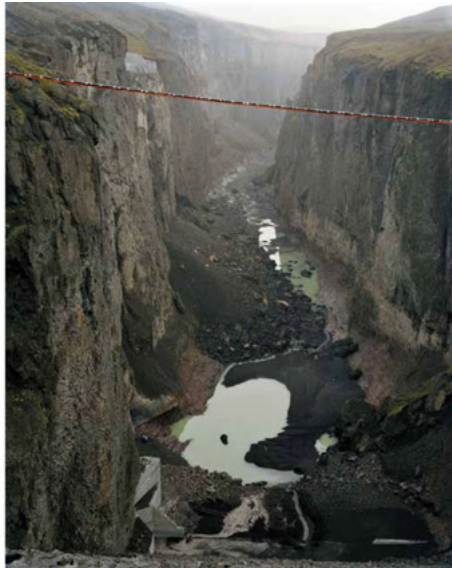
disasters that can be likened to enemies lying in wait in the future.

The work raises persistent questions about our consumption habits. In her works, Rósa often explores double standards, where she looks at the gap between what is valuable and what we look at as garbage.

Maybe we have a love-hate relationship with packaging.... Everything taken on loan from the future is owed to future generations. (Gísladóttir, 2015)

Consumption is a complex phenomenon and the culprit is seldom one person. A country's consumption pattern can call for demands for heavy industrialization that is often seen to benefit certain social groups.

Pétur Thomsen works on the stamp man has put on his environment due to society's demands for increased economic growth and the demand for more production of electricity. In his series *Imported Landscape* he describes the drastic transformation of the landscape around Kárahnjúkar.



Pétur Thomsen, *Imported Landscape*, 2010, Photograph, 112 x 140 cm, National Gallery of Iceland, 280 x 70 cm,

From a subjective and dramatic viewpoint we observe the tracks man has left. The wounds made by the bulldozers are large and remind us to allow nature to enjoy the benefit of the doubt, as it has no defences

The installation by Bjarki Bragason consists of the video *It*, the paper work *On it as it* and the sculpture *In it as it*. The work is based on a piece of ice from the glacier Sólheimajökull found in a rubbish bin outside the cinema of the University after a scientific conference. The ice had been used to demonstrate how to use it to read weather periods and their history. In his artwork Bjarki looks at how values are created and investigates leftovers of valuable materials as a larger whole. Bjarki observed the ice as an object that is in the grey area between being an important scientific phenomenon used as evidence of time and history or as a piece of waste. In his attempt to approach the subject Bjarki cut the ice in two with a hot knife. One half he melted with a heat gun and the other half he sank in to a concrete mixture that melted the ice through a coalescing chemical interaction. The installation contemplates the insubstantial nature of the material and encourages us to ponder the chain of cause and effect on the one hand, and, on the other, the uncertain evidence of an event that has taken place and left its mark.

The Power of Knowledge by Anna Línadal raises a persistent question, by its very title, that motivates the viewer to ponder the power and responsibility that come with knowledge.

Understanding is a multi-faceted concept. Man's understanding of how to split the atom, for example, brought him to 'harness' nuclear energy (1940), an example of the reciprocity between science and society in the twentieth century that many would have wished had not happened. Curiosity about one's environment and the need to observe it, know it, and understand it, enables us to survive. (Línadal, 2015)

When we learn and acquire knowledge we develop ways of understanding. As we learn to live in harmony



with others and the environment we need to be conscious of our own values and have the ability and knowledge that enables us to live with others. In this way, the nature and role of knowledge in society is complex and multi-layered.' In her work, Anna responds to external factors, explores the tiniest units to examine the larger whole. She asks questions about cause and effect, looks at how historical authoritarianism is mirrored in our time, and how the primal energy that brings life to our lives surges in our everyday reality.

Bjarki Bragason *It*, 2014-15 Video installation, 118 x 245 x 54 cm, Collection of the artist - *On it as it*, 2014, Paperwork, 24 x 70 cm each, Collection of the artist, *In it as it*, 2014, Concrete mixture, each, Collection of the artist

Anna Líndal, *The power of knowledge*, 2010, chromogenic print, 93 x 133 cm, Collection of the artist

In the work, *Can I offer you more I & II?* Anna Líndal offers an interesting metaphor for how an ordinary action that breaks its boundaries becomes a threat to the ruling system. In this work we are given an opportunity to ponder the social position of women and the rules by which our daily lives are organized. Icelandic hospitality comes to mind, greed and how consumption can easily spin out of control.

Icelanders and Self-Identity

Libia Castro & Ólafur Ólafsson *Untitled (Portrait of the artists wearing the Icelandic women's costume; peysuföt and upphlutur)* forms part of a large research project in which the artists make references to social and environmental injustice and the greed that characterizes today's consumer culture. The work elicits an ethical perspective where we are encouraged to reflect on life and culture in connection with an emphasis on heavy industry in Iceland. In the work,



Anna Líndal, *Would you like some more?* 1995, chromogenic print 69 x 39 cm, each, Collection of the artist



Libia Castro & Ólafur Ólafsson, *Untitled, Portrait of the artists wearing the Icelandic national women's costume; peysuföt and upphlutur*, 2000, Photograph, 50 x 75cm, National Gallery of Iceland, 112 x 140 cm, National Gallery of Iceland

the two artists stand in front of the first Icelandic aluminium plant. They reflect on the cost to the environment resulting from harnessing natural sources to produce electricity sold below market rate to heavy industry. Heavy industry is not only a threat to the country's natural environment, but also to its culture and values. Criticism of our times is characteristic of most of Libia and Olaf's work. Here they use humour to highlight the importance of social reform and thus provide us with an opportunity to exercise critical thinking concerning economic and political issues in Iceland.

Bryndís Snæbjörnsdóttir & Mark Wilson's work, *Icelandic Birds* offers observations on the nature of categories and systems. How some things are easily categorized and invited to participate in a system while others are treated as uninvited guests. This is true both for human and animal relationships. The work invites analytical reflection on man's reluctance to change. It seems that innovation causes fear at the same time as the exotic is exciting. The work presents clear references to nationalism and invites us to ponder the directions in which society has developed and the increased emphasis on the myth of the 'pure nation', as well as the emphasis on cultural stability.

In this installation, the artists exhibit stuffed birds from Icelandic nature alongside a poster showing exotic birds whose natural habitat are warmer areas of the earth, but which have been imported into Icelandic homes as pets. It is interesting to approach this work bearing in mind how ideas about nations and nationalism have developed in the past and present, and how they might develop in the future. The international element is set against the local, nature against culture, what is accepted against what is forbidden. Reflecting on the origins of the pets leads us to think about when and how one becomes an Icelander since all these pets have inhabited Iceland, even for many generations, while many of the 'Icelandic birds' are migratory birds that only stay here for short periods at a time.

Ósk Vilhjálmsdóttir's work *Bónus* can be interpreted as a critique of social injustice. In this work she interprets a true event in Icelandic history. It is based on a news photograph and painted in the style of propaganda posters from the beginning of the last century. In her work, Vilhjálmsdóttir often looks at contradictions, such as concepts from the business world and the connection between profit and loss – goodness and greed. She notes that these are 'vulgar' concepts people like to avoid using. Instead we use technical words that embellish reality, such as economic growth, laws of the market, ownership and consumer power. In



Bryndís Snæbjörnsdóttir & Mark Wilson, *Icelandic Birds*, 2008, Installation, Collection of the artists



Ósk Vilhjálmsdóttir, *Bónus*, 2009, Oil on canvas, 180 x 120 cm, Collection of the artist

Spessi, *Weapons of the Revolution*, 2010, Photographs 58 x 78 cm each, Reykjavik Art Museum of the artist

her work *Bónus*, her subject matter is capitalist power and we are given cause to raise questions about the motivations behind charity. The work shows a merchant who has so much that he can give to those who have too little. In this sense, it is worth asking why some people have too much and others have too little. In this image, the merchant in *Bónus* reminds us of the savior feeding the poor while the bishop blesses the event. The image is constructed as if it were portraying a sanctified moment, with its dark background and light focused on the giver. Its division into three parts recalls the structure of religious images.

We Can Make a Difference

Sustainability is a broad concept, and it is therefore difficult for all of us to understand whether steps in the right direction have been taken while the problems at hand can seem overwhelming. It is important that we all reflect on why we should and how we can concern ourselves with this issue. How can we create a society based on mutual responsibility? In such a society the inhabitants must take action, and know and be conscious of their values, attitudes, and feelings with regard to our global impact on

the environment, as well as the equality for all the planet's inhabitants, nature and the environment, equality and diversity, wellbeing and public health, economic development and future vision.

In his series *Weapons of the Revolution* Spessi uses the style of the still life to show everyday objects like pots, pans, spatulas and kettles that protesters used in the 'Kitchenware Protests' in order to express the injustices that the citizens of this country have to live with. The Kitchenware Protests rebelled against the ruling powers in society. The weapons reflect the individuals who wielded them, and therefore the photographs can be regarded as portraits. The weekly, even daily, protests were spurred by social activists in the aftermath of the banking crash in Iceland in the fall of 2008, and they continued into 2009. The series is therefore also a real source on these events and it accentuates the unexpected and historic meaning of everyday things in the context of protests against the worship of vanity.

Ásthildur Jónsdóttir's work *Skúli's Crosses, All Around* shows the quiet influence an individual can have on his environment. The installation shows Skúli Gunnlaugsson at work. Skúli has crafted almost five hundred light crosses since he retired from



Ásthildur Jónsdóttir, *Skúli's Crosses, All Around* 2014-2015, photographs, map and video. Collection of the artist

farming. He has given the crosses to individuals all around Iceland and some abroad. The photographs show the crosses in their ordinary context all over the country. With the lights he wants to work towards peace, which is the necessary foundation for well-being in the world. Peace has many aspects such as fairness, tolerance and mutual respect. With the peace light it is Skúli's hope that we unite in working towards finding new and creative ways to encourage understanding, friendship and co-operation towards the wonders of the world, which we have a duty to protect, and, guided by respect for nature and people, take mutual responsibility for our environment.

Hildur Hákonardóttir's installation provides us with the opportunity to reflect on the same issues. The work is based on nature and its inherent powers. The world is a place of constant ferment, reflection, coincidence and processes. By directing our energies to the positive, staying still and reflecting we give ourselves the tools we need to exhibit courage, ability and will to give nature the benefit of doubt.

Around 2500 years ago, on the beautiful Greek island of Sicily, lived Empedocius the philosopher. He formulated the theory of the four elements, although the original idea is considered to predate him. The elements were fire, air, water and earth and their companions, dryness, humidity, cold and



Hildur Hákonardóttir, *Homage to Empedocius*, 2015, Installation, Collection of the artist

heat. Humour was a part of Empedocius's philosophy and presented a simple equation: water + air + earth + fire = a hare. Religious scholars add one more intangible element: the spirit. I invite viewers to sit down on the tree trunks and contemplate how people concluded that the universe was composed of these four elements in addition to the spirit. Or are we travelling into new worlds in which these powers and their value will change? (Hákonardóttir, 2015)

The Relationship between the Present, Past and the Future

Hildur Bjarnadóttir's work is often based on women's traditional work methods. Her work *Giving Back* portrays photographs of four pairs of mittens that Hildur knitted for her grandmother in Icelandic wool and hand dyed with colours that Hildur derived from plants her grandmother had planted on her piece of land in Hvalfjörður.

The garden is both a conceptual and material source for this work. I process colours from the plants that my grandmother planted on her land. I look at the plants as a connection to my grandmother as she planted them and cared for them for



Hildur Bjarnadóttir, *Regive*, 2007-09, Photographs, 43 x 43 cm each, Collection of the artist - Without title, 2009, Photographs 22.5 x 32.5 cm each, Collection of the artist. Guðrún Tryggvadóttir, *Clock of Centuries*, 2014, Oil, gold and ash on canvas, 200 x 200 cm, Collection of the artist

decades. (Bjarnadóttir, 2015)

The work's title mirrors Hildur's giving back to her grandmother who taught her to knit and knitted mittens for her. When her grandmother stopped knitting this tradition was reversed and it was Hildur who knitted and gave her mittens. The work *Without title* makes references to Hildur's origins and her relationship with her grandmother, but the photographs portray the two of them helping each other to knit.

In *The Clock of Centuries* Guðrún Tryggvadóttir demonstrates the connections between generations. Communication between generations is the building block for a society of shared responsibilities. This entails allowing each individual to grow into a functional citizen by re-evaluating and honouring the knowledge and values that underpin our feelings towards our environment and our peers.

The Clock of Centuries is a visual presentation of time and an attempt to demonstrate regeneration through direct female descent. The form is a clock; each circle is one century and the individuals of the female line placed in their birth years as far as records reach, or to the year 1685. The closest to us in time is my daughter, born in 1988, followed by myself in 1958 and my mother in 1938 and thus it proceeds

further back. On average these equals three generations in a century. (Tryggvadóttir, 2015)

Participatory Art

Participatory or relational art departs from relationships between humans and the social context of creating art. The participatory artworks in the exhibition all have in common that they raise the question of who is the author of the work. In her participatory installation *Co-Traveller* Gunnðís Ýr Finnbogadóttir explores the concept of time. While we imagine that the work ceases to function when we are not present the work lives on in the body of the participant. The participant's experience lives on, both before and after participation in the work.

The bodies of the participants do not only exist in the space (the bus) but also in time and in the journey and in the moment of the encounter with the moments before and after. This provides the opportunity to create a narrative because not all parts of the work are accessible at the same times, such as in a work of sculpture for example. (Finnbogadóttir, 2015)

In the work Gunnðís looks at the participants' ideas



Gunnðís Ýr Finnbogadóttir, *Co-travelers*, 2015, Performance, Bus tour to the opening of this exhibition. Museum visitors were invited to accompany people who attend the senior-center Hæðargarður 31, Reykjavík



from the perspective of cultural memory, travel and dialogue. The work builds on the participants' journey between Reykjavik and Hveragerði. The work is the participant's experience and in this way Gunnþís opposes materialism and at the same time raises questions on museum holdings and the place of artwork that has no material substance in museums.

The book-work *Our Nature – My Wishes for the Future* shows visualized wishes for future generations created by youth from the South of Iceland under the supervision of Ásthildur B. Jónsdóttir. By inviting people to take part in the project the aim is to foster a sense that art can be a dynamic part of our lives, and to provide a lens through which each and every one of us can examine our perspectives on life. The aim of including this work in the exhibition at the LÁ Art Museum is to create conditions for a dialogue between the young people and museum guests on the exhibition as a whole. This idea is inspired by the philosopher Bourriaud who sees artistic practice as a process that always entails making connections between people. The book-work is meant to create a space in which art can fuel our interest in those elements of our society that might be improved, and which improvement might lead to sustainability. With participating in this work, students are given an opportunity to freely express their opinions, allowing each and every one to develop his/her position on

Ásthildur B. Jónsdóttir, *Our nature - My Wishes for the Future*, 2014-15 Participatory work

issues by listening, reflecting, exploring and assessing arguments. Student teachers from the Iceland Academy of the arts took part in the workshops.

- How can you make a difference?
- How can artwork encourage us to approach issues of sustainability from new perspectives?
- Is nature making sacrifices for economic growth?
- What is the connection between knowledge, place and time?
- How can we respond to changes in our environment?
- Do we respond rapidly enough to scientific discoveries?
- What impact does our lifestyle have on the natural environment?
- What do we find natural to buy, renew and destroy?
- What sacrifices are we ready to make for our own consumption?
- How much “hospitality” do we want to show foreign industrialists when they seek cheap electricity?
- Who is responsible for sustainability? • What is value?
- When are we profiting and when are we losing?
- How can we create a society of solidarity?

Artists

Anna LÍndal (1957) studied at the Icelandic College of Art and Crafts and completed her postgraduate studies at the Slade School of Fine Art in London in 1990. In 2012 she finished MA in Artistic Research from St Lucas, University College of Art & Design, Antwerp. Since 1990 she has been active in numerous solo and joint exhibitions in Iceland and abroad, she took part in the Istanbul Biennial in 1997, on life, beauty, translation and other difficulties, curated by Rosa Martinez. The Kwangju Biennial, Man + Space, South Korea in 2000, curated by René Block and the Reykjavik international Art Festival 2005 and 2008. LÍndal's latest solo exhibitions are Mapping the impermanence at the ASI Art Museum and Context Collections / Lines, Harbinger, Reykjavik. LÍndal was a Professor in Fine Art at the Iceland Academy of the Arts in 2000 – 09.

Ásdís Spanó (1973) creates paintings where she explores the various depictions of rest and movement on a two dimensional plain. Her ideas come from observing the simplicity of organic form found in nature and imagining the explosive energy that can lie beneath the surface. The merge of diverse landscapes, informal and formal settings draws the viewer closer and into a world of expressive but cognitive existence. Ásdís reflects on questions about the relation of chaos and discipline and finds ways of expressing and uniting the two using organic and geometric forms. <http://www.asdisspano.com>

Ásthildur B. Jónsdóttir (1970) is an assistant professor at the Faculty of Art Education, Iceland Academy of the Arts. She is also a PhD student at the University of Iceland for a joint degree as doctor of art at the University of Lapland Rovaniemi. The subject of her thesis is the potential of contemporary art in education for sustainability. Her research interests include arts and cultural movements that support sustainable development and Education for

Sustainability at all levels, within both formal and informal contexts. She has an MA degree from New York University, The Steinhardt School of Culture, Education, and Human Development and MEd degree from the University of Iceland

Bjarki Bragason (1983) studied fine art at the Iceland Academy of the Arts (2003-2006), attended an exchange program at the Universität der Künste í Berlín (2005) and completed a master's degree from the California Institute of the Arts (CalArts) in Los Angeles in 2010. In 2008, he received grants from the Dungal Art Fund and the Guðmunda Andrésdóttir Trust, and in 2009 he received a Lovelace grant to study at CalArts. In 2012, he received a public grant from the Artists' Fund. Bjarki teaches at the Reykjavik Art School and sits on the board of the Museum of Contemporary Art. He has also taught at the Iceland Academy of the Arts.

Bryndís Snæbjörnsdóttir (1955) & **Mark Wilson** (1954), Bryndís Snæbjörnsdóttir and Mark Wilson have been collaborating since 2001. Their work, characteristically rooted in the north, explores issues of history, culture and the environment in relation to the individual and the sense of belonging or detachment. Recent projects use the relationship between humans and selected animals, as a springboard to posit questions on cultural and individual location between 'domesticity' and 'wilderness'. Their work is installation and process-based, utilizing photography and video.

Eggert Pétursson (1956) studied at the Icelandic College of Art and Crafts, 1976-79 and the Jan van Eyck Academie 1979-81. His paintings of tiny flowers blanketing his canvases have been charming viewers and confounding critics for years. As Pétursson himself describes these works, they seem to turn mostly on process—the way in which he teases forth the shapes of flowers from the canvas with brushstrokes of color, sometimes barely perceptible

under layers of white. As he says of these paintings: One can easily get lost in the details without ever achieving a complete perception. Pétursson has exhibited widely and was nominated for the Carnegie Art Award in 2004 and 2006 when he was among prize winners.

Guðrún Tryggvadóttir (1958) has a degree in fine arts from the Akademie der Bildenden Künste in München, Ecole Nationale Supérieure des Beaux Arts í París, and the Iceland Academy of the Arts. Guðrún has held several exhibitions, both at home and internationally, founded and run art school, illustrated the children's book *Mythological Creatures in Icelandic Folktales* and in recent years she has managed the environmental website natura.is, which she founded in 2006. She now works on a series of paintings that visualizes family connections and generational change.

Gunndís Ýr Finnbogadóttir (1979) received her masters in Fine Art from the Piet Zwart Institute, Rotterdam and Plymouth University, 2008 and her master degree in art education from the Iceland Academy of the Arts, 2011. Her work is permeated by issues concerning with lived spaces, hospitality, acts and rituals of recollection and female identity. Yet her works are neither sociological nor are they nostalgically sentimental, but rather minimal and poetic. She is interested in authorship and collaboration, questioning individuality and the unique. Much of her works are parallel modernistic ideas with our current times.

Hildur Bjarnadóttir (1969) graduated from the textile department of the Iceland Academy of the arts, and with an MFA from the Pratt Institute in New York in 1997 and is now studying for a Ph.D. at the Bergen University of Arts in Norway. Bjarnadóttir has been active and sought after in exhibitions and has participated in numerous group exhibitions and private exhibitions, both locally and internationally.

Her work has attracted attention for the originality with which she explores the existence of art and the boundaries between craft and art. Her work can be found in major museums in Iceland, Scandinavia and the USA, as well as in several private collections.

Auður **Hildur Hákonardóttir** (1938) studied textile at the Iceland Academy of Arts and Crafts and the Edinburgh Art University. She later qualified as a textile instructor from the Iceland Academy of Arts and Crafts, having taught there between 1969 and 1981 and served as its headmaster between 1975 and 1978, a time of great change for the institution. Hildur also worked on textiles between 1969 and 1990 and her work was exhibited both locally and internationally. She was active in the SUM-artgroup in Iceland and the women's rights movement. Hákonardóttir works are found in the collections of the main museums in Iceland and she was awarded the Icelandic Visual Arts Medal of Honor in 2010. She is also known as a gardener and a writer.

Hrafnkell Sigurdsson (1963) studied at the Icelandic College of Art and Crafts, the Jan van Eyck Academie, Maastricht, and Goldsmith College, London. Sigurdsson's practice, be it in video, photography or sculpture, incorporates a play with such co-entities as nature and culture, the abstract and the figurative, mind and body. Much of Sigurdsson's work is based on photographic series portraying landscape or its artificial substitute. The immaculate images draw qualities from the tradition of painting, reminding the viewer of the multi-layered realities behind the veil of visual surfaces. This feature is furthermore investigated in the artist's three-dimensional work and videos, where the area between subject and surroundings is explored. www.hrafnkellsigurdsson.com

The Icelandic Love Corporation is a group of three artists: Sigrún Hrólfsdóttir (1973), Jóni Jónsdóttir (1972) and Eirún Sigurðardóttir (1971). They have

worked together since graduating from the Icelandic College of Art and Crafts in 1996 and received recognition both in Iceland and abroad. The ILC uses nearly all possible media, including performance, video, photography, and installation. The works blend humor, subtle social critique and often incorporates ideas of traditional femininity, but they are always women on their own terms. The members of the ILC have lived and studied in New York, Berlin, Copenhagen, and are currently based in Reykjavík.

Libia Castro (1970) and **Ólafur Ólafsson** (1973) have collaborated and exhibited internationally since 1996. They explore the political, socio-economic, and personal forces that affect life in the present day. By means of portraying, mapping, intervening and informally collaborating with people they meet, they explore space, the environment and its dynamics in different possible and impossible ways. Their projects have an open-ended structure and often result in playful, poetic, subversive and critical works. The artist duo was nominated for the art award Prix de Rome in 2009 and received the third prize. They participated in the European Biennial of Contemporary Art, Manifesta7 and represented Iceland at the 54th Venice Biennale in 2011.

Ólöf Nordal (1961) graduated from the Iceland Academy of Arts and Crafts in 1985 and received a master's degree from the Cranbrook Art Academy in Bloomfield Hills and Yale University's sculpture department in New Haven in 1993. She also studied at the Gerrit Rietveld Academy in Amsterdam. Nordal has worked in multiple mediums, but she mostly works on sculpture, photography and video installations as well as public art. In her career she has dramatically explores subjects that connect to culture, origins and folk beliefs while working with local and global issues

Ósk Vilhjálmsdóttir (1962) studied at the Icelandic Academy of Art and Crafts and Hochschule der

Künste in Berlin. She works in diverse mediums such as painting, photography, video and installations. Her work stems from her sense of political commitment, often addressing tension between the public and the private and investigating the potential that art holds as a mechanism for dialogue and social change. Her works seek to critically challenge consumerism, globalization, the exploitation of the environment, and the needs of individuals to navigate an increasingly complex daily existence. Vilhjálmsdóttir has received awards for her work and exhibited widely in Iceland and abroad.

Pétur Thomsen (1973) studied art history and archaeology at the Université Paul Valéry Montpellier III, Montpellier; photography at École Supérieure des Métiers Artistiques, Montpellier and at École Nationale Supérieure de la Photographie (ENSP), Arles. He has been nominated for prestigious awards, and has won for instance the international LVMH (Louis Vuitton Moët Hennessy) Young Artists' Award and in 2005 Pétur was selected by the Musée de l'Élysée in Switzerland to participate in the exhibition ReGeneration, 50 Photographers of Tomorrow. Many of Thomsen's works show the violent intrusion of mankind into Iceland's nature. Whether seen as social criticism or as a romantic statement, his work bears witness to the rapid change of Iceland's land- and cityscapes.

Rósa Gísladóttir (1957) graduated from the Icelandic Academy of Arts and Crafts in 1981 and the Munchen Art Academy in 1986. She completed master's degrees in environmental art from the Manchester Metropolitan University in the UK and MartEd in art education from the Iceland Academy of the Arts in 2014. Rósa has received numerous awards and her works displayed widely such as at the Mercati di Traiano of the renowned Museo dei Fori Imperiali in Rome, where past exhibitors are international well known artists.

Rúri (1951) studied at the Iceland Academy of Arts

and Crafts, as well as metalwork at the Reykjavik Technical College and the De Vrije Academie Psychopolis, in the Hague. She is a conceptual artist and presents her work through different mediums such as sculpture, installations, environmental work, multi-media, performance, book-art, movies, videos, sound-art, mixed mediums, as well as computer generated and interactive work. Her artwork has been exhibited internationally, in Europe, the USA and Asia. She represented Iceland at the 50th Venice Biennale in 2003 where her work attracted a lot of attention and discussion in an international context.

Spessi (1956) studied photography at De Vrije Akademie, Den Haag, 1989-90 and Aki Akademie voor Kunst Beeldende, Enschede, the Netherlands, 1993-94. He has exhibited his photographs in numerous exhibitions at home and abroad. Besides working as an artist, he also handles advertising and portrait photography and is recognised for unique and innovative approach. His photographs have appeared in major newspapers such as New York Times and Politiken. Spessi has also given photographic lectures at the Iceland Academy and in the School of Photography.

Þorgerður Ólafsdóttir (1985) graduated with Bachelor of Fine Arts from Iceland Academy of the Arts in 2009 and received Masters of Fine Art from Glasgow School of Art in 2013. In her works she considers ideas and definitions of identity, places and the field of systems we use to understand the natural world and how these might be interpreted in more subjective areas through memory and literature. Þorgerður has exhibited her work in Iceland, Scandinavia and the UK as well as heading exhibitions and artists' publications in Iceland. She is now the director of the Living Art Museum as well as chairman of the board.

ARCTIC-CIRCLE CONFERENCE

BOUNDARIES AND BRIDGES

Creating new roles
for old traditions

HARPA, REYKJAVÍK
OCTOBER 16 - 18 2015

Learning for sustainability involves gaining a holistic view of a situation while working towards an understanding of it. This entails going beyond raising awareness, addressing underlying issues that lead to unsustainable practices in our daily lives, and challenging some of the assumptions that underpin day-to-day practices. Visual culture can help link the meaning and value of people's daily living habits. Visual arts have been used through the centuries as a reflection on people and their actions; when looking at certain art a different perspective on the world can be seen. For many people, the visual message of art is more accessible and easier to grasp than a message in a written text. Many artworks have the potential to provoke impressions or feelings, which can stay with the individual for a long time. Art exhibitions can promote transformative learning experiences as they awaken personal reflections, experiences, opinions, questions and interpretations, with guests leaving the artwork with a greater sense of self and the surrounding world. Artists, in whatever medium they work, create works that are related closely to the social context and are influenced by current affairs. Artists today explore ideas, concepts, questions, and practices that examine the past, describe the present, and imagine the future.

There are at least three ways in which art can help viewers at this exhibition grapple with issues of sustainability: by interpreting, researching and creating concepts that deal with sustainability; by using different kinds of materials in a sustainable manner; and by maintaining and developing technical knowledge and a thorough understanding of resources. When looking at artwork we learn to recognize and act on important issues related to sustainability.

The mission of this exhibition, as with most art exhibitions, is to bring art and people into contact. This exhibition offers participants in the Arctic Circle conference an opportunity to pause for a while and to interpret and reflect on selected works of Icelandic artists that are concerned with maintaining the traditional knowledge of their forebears and finding resonance in old traditions through contemporary art. The exhibit is designed to broaden the context of the Arctic dialogue and strengthen the developing focus of Icelandic contemporary art on the Arctic.

This exhibition shows how artists can build bridges transforming traditional knowledge into modern life. It portrays the contribution of thirteen Icelandic female artists to the maintenance of Icelandic cultural heritage. Preserving and developing old know-how can open many-faceted values in society, encourage solidarity and shared values between generations. It is therefore important to foster this tradition. Human creativity is often closely related to culture. Therefore, cultural sustainability can be characterized both by its utilitarian values and maintaining aesthetic experience and values. The works in this exhibit reflect on traditional handwork or techniques that have been inherited across generations, and have shown its excellent qualities in practical use and design. Some are still in use today. The artists embrace traditional knowledge and practices and consider the balance between aesthetic and function where the old traditions have now acquired new content. Techniques and traditions are transformed by using different materials or trying them out in a new context, preserving, yet altering earlier knowledge.

Ásthildur Jónsdóttir, curator
Assistant professor, Iceland Academy of the Arts



Hildur Bjarnadóttir's work is often based on women's traditional work methods. In her works, Bjarnadóttir reflects on her own relationship with her grandmother and Icelandic nature, but at the same time she taps into a system of textile symbolism that is familiar to a broader audience. The work *Re-Give* (2007-9) portrays photographs of four pairs of mittens that Bjarnadóttir knitted for

her grandmother in Icelandic wool. The materials were hand dyed with colours that she extracted from plants and hand dyed with colours of plants that her grandmother had planted on her own piece of land in Hvalfjörður. *The garden is both a conceptual and material source for this work. I extract colours from plants that my grandmother planted. The plants function as a recording device of their environment and therefore a connection to my grandmother as she attended to the plants on her land for 70 years.* The title refers to Bjarnadóttir giving back to her grandmother who taught her to knit and knitted mittens for her through the years. When her grandmother stopped knitting she reversed this tradition and started to make mittens for her grandmother.



The work *Context Collection, mapping the impermanence*, (2012) by **Anna Línal** presents a body of work that critically observes how scientific knowledge is created and presented. The vitrine consists of an embroidered map of Eyjafjallajökull on a linen damask, research material and specimens collected at the eruption side. Since 1997 Línal has taken part in annual expeditions of the Icelandic Glaciological Society to Vatnajökull, where she has been looking into the roles of pioneers and scientists. *By using the overlap between textile traditions and map making, I show how my own position as a female artist examining the patriarchal structures of society and culture is at stake. In the observation of site and context I deal with gender, geography, mapping and cartography, and the relationship between the artist and the scientist. When I embroider a map I claim the land. I always know where I am in the area; the glacier is in my lap.*

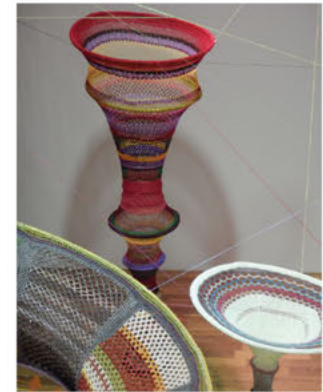
The colorful, magical forms by **Rósa Sigrún Jónsdóttir** in the work *Vortex* (2015) also conjure up the importance of Arctic nature. She occasionally puts up large textile installations, made up of crochet and knitted objects that she stretches into the space. *I find it interesting to see how this material, which is so deeply rooted in the culture of women, can change form and how the thread can expand.* In this work she worked with a group of 16 women who worked under rules of form and colors provided by Jónsdóttir. The result stretches itself around the ground floor of Harpa. In the video, we see the artist walking around in empty space, inside a crochet cylinder. The performance is a reference to her ancestors who constantly worked with their hands. In order to survive in the Arctic, where they were restricted to a certain kind of work - mothers and grandmothers crocheted and knitted whenever they could.



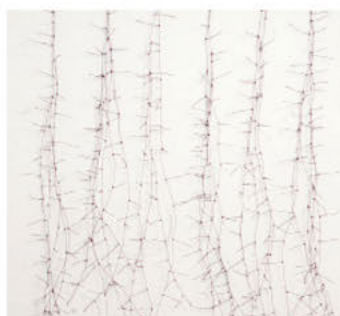
Kristín Jónsdóttir from Munkaþverá has been a pioneer in terms of using felting wool as material in contemporary artwork and has attracted attention for her treatment of materials. In this work, *Pages from the Book of Time* (1990) she felts Icelandic wool together with other fabric, on which she has handwritten ideas and thoughts that came to her mind when she was creating the work. The text is connected with memories and shows glimpses of history in an irrational way. The natural material, the wool, and the Icelandic sheep colors remind us of the earth. The material gives a direct reference to old Icelandic manuscripts as they

possess a strong ethnic dimension, but also in the colors and the layout. She reflects on the written words and water, time and vicissitudes. She integrates the art of weaving and writing, thus referring to both Icelandic literary heritage and its nature. The carded wool, or wool laid over the foundation base or inscriptions, forms a transparency, which gives openness and uncertainty that allows the viewer space for interpretation. The work is characterized by the interplay between present and past. The felted wool serves as a parchment on which she writes with ink reflections on the country itself and its history.

Guðrún Gunnarsdóttir's work *Nature Drawing II* (1998-2015) connects the past and the present through ideas of old craftsmanship. I am not working with the thread as such: I had only been using ancient traditions, which triggered a new approach. Gunnarsdóttir does not make the delicate craft items



that her ancestor used this technique for; instead her works are three-dimensional wall sculptures, made with wire, reminding us of the wonders that can be found in the Arctic nature. The work draws the attention to the empty space around and between the wires. The rules of the pattern are neither strict nor predictable, but rather bring to mind the patterns one finds in nature. The wall sculpture tells the story of the vulnerability of a delicate flora created from cold dynamic wire that floats with zero gravity. Gunnarsdóttir plays with perspective and the space between, the untold, shadows and secrets of the arctic region.



The work by **Ásthildur Jónsdóttir**, *The Value Archive* (2013-15) is created with the participation of a group of women. This work stems from her interest in memories and values. *Memories shape our current behaviour and the way we perpetuate customs and traditions. Unconsciously, we classify, organize and memorialize events in our lives. In this on-going work I have invited 45 persons to share in the creation of a book based on messages or knowledge they want to pass on to future generations.* On the text below the small work Jónsdóttir has written a personal message to each participant explaining why she has selected them to pass on their values. The work refers to the memory books that were very common with youth of twentieth century before



Ólöf Nordal's work *Þúfan* (2013) is inspired by the building heritage of the past centuries, a heritage of turf-houses constructed with old techniques. The small man-made hill is 26 meters in diameter and eight meters high, with stone steps to reach the top offering direct participation in the work. Reaching the top after walking up the spiral visitors find a small fishing shed where shark and different types of fish hang for drying. *I try to retain modesty and gentleness in an effortless way, but I also aim to possess subtle humor and kindly critique the race for worldly quality and abundance as I try to remind the visitor of where we come from.* At this exhibition the visitors can look at the sketches and photographs from the time the work was created. But the work itself is located to the north west when looking out of any of the windows facing that direction.



the days of the Internet. Participatory artwork like this departs from relationships between humans and the social context of creating art. The book-work is meant to create a space in which art can fuel our interest in those elements of our society that might be improved, and which improvement might lead to sustainability.

In the work *Stitches* (2010) by the art-nurses **Anna Hallin** and **Ósk Vilhjálmsdóttir**, the visitor is invited to take part in the creation of the work. With the collaboration the artists focus on the healing potential of art in society. *Most people like to take part in what is happening in their society.* Contemporary events and debates in society have often been the beginning of their artworks, both when they work independently and as when working together in the team of Art-nurses. The concert hall Harpa where the Arctic Circle conference and this exhibition are held provoked a lot of debate during the time when it was built. Within Icelandic society opinions were voiced that were associated with both disappointment and expectations. Now, the conference participants are invited to stitch with wool the interior of the Harpa printed on a canvas.



In the work by the **Icelandic Love Corporation**, (Eirún Sigurðardóttir, Jóni Jónsdóttir and Sigrún Hrólfsdóttir) *Dynasty* (2007) the artist group points at feminine factors, and to accentuate these they use materials and methods often more connected to women such as crocheting, sewing and textiles. The artists are in the roles of three upper-class housewives, who have escaped from their safe town houses to enjoy the last moments on one of the Earth's last snow caps. *We dam rivers to create electricity. Global warming is causing confusion in our waters. Could it happen that hydro power stations will no longer supply us with electricity? What does the modern upper-class housewife do when electricity is gone? They are dressed in their warmest furs, hunt fish and birds for food, sit by the fire and sing, crochet and contemplate.* The scene takes place in the future when all technology as we now



know it is long gone. This is a luxury and a privilege, since most other places are sweltering hot. The luxury of the future might become the possibility of a stroke of cool breath coming from a mouth with closely painted red lips. The long quiet scenes in the video remind the viewer of the potential of the Arctic region and the magical light of the northern peripheries.



In the work *Everything's different / nothing's changed* (2015) **Jóna Hlíf Halldórsdóttir** connects to the core of what it is to be human. In one moment you experience everything is changed and when you look from another perspective nothing has changed. On the marble, the date Icelandic women got equal voting rights to Icelandic men 'June 19th 1915' has been carved, followed by a dash, but no end date. *The use of marble and brass in the sculpture suggests appreciation and respect for the*

achievement of attaining equal voting rights. However, the use of materials also suggests that the work is built to stand against weathering and any other toll time can take. In fact, the text on the work, 'everything's different, nothing's changed', reminds the viewer that although things have changed drastically in the past 100 years, more change might be needed in order to attain equality of the sexes. The text itself is taunting, calling out to viewers to do everything in their power to prove it wrong.

An Inquiry into Existence Itself

*Tomorrow, we shall have to invent,
once more, the reality of this world."*

Octavio Paz

Sustainability is becoming an issue where artistic involvement and creative approaches in education and research could be crucial in creating much needed awareness of our place in the world and the context of our existence and behavior.

In society as a whole there is an increasingly pressing need to introduce new ways of thinking, new ways of seeing ourselves as part of a larger whole, where we all take responsibility for our actions and expressions.

And interestingly enough, throughout the centuries this is exactly what artists have been doing. Art – in its various forms – is often at the forefront of an exploration that maps unknown territories, that changes the way we see ourselves and our environment.

Thus artistic creativity is an inquiry into existence itself.

As Milan Kundera has pointed out in his writings on the creative act, existence from the perspective of creativity is “not that which has already happened, but rather the whole scope of human potential, all that man can become, everything that he is capable of”. According to this understanding, art maps out the discoveries of human existence and the capabilities of the human spirit.

It is from this idea of the artist as a cartographer of the unknown that the concept of artistic originality arises, since the artist is perpetually making new discoveries. The artist is a leader of an expedition to uncharted realms, pioneer of renewal in an ideological sense - that which Patti Smith simply refers to as the “development of the mind”. As a consequence of this fundamental demand for originality in art, for new discoveries and of new territorial claims, the working environment of the artist is at the frontier of constant uncertainty.

To be able to live up to its responsibilities regarding art and education, universities and art academies must also function close to the frontier of constant uncertainty in an ideological sense, if the dangers of stagnation and status quo are to be avoided.

Academic research and artistic projects contribute to a social structure in which a laboratory and center of scholarship are united. They also form an important social network and make the threads that make up our existence visible. In many ways it is the role of the art academy to create the tools and the moral attitude needed to make a difference in the world.

Fríða Björk Ingvarsdóttir,
Rector, Iceland Academy of the Arts

ANNA LÍNDAL

THE ART-NURSES;

ANNA HALLIN & ÓSK VILHJÁLMSDÓTTIR,

ÁSTHILDUR JÓNSDÓTTIR

GUÐRÚN GUNNARSDÓTTIR

HILDUR BJARNADÓTTIR

THE ICELANDIC LOVE CORPORATION;

EIRÚN SIGURÐARDÓTTIR, JÓNÍ JÓNSDÓTTIR

& SIGRÚN HRÓLFSDÓTTIR

JÓNA HLÍF HALLDÓRSDÓTTIR

KRISTÍN JÓNSDÓTTIR FROM MUNKAPVERÁ

ÓLÖF NORDAL

RÓSA SIGRÚN JÓNSDÓTTIR

(2016). Exhibition catalogue, Valo gallery at the Arktikum. Museum and Arctic Science Centre Rovaniemi. [Text and pictures from exhibition catalogue]. March 16. - April 17. 2016

LOOKING, back - around - forward

Dr Allyson Macdonald

Ásthildur Jónsdóttir is a person who thinks, constantly, about her surroundings whether natural or man-made. Not only does she deliberate on the spaces and places around her, she also moves back and forth in time, revisiting her own past and the people in it and moving ahead to speculate on what might be waiting for the next generation. In her pursuit of sustainability the artist would like the world to be shared, understood and conserved. Jónsdóttir brings ideals and qualities outlined by Bowers (2006) to her images of the value and strength of contemporary participatory art.

... what is now referred to as the commons also involves the sustainable management of the household—which includes the natural systems. The commons, as practiced over the time span of human history, represented what is shared in common and upon which life depends: water, fields, woodlands, animals, plants, air and so forth.

The commons also includes the symbolic systems of the culture-language, narratives, expressive arts, technological knowledge, norms governing moral

reciprocity, and so forth.

Nowadays we speak about “the tragedy of the commons which occurs when access to the commons breaks down, because someone in the group uses it for profit and reciprocal practices no longer work. Then the common resource is “enclosed”, given a monetary value and needs to be managed. In Jónsdóttir’s world the common resource of art and culture is still shared. People are not afraid of their emotions nor the views of other people. Through art and participatory practice, our lives and those in the future can be sustained.

Jónsdóttir’s participatory work is very much conceived in the spirit of the commons. In her work people have developed or will develop “participatory virtues” as they take part in society, in life, in nature and in cultural practices. The humans in Jónsdóttir’s work do not seek profit at someone else’s expense. Knowledge of all kinds is valued and respected and her people come to the community willing to learn. The spirit of the commons lives on. Enjoy the Colours of Rovaniemi, take a trip in time and space with MemoryBits, learn and reflect on Teach me something. Take care to Inhale – Exhale. Remember that in this world Everything Connects and the over-riding concept is collaboration.

Dr. Guðbjörg R. Jóhannesdóttir

Thoughts on Aesthetics and Art

Some might say that beauty lies within certain objective qualities, an ideal shape and dimension, for instance the golden ratio. This idea of beauty traces its origins to western ways of thinking, and there is no denying that there is something about beauty that brings out this mode of thinking. Beauty is subjective; it is a personal, emotional and often deeply affecting experience that touches our soul in a very profound way. But it is also objective, for there are certainly objects “out there” in the real world that are prone to invoking the subjective experience detailed above.

In place of simply widening the concept of beauty, then, it was marginalised by twentieth century aesthetics, and while beauty has been reappraised by the world of aesthetics in philosophy to a degree, it remains marginalised by its dismissal as skin-deep, a shallow avatar that we should all be obsessed with. Beauty goes far deeper than simple appearance, however; it comes from within, reaches out and creates relations (or makes us aware of those relations). In reality, beauty - in effect an experience that plays a part in defining our humanity and our quality of life - has generally not been up for much discussion in our society.

According to phenomenological understandings of beauty, the moment of beauty begins when your senses are captured; when your entire existence is captivated by your sensory input, all divisions are erased and you experience yourself as a relational being. You are open to receive meaning, rather than projecting your own meaning onto what is being perceived. Beauty is what we experience when we perceive only to perceive, when we look to the sky in admiration but not to ascertain the weather, when we behold a waterfall to let ourselves be captured by it, not to estimate the size of the dam needed to capture its power.

The beauty of a work of art resides no longer in a colour, form or texture that recalls the image of nature and of objects in such a way as to beautify them, but rather in the ability of the work (through the use of form, colour, texture, sound, touch and smell, to name but a few) to help us see objects and reality in a new light - and thereby permit us to experience the moment where our minds become open to new meaning.

Only when we transcend the narrow, polarised western definition of beauty, can beauty rise above its frivolous window dressing and once again become the core of artistic creativity and that of humanity itself.

For to experience beauty is to reconnect with that core of human existence that seems all too

often forgotten in daily life and the overstimulation of modern society: that man is a connective being that is affected by his environment as he affects it. Experiencing beauty opens our mind to the idea that there is a world beyond the self; a world that we share with others. Our need and our ability to share beauty, for instance through art, shows that the so-called "subjective" world is in fact "inter-subjective."

As human beings, we are not simple individuals, each one with access only to our own mind, which is in turn separate from our body and our environment, as western understanding dictates, based as it is on simple duality. On the contrary, we are relational beings, the divisions between ourselves and the other are ill-defined and fluid, and the true meaning of reality can be found in the interplay between subjectivity and objectivity; between us and reality or the coexistence we perpetually share with others. Experiencing beauty thus reveals the unbreakable and manifold bonds we share with the each other and the planet we inhabit.

In this context, we must emphasise an aesthetic upbringing to encourage the aesthetic sense the trains us to set the self aside and give full attention to the other as an independent being or entity. Beauty is not solely a source of pleasure and joy for us. Beauty can aid our development as ethical beings and enable us to forge better communities. With every added opportunity to experience beauty that we create, we increase our happiness and quality of life. Beauty does not only increase our sense of pleasure and well-being; it makes us human, for it helps us to understand ourselves and what it is to be a person connected with one's environment and other beings.

Let us place beauty on the pedestal it deserves and emphasise its important role in how we perceive our reality, our knowledge, our values, our well-being and the quality of our lives.

Ásthildur Jónsdóttir is an Icelandic visual artist

and art educator. She often works with installations in contemporary contexts and with the voices of participants from a selected place. Jónsdóttir works as an assistant professor at the department of Arts Education at the Iceland Academy of the Arts. She is also pursuing a joint PhD degree at the University of Lapland and the University of Iceland. In her doctoral research she is looking at the potential of contemporary art in education for sustainability. Her research interests include arts and cultural movements that support sustainable development and education for sustainability at all levels, within both formal and informal contexts.

Ásthildur Jónsdóttir has an MA degree from New York University's Steinhardt School of Culture, Education, and Human Development and an MEd degree from the University of Iceland. She has been involved in art and education for the last two decades, and works with people of all ages and backgrounds. She has developed curricula and taught in public and private schools at both lower and upper secondary levels as well as in colleges and community centres in Iceland, Geneva, Switzerland and New York City.

Environmental conservation and sustainable development are among the key challenges faced by countries and communities across the world. This exhibition highlights the significant role of the arts and culture in addressing the most urgent issues of our times and the focus of the exhibition is participation, both in terms of participative art and participatory art. The latter describes artworks in which the artist uses participation as a component of art making. In participative projects, however, participation is the project and the artist creates the framework allowing for participation with no preconceived ideas of the outcome. The focus is not on the fact that people participate, but on the fact that participation is the main principle governing human interactions.

The works in the exhibition *LOOKING back - around - forward*, make use of aesthetic, embodied, experimental and emotional ways of creating

knowledge. The exhibition presents findings from my arts-based doctoral research that takes a participatory, collaborative approach to the importance of working together to protect nature. All living things depend on each other and all life can be impacted by even small changes in the environment. Humans can have an effect on nature in many different ways and it is important for us to create a system where we produce as little waste as possible.

The journey towards sustainability requires the notion that we do not and cannot take this path alone. This exhibition gives the visitor the possibility of finding and connecting with corresponding spirits who share a common understanding of the need for personal responsibility and the notion that art can be, and is, a potent agent of change. I hope this exhibition will help you to deepen your understanding of its topic; sustainability and participation. Hopefully you will immerse yourself into it and ask yourself what you can do to find a balance between our complex ecology and well-being.

Colours of Rovaniemi ***Painted panels and photographs***

In this exhibition the value of recognising the important and changing role of culture in contemporary society is fostered. The work *Colours of Rovaniemi* is a reflection on dialogues with different community members from Rovaniemi. The focus is on Rovaniemi and the personal experience of the local people. Jónsdóttir interviewed seventeen individuals and asked them to tell her about places within Rovaniemi they believe people could enjoy better. The places are very different and represent people's perceptions of alternate spaces, alternate routes, journeys through the city and the much needed intermittent spaces of pause. Most of the places are connected to water either the river or lakes.

The same people in Rovaniemi were asked to choose one card of colours out of 314 colour samples, a colour that makes them feel good. The colours



comprise most of the colours we see in the world around us. The samples included 34 saturated colours, 100 clean, light colours, 47 dark, deep colours, 114 pastels, 17 greys from dark to light, black and white.

Most of the participants chose colours in a blue tone and connected them to Finnish light and nature. They also selected places within Rovaniemi which they find interesting and with potential for people in Rovaniemi to enjoy. When peeping through the surface of the works you find their places. The work reflects on the participants' sense of Rovaniemi. Sense of a place grows from identifying oneself in relation to a particular piece of land. Sense of a place is also a combination of the characteristics that makes a place special and unique, involving the human experience in a landscape and in the local environment. Viewers can consider what they have in common with these seventeen examples. The aim of the work is to reveal a new depths of Rovaniemi, to engage the viewers or inhabitants, rather than abstracting that place into generalisations that apply just as well to any other place.

Lesson from the Geese: Dreaming of collaborative protection of our waters
Knitted installation, yarn, feathers, 2016

Lesson from the Geese: Dreaming of collaborative protection of our waters reflects on empathy in its diverse forms. Every fall thousands of geese fly from Iceland to the south to escape the cold winter. Geese have discovered that they can reach their destination more quickly and with less energy expended when they fly together in a V-shape formation with one alternating goose in the center leading and all the other geese trailing behind in two lines. If we humans would work on a similar collaboration towards sustainable development it is likely that we might reach our goals faster. When people work together harmoniously on teams, sharing common values and a common destination, they all arrive at the destination quicker and easier, because they are lifted up by the energy and enthusiasm of one another. Geese rotate

leadership. The goose flying in the front of the formation has to expend the most energy because it is the first to break up the flow of air that provides the additional lift for all of the geese who follow behind. This rotation of position happens many times in the course of the long journey to warmer climates. By the same measure a team of humans is functioning well when all members of the team actively contribute with their expertise, experience and different perspectives. Consequently, on good teams, everyone has the opportunity to contribute and flourish.

Scientists speculate that geese honk to communicate with each other during their long flight. Similarly, when working on teams, it is exceedingly important for each team member to communicate regularly with all the other team members.

Geese help each other. If one goose becomes ill and drops out of the formation, two other geese will fall out of formation and remain with the weakened goose. Likewise, human teams work best when they do more than just work together, but care for the well-being of each other.

Teach me something **Video and photographic installation,** **2015 - '16**

Teach me something focuses on sharing local and Nordic knowledge between generations. The process reflects on generating knowledge and experience passed on from our older generations. How do we use and reflect on the common knowledge and become open to new knowledge?

A dialogue is created when making things together translates into understanding. The

installation shows how northern Finnish culture translates to Iceland.

Everything Connects **Participatory installation, 2016**



In *Everything Connects* Jónsdóttir invites you to co-produce a new piece of work as you are invited to reflect on the same concepts as in the other works of this exhibition. Here the line between the participants and the artist has been blurred. The work includes a space that is designed for participation involving a number of variables, where individuals' behaviour is self-directed as they are reminded that everything around us exists together in a delicate balance. The humans are at the top of the food chain; therefore it is important that we understand the balance between nature and ourselves. We need to respect the life around us from the tiniest insect to the tallest trees. We need to consider the life of the planet as a gift. We should consider our reasons for utilizing natural resources and think of them as the organic matter of the earth viewed as a sacred circle of life, but not as linear growth for human satisfaction.





Integrated view of the world: Collaborative perspectives
Participatory installation, 2016

The participants were asked to follow some guidelines resulting in the creation of the work which Jónsdóttir directed. The focus of this participatory work was the joint creation of a mandala. The mandala is a profound and universal symbol of continuity, integration and interconnectedness because in the beginning is the end and in the end is the beginning. The word mandala represents wholeness, and can be seen as a model for the organizational structure of life itself. Recognizing what we have in common, while respecting our differences, increases our capacity for creating peace.

The work is created with university students from the University of Lapland and the Iceland Academy of the Arts and with different community groups from Rovaniemi.

The aim of the mandala is to provide a platform for a unifying experience in which people can express themselves individually within a unified structure. Participating in the mandala has the potential to change how we see ourselves and our planet. Because making a mandala is a discipline for pulling different, separated aspects of your life together, finding a center.

Depending on individual interest the reflections are diverse. Working together the participants create through art an artifact that brings them together to create something larger than themselves while honoring the uniqueness of the individual and celebrating the benefits and gifts of a collective experience.

Dialog with my foremothers
Installation made out of felted wool and
sound, 2016

Dialog with my foremothers reflects on Icelandic cultural identity, which is largely based on the country's ever present and past nature. In the work the artist is interested in exploring the potential of shared cultural wisdom handed down through generations on how to live sustainably with a landscape, knowledge which is rapidly disappearing and is key to our survival and how one should learn to live more sustainably.

The work is immersed in the interconnectedness and complexity of art and life, humans and nature.

How can we develop earth-centred relationship with the planet? Recognising the nature as an equal partner with humankind. Our ancestors focused on maintaining the balance within nature, the environment and the ecosystems. Changing to earth-centered relationship with Nature instead of the prevailing human-centered paradigm. We need to rely on the most current scientific information to achieve sustainable development, in light of the fundamental interconnections between humanity and Nature.





MemoryBits **Installation, 2013**

The uniqueness of a place can be connected to someone who feels a sense of belonging to it. In this case the place explored is Jónsdóttir childhood home. A place is the result of processes and practices. It is constructed by people doing things and in this sense is never finished, but constantly performed. There is a connection between a place, memory and identity.

The work *MemoryBits* is rooted in the idea of memories and a place. Collective memory in a place is no more than an element in the perpetuation of a particular social order that seeks to inscribe some memories attached as if by nature. A place is not just a thing in the world, but a way of understanding the world; to connect to one's own place, experience and values through critical reflection.

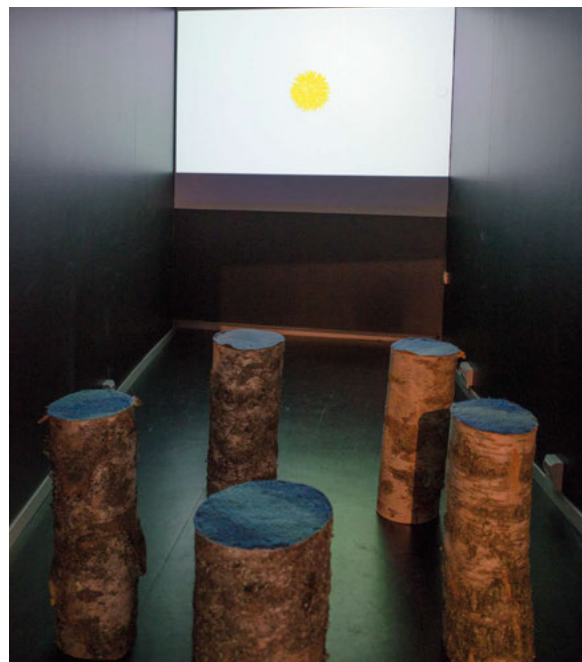
Inhale, Exhale **Video , 2016**

Inhale - exhale is built on visitors' interaction. The work creates a setting for the viewer to open their attention to the present. The work requires the audience to observe their thoughts and feelings from a distance, without judging them good or bad. It focuses on the moment and on awakening to experience when following the rhythm of the breathing in the video installation, deep, slow, quiet and regular. Although breathing is involuntary, it occurs without our thinking about it. We also have some degree of control over our

breathing, which is an interesting metaphor for the control we have over our life and actions.

Sit in a comfortable position, reasonably upright and relaxed, settle into your body and into the present moment. Bring to mind a place that naturally brings happiness to your heart. Let yourself feel what it's like to be in that place. Allow yourself to enjoy your memories. Sit quietly in your own body, savouring the good will and compassion that flows naturally from your own heart.

As you exhale, send out compassion to all living beings. Continue breathing compassion in and out. Try to set your self aside and give full attention to the other as an independent being or your place. Think of your and others experience of beauty in the place. Beauty does not only increase our sense of pleasure and well-being; it makes us human, for it helps us to understand ourselves and what it is to be a person connected with one's environment and other beings. Occasionally scan your inner landscape for any distress and respond by inhaling compassion for yourself and exhaling compassion for those who need it.



CONSENT LETTER

Dear artist

As you know I have been working on my PhD study along with my professional duties at the Iceland Academy of the arts. This doctoral project is centred on the potential of art in education for sustainability (EfS). The study takes place in two universities, one in Iceland, School of Education, University of Iceland and one in Finland from faculty of Art and Design, University of Lapland. In the methodology for this research I have a double identity as I adopt methods from both educational inquiry and art-based inquiry. I intertwine an art-based research and an action research in order to explore my own activities at the Iceland Academy of the Arts and then to explain how such work contributed to my professional practice as an art teacher educator, artist and curator in the field of EfS. At the same time I am constantly scanning my activities for examples of the potential of art. The process is complex and demands constant reflections.

My practice as a teacher educator has been shaped by an interest in socio-cultural topics; on the one hand at a global level working on developments and changes towards a more sustainable society, and on the other as personal intimate changes towards cultural sustainability. In different courses, I have provided settings for the student teachers at IAA to proactively build their theory of practise towards issues related to sustainability, allowing them to discover ways towards a sustainable society through education. The most successful component in teaching EfS to the student teachers has been the emphasis on student driven initiatives.

In my research approach I am both using action research and art based research in order to gain better understanding about EfS and learning through art making, writings, participation and qualitative investigation, including for example, taking semi structure interviews and fostering participation in my artistic processes.

I am writing to get your permission to reflect on your artistic actions in connection to the courses Art and Education for Sustainability and Kennslufraði I.

There are minimal risks involved as a participant in this research project. It is extremely important to me that student identity be kept strictly confidential. Full discretion is guaranteed, all names will be altered and no information will be traceable unless you want to be named by your name when I discuss your artworks and artistic actions.

Your participation is completely voluntary. If you decide to withdraw from participation, there will be no effect or negative consequences for you.

Your signature indicates that you have read this consent form, have had an opportunity to ask any questions about your participation in this research, consent for your participation. You will receive a copy for your records.

Sincerely, Ásthildur Jónsdóttir

___ I would like to be named by my name
when you discuss my artwork

CONSENT LETTER

Dear artist & art teachers!

As you know I have been working on my PhD study along with my professional duties at the Iceland Academy of the arts. This doctoral project is centred on the potential of art in education for sustainability (EfS). The study takes place in two universities, one in Iceland, School of Education, University of Iceland and one in Finland from faculty of Art and Design, University of Lapland. In the methodology for this research I have a double identity as I adopt methods from both educational inquiry and art-based inquiry. I intertwine an art-based research and an action research in order to explore my own activities at the Iceland Academy of the Arts and then to explain how such work contributed to my professional practice as an art teacher educator, artist and curator in the field of EfS. At the same time I am constantly scanning my activities for examples of the potential of art. The process is complex and demands constant reflections.

I am writing to inform you that I am including in my thesis my reflections on general artistic actions that took place in connection to the courses Art and Education for Sustainability and Kennslufræði I (the project in the Botanical Garden). I send this letter to everyone even though I only refer to few individuals in the thesis.

Now when writing the synopsis, I reflect on activities that you as student teachers might have taken part in. It is extremely important to me that student identity is kept strictly confidential. Full discretion is guaranteed; no information are traceable. When discussing activities in connection to a specific person I refer to a student teacher and or to pupils (school children). In some cases when discussing artworks I have different content letter you are not referred to in the thesis.

Now my research journey is coming to an end and the thesis will be available from end of May in the Library at University of Iceland (School of Education) Háteigsvegur, 105 Reykjavík.

If you have any questions please contact me either by phone (6161648) or email: astajons@lhi.is.

With warm regards

Ásthildur Jónsdóttir

EDUCATION FOR SUSTAINABILITY AT IAA, ART EDUCATION

