Western Norway
University of
Applied Sciences

Playing, Sensing, and Meaning

An ethnographic study of children's self-governed play in a Norwegian nature kindergarten

Jostein Rønning Sanderud

Thesis for the degree of Philosophiae Doctor (PhD) at
Western Norway University of Applied Sciences

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Scientific environment

I have participated in several scientific communities and networks throughout the course of this doctoral project.

Professor Kirsti P. Gurholt (Norwegian School of Sport Sciences) and Professor Vegard F. Moe (Western Norway University of Applied Sciences) have been my supervisors, providing both critical and supportive guidance through the challenges of my PhD journey.

I have participated in Western Norway University of Applied Sciences' PhD programme "*Bildung* and Pedagogical Practices". The programme has contributed important theoretical and contextual perspectives to my project, particularly with regard to the concepts of *Bildung* and "learnification".

The mid-term evaluation was carried out with Professor Anne Greve and Professor Elin E. Ødegaard as opponents. This discussion led me to rethink some of my initial ideas.

I have participated in the research group "Learning, Friluftsliv, and Physical Education" and the research centre "KINDKnow – Kindergarten Knowledge Centre for Systematic Research on Diversity and Sustainable Futures".

I have presented papers at several national and international conferences within "Outdoor Education" and "Early Childhood Education Research" throughout the project.

Drafts of the articles have undergone critical review and received constructive comments from blind reviewers that have helped to improve the manuscripts.

I have been employed at Western Norway University of Applied Sciences (HVL) throughout the project. Parallel with my research, I have lectured on the preschool education programme and Outdoor Studies [Friluftsliv] programme. I have also represented HVL as an active participant in a regional professional network for kindergarten teachers [Fagnettverk for barnehager i Indre Sogn].

It is worth mentioning that the COVID-19 pandemic has to some extent led to difficulties working from home, reduced access to libraries, and conference cancellations.

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Sogndal 2022
Jostein Rønning Sanderud

Abstract

In this study, I investigate what natural environments mean for children's self-governed play and how children create meaning during self-governed play in natural environments.

Children's play in natural environments is a significant scientific issue today, receiving attention from various disciplines. A growing body of studies find benefits for children's health, motor development, perception of risk, and growth in outdoor play.

Playing in and with outdoor materials, such as sticks, trees, mud, and water, has historically been a core element in many children's play all over the world. This kind of play is often associated with a good childhood in the Nordic countries and has been an important aspect of family upbringing for decades. It is an essential part of formal pedagogical practice in Nordic kindergartens and is still emphasised in the framework plan. However, academic discourses and educational policy are important in shaping the values that teachers and politicians associate with children's outdoor play in kindergartens. "Risky play", "physically active play", and educational policies emphasising more goal-oriented learning are examples of hegemonic discourses that may exert pressure on children's self-governed play in natural environments through expectations of securing children's health and goal-oriented learning. At the same time, we know little about what self-governed play in natural environments during different weather conditions and seasons may mean for children's growth.

The study's theoretical framework combines inspiration from the following perspectives: 1) "Dwelling" describes how people and environments are closely intertwined and mutually formative (Ingold, 2000). 2) In his *Phenomenology of perception*, Merleau-Ponty (2014) argues that people are first and foremost bodies in the world, and it is through the body that they experience the world. 3) By introducing the concept "affordances", Gibson (2014) attempts to explain how elements in the environment invite people to certain movements and actions. 4) *Bildung* is understood not only as a lifelong acquisition of cultural and physical

experiences, but also a common development of citizenship (Biesta, 2016; Gurholt, 2010; Løvlie, 2002).

The project's main research question is: What does natural environments mean for children's play and how do children create meaning during play in natural environments?

To investigate the research question, I carried out two ethnographic field work periods (Fangen, 2010; Hammersley & Atkinson, 2019) inspired by sensory ethnography (Pink, 2009). The field work periods were carried out in a nature kindergarten in rural Western Norway in the winter and summer of 2018. I used participatory observation with a play-along approach (Sanderud, 2020) to understand what nature play can mean for children's self-formation. Additionally, I used field talks and a photo interview during the field work. Fangen's (2010) three levels of interpretation guided analysis of the field work. The first level is about describing observations in detail. The second level adds relevant context(s) of the observations, what others may refer to as "thick descriptions". The third level, finally, is about critically interpreting the participants' needs, meanings, agendas or motives.

This thesis consists of four sub-studies published as peer-reviewed articles in international scientific journals. In Article I, I developed the theoretical framework of this project, including the concept of "curious play" based on reanalysed data from my master's project. Additionally, I developed the guiding hypothesis that curiosity is an inner driving force in children's play. Article II provides insights into how natural environments always change due to weather, seasons, and children's usage of these environments. Additionally, Article II provides insights into what changes in the environment may mean for children's play, exploration, and growth during self-governed play in severe winter environments. Article III shows how teachers condition and facilitate the relationships inherent in children's play with using a sensitivity towards children and places conceptualised as "didactic sensitivity". Article IV develops the methodological approach for this project, emphasising that the researcher may play along with the children to gain insight into the play.

The three main insights in this dissertation are: 1) Children playing in natural environments are curious, competent, and exploratory subjects who investigate and discover existential aspects of themselves and their surroundings. Thus, children experience meaningful situations here and now. 2) The natural environment that children play in is dynamic and partly unpredictable, in the sense that it is constantly changing under weather, seasonal variations, and the children's play itself. 3) Children embody existential understanding about their capabilities and surroundings while playing in relationships with one another and natural environments. They may experience what they can and cannot do, what opportunities they have, and how they may influence their physical and social environment.

A consequence of these insights is that teachers need to consider qualities of both the particular environment and individual children’s needs and interests when carrying out pedagogical arrangements in natural environments.

This study shows that children are competent and actively create meaning during self-governed play in and with natural environments and current pedagogical frameworks. This implies that teachers have to understand what relationships children find attractive to engage with.

Sammendrag (Norwegian abstract)

I denne studien undersøker jeg hva naturmiljø betyr for barns selvstyrte lek og hvordan barn skaper mening mens de leker i naturmiljø.

Barns lek i naturmiljø er et internasjonalt forskingsfelt som får oppmerksomhet fra ulike disipliner. For eksempel så finner studier fordeler for barns helse, motoriske utvikling, risikopersepsjon og danning.

Lek med naturmaterialer som snø, is, vann, og pinner har historisk sett vært kjerneelement in barns lek over hele verden. Det er fortsatt viktige element i leken til mange barn i Norden og assosieres ofte med en god barndom. Lek ute har historisk sett vært en viktig del av nordisk barnehagepedagogikk og blir fortsatt vektlagt i Rammeplanen. Samtidig bidrar sentrale diskurser, som for eksempel "risikolek", "fysisk aktiv lek" og forventninger om mer målstyrt læring, i barnehagefeltet til hvilke verdier pedagoger, politikere og foreldre gir "selvstyrt lek". Sett sammen kan diskursene bidra til å ta tid fra barns selvstyrte lek i naturmiljø av forventninger om å "sikre" barns helse og læring. Samtidig vet vi lite om hva selvstyrt lek i naturmiljø under ulike værforhold og årstider kan bety for barns danning.

Studiens teoretiske rammeverk består av perspektivene: 1) "Dwelling" som beskriver hvordan mennesker om omgivelser er tett sammenflettet og gjensidig formende (Ingold, 2000). 2) I boka "Phenomenolgy of perception", argumenterer Merleau-Ponty (2014) for at mennesker først og fremst er kropper og det er igjennom kroppen verden erfares. 3) Med begrepet "affordances" forsøker Gibson (2014) å forklare hvordan elementer i omgivelsene kan invitere til ulike bevegelser. 4) "Danning" forståes som en livslang tilegnelse av kulturelle- og kroppslige erfaringer, men også en felles utvikling av medborgerskap (Biesta, 2016; Gurholt, 2010; Løvlie, 2002).

Prosjektets hovedproblemstilling er: Hva betyr naturmiljø for barns lek og hvordan skaper barn mening mens de leker i naturmiljø?

For å undersøke problemstillingen ble det gjennomført to etnografiske feltarbeid (Fangen, 2010; Hammersley & Atkinson, 2019) inspirert av "sensory ethnography"(Pink, 2009). Feltarbeidene ble gjennomført i en naturbarnehage ruralt

på Vestlandet vinteren og sommeren 2018. I løpet av feltarbeidene ble det benyttet deltakende observasjon med feltsamtaler og foto-intervju. Det ble også benyttet en "play-along" tilnærming (Sanderud, 2020) for å utvikle en forståelse av hva naturlek kan bety for barnas danning. Fangen's (2010) tre tolkningsnivåer ledet analysen av datamaterialet. Det første nivået handler om å skrive detaljerte beskrivelser av observasjonene. The andre nivået legger til kontekstuelle lag på hendelsene, tilsvarende hva mange omtaler som "tykke beskrivelser". Det tredje nivået handler om å kritiske vurdere informantenes behov, meninger, agenda og motiver.

Avhandlingen består av fire delstudier som er publisert som fagfellevurderte artikler i vitenskapelige journaler. I Artikkel I utvikler jeg prosjektets teoretiske rammeverk som blant annet består av konseptet "Nysgjerrig lek" (Curious Play). Artikkelen er basert på en reanalyse av data fra mitt mastergradsarbeid. I tillegg utviklet jeg en overordnet hypotese om at barns nysgjerrighet er en viktig drivkraft i barns lek. Artikkel II belyser hvordan naturmiljø hele tiden forandrer seg etter påvirkning av vær, sesonger og barns lek. I tillegg belyser Artikkel II hva forandringer i naturmiljø betyr for barnas lek, utforskning og danning mens de leker på egenhånd i krevende vintermiljø. Artikkel III viser hvordan pedagogene i barnehagen organiserer og skaper vilkår for de relasjoner som barna leker i med en sensitivitet for barn og steder. Tilnærmingen konseptualiserer jeg som en "didaktisk sensitivitet" (Didactic Sensitivity). I Artikkel IV utvikler jeg den metodologiske tilnærmingen til prosjektet som vektlegger at forskeren kan delta i barnas lek for å skape innsikt i leken.

Avhandlingens viktigste funn er at 1) lekende barn i natur kan forstås som nysgjerrige, kompetente og utforskende subjekter som undersøker og oppdager sider ved seg selv og omgivelsene. 2) Naturmiljøet barna leker i er dynamisk og delvis uforutsigbart ettersom det hele tiden forandres av vær, sesongvariasjoner og barnas lek. 3) Barn kroppsliggjør eksistensielle forståelser om seg selv og omgivelsene mens de leker. De kan gjøre seg erfaringer om hva de kan og ikke kan, om hvilke muligheter de har til å påvirke de fysiske og sosiale omgivelsene sine. Kort sagt kan de gjøre seg erfaringer om hvem de er, hvem de kan bli og hva omgivelsene består av.

Siden barn formes i interaksjon med omgivelsene, blir en implikasjon av denne studien at pedagoger må vurdere både kvalitative sider ved miljøet og det enkelte

barns behov og interesser når de planlegger og gjennomfører pedagogiske opplegg. Barn er kompetente personer som aktivt skaper mening igjennom (bevegelses)lek i samspill med miljøet og de gjeldene pedagogiske rammer. Dette gjør det viktig at pedagoger forstår hva barn finner attraktivt å engasjere seg med.

List of publications

Article I

Gurholt, K. P., & Sanderud, J. R. (2016). Curious Play: Children's Exploration of Nature. *Journal of Adventure Education and Outdoor Learning,* 16(4), 318-329. doi: http://dx.doi.org/10.1080/14729679.2016.1162183

Published online 6. April 2016

Article II

Sanderud, J. R., Gurholt, K. P., & Moe, V. F. (2020). "Winter children": an ethnographically inspired study of children being-and-becoming well-versed in snow and ice. *Sport, Education and Society*, 25(8), 960-971. doi: 10.1080/13573322.2019.1678124.

Published online 17. October 2019

Article III

Sanderud, J. R., Gurholt, K. P., & Moe, V. F. (2021). Didactic sensitivity to children and place: a contribution to outdoor education cultures. *Sport, Education and Society*. doi: 10.1080/13573322.2021.1966409.

Published online 15. August 2021

Article IV

Sanderud, J. R. (2020). Mutual experiences: Understanding children's play in nature through sensory ethnography. *Journal of Adventure Education & Outdoor Learning*, 20(2), 111-122. doi: 10.1080/14729679.2018.1557058

Published online 12. December 2018

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Contents

Chapter 1: Introduction

The role of nature in the lives of children is a significant international issue today (Frost, 2010; Halldén, 2009, 2011). Researchers have shown that engagement with natural environments has a range of different health benefits (Chawla, 2015, 2020; Herrington & Brussoni, 2015) and benefits for motor development (Fjørtoft, 2001). In parallel, substantial research over the last few decades on sports, health, and outdoor education has turned attention towards place and material surroundings (e.g., Hussain, 2018; Monforte, 2018; Taylor et al., 2018; Wattchow & Brown, 2011; Änggård, 2016). Recognised international research values outdoor education (e.g., Frost, 2010; Halldén, 2011; Waller et al., 2017) that is place-based (Wattchow & Brown, 2011), play-based (Knight, 2009) and a site for growth and self-formation (Gurholt, 2014). Yet, the interest in investigating children's engagements with natural environments through outdoor play and education (Bartnæs & Myrstad, 2022; Myrstad et al., 2021; Myrstad & Sverdrup, 2019; Stevenson et al., 2018) has begun to improve our knowledge of how children in different contexts make sense of natural environments in interactions with their surroundings. There is a need for studies exploring children's understandings and perceptions of natural environments (Adams & Savahl, 2017).

This study investigates what nature may mean for children by exploring children's self-governed play in natural environments in a Norwegian kindergarten[1]. It is designed and carried out in a social and cultural context, which I will illustrate in this chapter. The chapter thus adds contextual layers to the sub-studies and connects them with common "thick descriptions". Additionally, I show this study's international relevance by connecting it to pedagogical, political, and academic issues.

First, I describe my narrative approach to position the study in the field. Second, I present a sociocultural understanding of nature and its sociocultural significance in

[1] I use the term "kindergarten' throughout this thesis because the term "kindergarten' is used in the Framework Plan for Kindergartens (FPfK) (Ministry of Education and Research, 2017).

western, including Norwegian, society. Third, I outline an educational-political discourse emphasising "more" learning in European educational systems in general and the Norwegian educational system in particular, including kindergartens. Fourth, I present and discuss two hegemonic contemporary academic discourses: 1) "Risky play" emphasises "risk" and physical danger as central components in children's play; 2) "physically active play" emphasises children's movement and play as important for better health later in life. Fifth, I provide a brief insight into my research journey.

1.1. Positioning the project in the field

Over the last ten years working as a lecturer at the Western Norway University of Applied Sciences (HVL), I have searched for literature related to children's perspectives on interactions with natural environments. This literature stems from different fields, such as outdoor education, children's geography, and early childhood education. I have combined different search strategies, including searching in databases (e.g., ERIC, Academic Search Elite, Oria, and Google Scholar), scanning reference lists, searching for other publications from noteworthy authors, and asking members of my research community for relevant literature. The readings have been driven by an interest in investigating and understanding the significance of children's interactions with natural environments.

Throughout the reading, I have learned about different theoretical and methodological perspectives relevant to understanding children's interactions with natural environments. At the same time, I have identified lesser-investigated areas such as the child's perspective in outdoor play. An area with some noteworthy contributions (e.g., Merewether & Fleet, 2013; Tillmann et al., 2019; Tunstall et al., 2004).

The readings have introduced me to posthumanism and new materialism (e.g., Arvidsen, 2018; Cutter-Mackenzie-Knowles et al., 2018; Hackett & Rautio, 2019; Rautio, 2013a, 2013b, 2014). Posthumanism and new materialism share my interests in interactions between people and their surroundings (Barad, 2003; Fox & Alldred, 2017). Other scholars have read Tim Ingold as a new materialist (Conty, 2018), although Ingold himself is critical of new materialism (Apter et al., 2016, p. 59; Ingold, 2011, 2013). My intention is not to engage in a discussion of Ingold or

posthumanist discourses per se. My concern is rather to create a theoretical framework to investigate, analyse, and understand what play in natural environments may mean for children's growth. By drawing on different, yet overlapping, theories and studies, I have combined my data with the breadth and variation offered by possible interpretations to avoid ending up confirming one grand theory (cf., Alvesson & Sköldberg, 2018, p. 332). Rather, I intend to contribute to the field with a perspective developed through this project.

The readings have helped me identify and critically discuss the discourses outlined in this chapter: "risky play" (e.g., Sandseter, 2009), "physically active play" (e.g., Alexander et al., 2019; Piggin, 2019; Aadland et al., 2020), and the educational policy emphasising predefined goal-oriented learning (e.g., Biesta, 2010; Leather, 2018; Pimlott-Wilson & Coates, 2019). However, in light of my experience as a leader at family summer camps (see Chapter 1.4.) and as a teacher, I hypothesised that children's play in natural environments is not necessarily driven by a search for physical danger or health benefits later in life. Accordingly, I aim to add critical insight into the two hegemonic discourses above by investigating children's interactions with natural environments close to children's perspectives.

My approach to position this study shares characteristics with a narrative literature review. A narrative literature review is, according to Clark et al. (2021, p. 84), the most common type of literature review in the social sciences and summarises the key literature selected by the author. The narrative review "aims to arrive at an overview of a topic by conducting a reasonable comprehensive assessment and critical interpretation of the relevant literature" (Clark et al., 2021, p. 84). This means I have searched for and discussed relevant literature throughout the project and have written out my understanding of the field in which I am positioning this project. The narrative approach is suitable because I am entering a transdisciplinary field. Additionally, the approach recognises that literature reviews are continually ongoing processes that aim for reasonably comprehensive coverage of the field. The approach has helped me find ways to frame my insights and engage in ongoing debates.

1.2. Nature and childhood

An international issue

For centuries, children around the world have engaged in autonomous play in vacant lots. Makeshift play sites not intended for children (e.g., construction areas, vacant lots, and junk heaps in urbanised areas) gave children the freedom to do things that they could not do elsewhere in a crowded society. They could build houses or dens, dig holes, or play with different materials such as sand, soil, water, and mud (Frost, 2010). However, this type of autonomous play in rural Norway was often situated in natural environments with minimal or no fixed play equipment, often with little adult intervention (Halldén, 2011; Skår & Krogh, 2009)

From the end of the twentieth century, the nature of children's play shifted from free, spontaneous, self-directed outdoor play in an outdoor environment to play with manufactured play equipment, adult-led activities, and digital play indoors in Norway and other western countries (Frost, 2010; Skår et al., 2016). In more or less the same period, the everyday lives of Norwegian children have become more organised and more controlled by adults, probably with the best intentions for children's development, care, and safety (Frønes, 2018). Contemporary scholars express concerns about the negative consequences of disconnectedness with natural environments, such as reduced physical activity, health problems, and reduced environmental awareness (Louv, 2009; Sandberg, 2012)[2].

The assumption that a close connection exists between a good childhood and time spent in connection with natural environments is manifested through a range of studies arguing for reconnecting children with nature, mainly focusing on positive emotions of connectedness (Chawla, 2020). Studies argue that play in nature has a range of positive psychological and physical health benefits for children (Tillmann et al., 2018; Tim, 2014), including increased well-being (Chawla, 2015; McCormick, 2017; Sando, 2019), general development, and increased physical activity levels (Herrington & Brussoni, 2015) and motor skills (Fjørtoft, 2000). Nature and play are

[2] As a digression, it is worth mentioning that ideas of nature as being important for children's growth is relatively new, stemming from the ideas of Jean Jacques Rosseau (1712 – 1778) and Friedrich Fröbel (1782 – 1852).

even recognised as the "'secret ingredients' of children's health and development" (Herrington & Brussoni, 2015, p. 481).

I do not question the findings above, but I question whether it is just to let children go out in natural environments on their own to achieve the various benefits. Few of the studies explicitly describe in depth what children are supposed to do in nature to gain these benefits. In this project, I attempt to go beyond the idea that natural environments are inherently good in themselves and explore how children create meaning about themselves and their surroundings.

Few studies explore children's embodied engagement with places, such as natural environments, in kindergartens. However, a few notable contributions are exploring children's embodied interactions with natural environments (Bartnæs & Myrstad, 2022; Myrstad et al., 2021; Myrstad & Sverdrup, 2018, 2019).

Nature and childhood in Norway

Play in and with natural environments is a core element in a Norwegian narrative that celebrates nature and is considered a central element of a good upbringing (Gurholt, 1999; Odden, 2008). The idea may be traced from Romantic ideas from the French philosopher Jean Jacques Rosseau (1712 – 1778) gaining influence in Norway around the 19th century. At that time, Norway became an independent nation, and cultural celebrities started to construct a Norwegian identity through the arts, focusing on wild nature (Goksøyr, 1994; Slagstad, 2008). Today, nature and activities in nature convey important aesthetic experiences and a joyful lifetime for many adults in Norway (Gurholt, 2014). In Norwegian everyday language, nature is often closer to the "outdoors" in general rather than any "vast wilderness" untouched by people.

The connectedness between children and nature is expressed, for example, in white papers and through children's literature and TV series. Goga (2019) shows, through an analysis of award-winning Norwegian picture books (published between 1948 – 2010), that children are often situated in the outdoors close to home or in typical Norwegian natural environments, characterised by fjords, mountains, or large forests. Further, Goga connects these environments to typical environments for

growth, enculturation, and acting out to become empowered and independent individuals. A recent example “The Wilderness Children”, is a popular TV series on NRK, which presents a celebratory image of children, nature, and outdoor activities (Gurholt, 2018).

Today, the Norwegian government assumes that kindergartens have a significant role in recruiting participants for active and healthy living in natural environments (Klima- og miljødepartementet, 2016, 2018). A recent white paper entitled “*Friluftsliv*: Nature as a source for better health and quality of life” [Friluftsliv: Natur som kilde til helse og livskvalitet], adds value to nature as a source of better health and quality of life. The white paper presents play and activities in natural environments as an existing part of Norwegian culture and national identity and explicitly extends the cultural status of outdoor activities. At the same time, Broch (2018) shows how a mixed ethnic group of youths in Norway have an ambivalent relationship to outdoor activities.

Nordic studies scrutinising ready assumptions and perceived changes have recently been published internationally (e.g., Arvidsen, 2018; Fjørtoft, 2001; Gundersen et al., 2016; Lysklett & Berger, 2017; Rautio, 2013b; Samuelsson & Carlsson, 2008; Storli & Hansen Sandseter, 2019; Änggård, 2016). Gurholt (2014, p. 244) calls for perspectives on *Bildung,* on outdoor activities that are sensitive to the “ethics, emotions and politics of young people’s lived experiences and their viewpoints”. Through this project, my exploration of children’s *Bildung* during play in natural environments responds to her call.

Although nature is a comprehensive and varied concept, this project is ontologically founded on the understanding that meanings, practices, and functions of environments grow in the relationship between subjects and environments. They are inspired by narratives, practices, and discourses in the current context (cf., Ingold, 2000). In this case, teachers, children, political frameworks, playgrounds, contemporary sociocultural understandings of nature, and outdoor education are examples of relationships that frame children’s embodiments and conceptualisation. Following this line of thought, children form understandings of nature related to how they utilise its features within a specific context, rather than the features as such.

Thus, nature does not have inherent meanings or pedagogical functions to be extracted, but is rather subject to continual negotiations through practice.

I refrain from using the term "nature" in this thesis because the term may evoke different values and romantic ideals among readers. Instead, I use "natural environments" to avoid unwanted annotations.

Play in natural environments in Norwegian kindergartens

In Norway, the national curriculum *Framework Plan for Kindergartens* (FPfK) regulates activity in all kindergartens. It gives guidelines to promote connectedness with natural environments and to gain diverse experiences in natural environments. For example, it states that one of the key values of Norwegian kindergarten policy is that "Children shall be given outdoor experiences and ability to discover the diversity of the natural world, and kindergartens shall help children to feel connectedness with nature." (Ministry of Education and Research, 2017, p. 11). In addition, one of the goals in the FPfK is that children are to experience all types of weather conditions and different seasons (Ministry of Education and Research, 2017).

The FPfK allows kindergartens to have different prioritised areas, such as sports and outdoor education (Ministry of Education and Research, 2017). The number of kindergartens that prioritise outdoor education increased during the 1990s to 5%-10% of all kindergartens in Norway (Lysklett, 2017). The increase may be understood as an extension of cultural traditions and a counteraction to a decline in nature play among children and a response to governmental expectations.

Outdoor play has been and continues to be an important approach to outdoor time in Norwegian kindergartens. Children in Norwegian kindergartens normally spend between 2-4 hours of their time outdoors. Many kindergartens have access to local natural environments in their neighbourhood and make their own campsites for regular visits. Often in natural environments, outdoor play is widely recognised as an important pedagogical element in Norwegian kindergartens (Kragh-Müller, 2017; Sandseter & Lysklett, 2017). The Nordic approach to outdoor education has, for example, inspired the Forest Schools initiative in the UK (Knight, 2009). However, the Forest School approach has received criticism for being standardised, controlled,

and efficient (Leather, 2018). Recent research on outdoor play has applied a critical perspective on what benefits outdoor play may offer. For example, Grindheim (2021) shows conflicts between teachers' motivations for outdoor play and contextual expectations.

Studies of outdoor play in kindergartens have looked at the benefits of physical challenges and risk for preschool children (Sandseter et al., 2017) and of environmental education in preschools (Beery & Jørgensen, 2018; Caiman & Lundegård, 2018). Others have focused on the role fantasy has in how children make sense of natural environments (Jørgensen, 2017), how experiences with materials influence how and what children learn (Fredriksen, 2012; Jørgensen, 2016; Nordtømme, 2012) and ways in which play with materials may have a purpose in itself (Rautio, 2013b).

1.3. Kindergartens as an educational cornerstone

Kindergartens are perceived as the cornerstone of Norway's educational system. One reason is that the Norwegian society depends on high educational competence (Frønes, 2018, p. 74). 92.8% of all children in Norway (1-5 years of age) went to a kindergarten in 2020 and the large majority spent over 41 hours per week or more there (SSB, 2021).

Most Norwegian kindergartens build on what Kragh-Müller (2017) describes as a Nordic socio-educational tradition of childcare that is child-centred and focused on play, relationships, and outdoor life. However, educational governments in Norway fear low scores on standardised school tests, such as Programme for International Student Assessment (PISA), and argue for an "early start" to prepare children for school. Educational governments in Norway and many other European countries have been criticised for increasing pressure on "more" learning in kindergartens without a throughout account of the "what" and "why" to learn (Biesta, 2010; Pettersvold & Østrem, 2018). As a result, many kindergartens have been instructed to implement standardised learning programs, such as the behaviouristic Incredible Years (Pettersvold & Østrem, 2019). Løvlie (2007, p. 32) is critical of politicians who demand "better teaching for less money and [make] individual performance and control into one of the main aims of education".

By comparing steering documents from Nordic Early Childhood Education (ECE) institutions, Vallberg Roth (2014) shows how Nordic ECE institutions are shifting from a child-centred praxis that emphasises learning through (outdoor) play toward an Anglo-Saxon tradition emphasising learning and academic knowledge. Her findings are in line with Dahle (2020). Dahle finds that one prominent idea in private multinational kindergarten companies established in Norway is that their pedagogy is standardised. Further, she argues that the extent of standardised pedagogical content and a central administration give little room for local pedagogical initiatives and teachers' autonomy. A similar critique has been raised against Forest Schools in the UK (Leather, 2018).

As governmental expectations of more learning in kindergarten seem to increase, children's opportunities for free play in kindergarten may be challenged by adult-led and predetermined learning activities (Wolf, 2015). The concerns that children's possibilities for free play is declining are supported by the United Nations (UN). The UN Committee on the Rights of the Child [CRC] (2013) released a comment addressing what they perceive as challenges for children's rights to play. The challenges include "lack of access to nature", "pressure for educational achievement", "overly structured and programmed schedules", and "marketing and commercialisation of play". Although the challenges are global, Øksnes and Sundsdal (2018) point out that they also apply to Norway.

The expectations of more learning and standardised pedagogy in kindergartens may reduce children's opportunities for self-governed play in natural environments. At the same time, we know little about how children make sense of themselves and the world through play in natural environments.

1.4. Critical reading of the risky play and physically active play discourses

Different academic discourses influence perceptions of quality and practices in kindergartens through scholarly journals and education of future kindergarten teachers. Two academic discourses that shape how teachers and researchers perceive outdoor play are frequently referred to as "risky play" and "public health".

Risky play

"Risky play" is a dominant theoretical perspective on children's outdoor play (Sandseter et al., 2017). It has been applied to children from one to five years old (Kleppe, 2018; Sandseter, 2010) and in a range of countries (e.g., Brussoni et al., 2015; Little et al., 2012; Višnjić Jevtić et al., 2021). The "risky play" approach understands quests for physical danger and optimal levels of arousal as important components in children's play with "a myriad of benefits" (Sandseter et al., 2017, p. 116). The approach claims that children may improve motor and spatial competence, the ability to assess risk later in life, and adapt to new situations while playing on the edge between what is safe and what is physically dangerous (Sandseter et al., 2017). Norwegian kindergarten teachers in general seem to have a relatively high tolerance for risk during outdoor play compared to their European colleagues (Sandseter et al., 2019).

However, I am critical of a one-sided emphasis on physical danger as a paradigm to understand children's outdoor play. I do not question the suggestion that children benefit from playing on the edge of their abilities. I am critical of the assumption that physical risk is a fundamental driving force in children's play. As an alternative response, my aim is to explore children's existential exploration as a driving force in their self-governed play in natural environments.

Physically active play

The "public health" discourse emphasises play as a means to increase children's physical activity levels and thus to improve children's health later in life (Alexander et al., 2019; Piggin, 2019). The public health discourse may be framed within Sutton-Smith's rhetoric of "play as progress", where play is used as a means to improve other aspects of a child's life (Alexander et al., 2019).

Large-scale intervention studies aiming to increase physical activity levels have been initiated in Norway. One example is the ACTNOW study, which includes 60 kindergartens and 1200 children (Aadland et al., 2020). However, public health discourse in general expresses little about how interventions are experienced by participants. The content, aim, and relational aspects of increasing public activity levels are thus only slightly elaborated on and may be taken for granted (Piggin,

2019). Other researchers are concerned about what consequences the increased emphasis on physical activity with specific aims may mean for children's well-being (Alexander et al., 2019).

Physical activity is a multifaceted concept that also includes formation, lived experience, social dimensions, and political dimensions (Piggin, 2019). Thus, I am critical of initiatives aiming to increase physical activity in kindergarten with a limited perception of movement and activity as intensity, frequency, and duration, as Nerhus et al. (2011) present as a leading definition. In this project, I aim to investigate children's perspectives on movement and lived experience of being in activity in natural environments. Thus, I hope to supplement the physical activity discourse with a phenomenologically inspired approach to children's playful movements.

1.5. My research journey

My research interest originated from my experience leading a summer family camp in the mountains over ten years ago, organised by one of Norway's many outdoor organisations.

Many families at the camp were eager to summit Norway's second-highest mountain; this activity had been advertised as one of the main events of the week. One day, we decided to try to reach the summit. On our way to the top, the weather cooled, and it became misty and windy. Although the parents were as enthusiastic as ever, the children showed little interest. Their parents had to beg, pull, and lure the children to keep going, like donkeys with full carriages. Some children cried. The experience made me question what children's perspectives on outdoor activities may be. One reason was that many children seem to have a joyful time playing with stones, water, and sticks around the basecamp. To me, it seemed to differ from the adult's desire to reach a specific goal, such as a summit.

This experience became the starting point for my master's thesis and subsequent publications. Since then, I have followed research on children's outdoor play by reading literature and developing the theoretical perspective and guiding hypothesis in Article I. My research and development have largely been carried out in parallel

with lecturing kindergarten teachers and outdoor educators with some extra funding, allowing me to do some part-time research.

My main academic background is in the fields of “outdoor studies” and “friluftsliv”, which was, at least in Norway, emphasised in adults and adolescents. Thus, I started questioning children’s perspectives on “being” outdoors. However, I moved toward a kindergarten context for academic and pragmatic reasons.

Chapter 2: Theoretical and Conceptual Framework

2.1. Experiencing the world with the body

The ontological starting point for this project is that people, including children, are their bodies and perceive the world by moving and using their bodies (Merleau-Ponty, 2014, p. 213). The bodies are people's anchor in the world and core for how people experience the environment (Merleau-Ponty, 2014, p. 147). However, Merleau-Ponty criticise his own phenomenology for having little emphasis on the unity shared between bodies and environments (Evans, 2008). However, Merleau-Ponty (2014, pp. 140-141) and Ingold (2000) share the idea that bodies and environments are closely intertwined and that both are central for meaning-making. Ingold (2000) expands on this, developing concepts of how humans and environments are tightly woven together (see Chapter 2.2.).

Accordingly, young children perceive their physical, social, and cultural environments as interwoven with their bodies. To give a fictitious example to illustrate Merleau-Ponty's point: If a girl picks up a rose to smell it, she might relate the smell to how the stem feels, the colour and shape of the rose, and the context in which her smelling occurs. In addition, she might register the chemical substance that generates the smell. Therefore, she might relate differently to a rose that she picked herself than she would to the same type of rose presented to her as a gift on a special occasion. In other words, Merleau-Ponty (2014) would argue that although the girl apprehends the rose in time and place through sensory perception, her perception of it is mediated by her prior embodied sensory experiences and cultural history. In sum, the experience of a rose is not uniform; each of us experiences it differently, based on our individual biography and the context.

People are continually shifting between enacting movements in environments and expecting what the new movement will be like. Thus, there are always elements of uncertainty of what the next movement and experience will be like (Merleau-Ponty, 2014, pp. 137-138). Applied to children, what catches children's attention may be an expression of what they have experienced that they "can do" and is a part of what Merleau-Ponty (2014, p. 139) conceptualises as the "intentional arc". The intentional arc is bridging what, in this case, children have experienced that they can master, the

immediate situation, and trajectories of what they can do and what they cannot do. The intentional arc also serves to embed what is incorporated as meaningful (Merleau-Ponty, 2014, pp. 137-140). For this project, it means that children perceive and make sense of the world using their bodies. Additionally, it means that children perceive what they can and cannot do in environments.

2.2. Dwelling in the environment

Ingold (2000) draws on several philosophers, including Heidegger, Merleau-Ponty, and Gibson, in his argument that movements and involvement with the environment are essential for people's existence. It is through dwelling in the environment, he states, that people are shaped and are shaping the environment. Ingold's (2000) perspective on dwelling suggests that people make themselves familiar in the social and physical world by acting and living. Fundamental for Ingold's idea is that people and environments are tightly woven together and reciprocally shape one another.

Applied to children's play, the dwelling perspective holds that children and their environments are shaping one another. Thus, children create meaning and understandings as they move and play through and interact with the physical and social environment through experience and sensory perceptions of their environment and themselves in relation to it.

Movement is the essence of Ingold's thinking. All things, including people and non-people, are constantly on the move. For example, the water runs to the sea or a lake, stones move because of geological processes, and children move as they play. The movements create what Ingold (2011) describes as "lines" that meander through the world. When different lines join and influence each other, a "knot" is created (Ingold, 2011, p. 154). In the case of playing children, a knot may be formed when children meet one another or play extensively with features of the environment, such as a stream. The interaction between lines may result in reciprocal shaping. For example, Arvidsen (2018) shows how popular climbing trees become worn after children have played extensively on them.

The mutual shaping is addressed through a process Ingold describes as "correspondence" (Ingold, 2013, 2018). Correspondence is a back-and-forth process

between the child and the environment. Myrstad et al. (2021) apply correspondence to a child walking in deep snow: For every step taken, the child adjusts parts of their body to stay balanced and maintain progress. The adjustments stem from "demands" from the snow. Thus, the snow influences the child's movements and how they relate to it. It may for example be perceived as an obstacle that they "fight" through. At the same time, their steps create tracks in the snow, shaping the environment as they go. For Ingold, it is through the process of correspondence that knowledge grows (Ingold, 2018). By applying the concept of correspondence, Bartnæs and Myrstad (2022) show how children learn by being with snowy environments.

The examples above illustrate how children and environments are tightly woven together in a meshwork that is constantly evolving as different lines become knitted together. Inspired by Ingold, this project understands children's meaning-making as resulting from children's correspondence with the environment through movement. Thus, children and the world are both continuously becoming. The perspective complies with ideas from Løvlie (2007), for example, arguing that meaning is created as a link between mind and materiality, situated in time and place.

2.3. Inspirations for movement from the environment

I turned to Gibson's (2014) concept of "affordances" for an analytical perspective to investigate children's possibilities for play and exploration in natural environments.

An affordance describes invitations from the environment to, in this case, play and explore. It stems from the verb "to afford" (Gibson, 2014, p. 119). For Gibson (2014, p. 119, original italics), "*affordances* of the environment are what it offers the animal, what it *provides* or *furnishes*, either for good or ill". Heft (1988), expanding on Gibson's idea, classifies how different environmental features may be used for play. He describes them as, for example, "climb-on-able-features" and "jump-up-on/down/off-able-features".

However, people do not perceive objects, geometric figures, or surfaces, but possibilities for actions (Gibson, 2014, p. 119). For example, surfaces to walk on and trees to climb. The idea that people do not merely see raw sense data but persons and things, links Gibson with Merleau-Ponty. For example, Morris (2012, p. 124) suggests

that Gibson was influenced by Merleau-Ponty. Merleau-Ponty (in Carman, 2008, p. 45) argues that "the "things" we ordinarily see are not abstracts, free-floating qualities, but opportunities, threats, dangers – in short, things to do, things to grab, things to avoid".

Gibson (2014, p. 121) holds that an "affordance" exists in the relationship between people and their environment. However, he has been criticised for emphasising aspects of the environment rather than of the children (Chemero, 2003; Greeno, 1994; Ingold, 2011, p. 79).

Greeno (1994) has attempted to improve the perceived imbalance by introducing the concept of "ability" to characterise children's contribution to play in environments. While Waters (2017) problematises that many recent studies applying affordances to outdoor play emphasise the physical environment without paying attention to the sociocultural aspects, such as rules, legislation, and cultures, when investigating children's possibilities for play. She emphasises that affordances are always mediated within a sociocultural context. For example, how they are treated, supported, confirmed, motivated or restricted from the very beginning onwards. Thus, social, cultural, and historical dimensions always influence what possibilities for play and movement children perceive.

For this project, it means that possibilities for play occur in relation between individual children and environmental features' physical qualities, the child's previous experiences, the current situation, and cultural norms and values.

2.4. Play and exploration

Play and exploration are closely connected concepts and are core components in children's being-and-becoming.

Play

Play is a multifaceted concept. However, perceptions of "play" have changed between historical and cultural contexts mainly from something children do for play's own purpose towards more structured and adult-controlled activities initiated to improve

aspects of life, for example, better health (e.g., Alexander et al., 2019; Frost, 2010). Thus, play may be defined and understood in a range of ways.

In this project, "play" and everyday life are closely linked and are a fundamental element in children's way of living (cf., Wall, 2013). It refers to activities that are "non-compulsory, driven by intrinsic motivation and undertaken for its own sake, rather than as a means to an end" (UN Committee on the Rights of the Child [CRC], 2013, p. 5). To elaborate on UN's definition, I lean on Steinsholt's (2010) reading of Gadamer's "Truth and Method" and Steinsholt and Øksnes (2003) argument for an holistic understanding of play's improvisatory character and formative potential.

Play is understood as a subject that immerses players in unpredictable, improvisatory, and exploratory movements that shifts directions hither and thither between players (Steinsholt, 2010). Gadamer uses an example with a ball to illustrate his argument that play may hold unpredictable movements: A ball game may never stop because unpredictable movements of the ball create surprises almost by itself. It is about movement that is always changing and shifting directions that the playing child has to respond to follow (Gadamer, 2012, p. 136). Thus, play inhabits a wide range of nearly unforeseeable possibilities, spontaneity, and freedom that contribute to create unique situations (Steinsholt, 2010).

This project expands on Gadamer's idea and takes a starting point that similar movements may occur with other materials, such as snow, ice, stones, and sticks. The players are not necessarily other children, but my reading is that "players" may include materials and adults. Using the example of a ballgame, Gadamer illustrates how play may include materials and that materials may play with, for example, children.

Steinsholt and Øksnes (2003) argue, drawing on Nietzsche, that play "just happens" and absorbs the players in the play. But for play to happen, the players are required to let themselves be immersed in the play. It is a risky project because no one knows where it may end (Steinsholt & Øksnes, 2003). When children are lost in play, for example, when shaping figures in the snow without responding to the teacher's call, they are being played with by the world.

Steinsholt's (2010) perspective that play is fundamental for understandings among people is supported by Wall (2013, p. 41). Wall argues that play is a possibility for meaning-making. If all the world is play, he points out, it means that life is opened to create meaning. Through playful hermeneutic processes, children experience different relationships in relation to past experiences. The back-and-forth process between experiencing new situations and relating them to existing understandings may lead them to challenge and change their assumed "truths" (Steinsholt, 2010). The process of creating meaning through play is thus connected with "exploration".

Self-governed play

This project centres on play where children to a large degree decides what to do and how to do it, referred to as "self-guided play". Researchers ask to what degree play may be self-governed in an educational context (Tullgren, 2004; Wood, 2014). Tullgren (2004) argues, by drawing on Foucault, that children's play in kindergartens is shaped by what is understood as "normal" play and a "normal" childhood and by ideas about what is valuable for the future society. Although children are supposed to play freely and govern their play, the play is at the same time regulated to "live up to the image of a normal child that realises the idea of the future man" (Tullgren, 2004, p. 130). Thus, children's play in institutions may never be completely free from (adult) influence.

When children in this project are described as playing "autonomously" or "self-governed", they are always playing within a cultural, pedagogical, and societal context. However, I understand self-guided play as children are playing without direct adult influence in situations where they, to a large degree, decide what to do, where to play, and who to include.

Exploration

Play, exploration, and learning are difficult to distinguish (Nilsson et al., 2018; Ødegaard, 2020). However, Nilsson et al. (2018) point to a slight difference between play and exploration in how children create meaning: "In play, meaning is made by attributing meaning to objects and actions. And in exploration, meaning is made by formulating, debating, and testing hypotheses and theories." (Nilsson et al., 2018, p. 241).

Nevertheless, the concept of "exploration" receives attention from teachers and psychologists. Studies in environmental psychology show that children may explore different qualities of objects (e.g., Gibson, 1988; Hutt & Bhavnani, 1972). Hutt and Gibson share a perspective on exploration that is concerned with investigations of the world and its properties. In pedagogy, exploration is linked to play and creation of knowledge (e.g., Eikset & Ødegaard, 2020; Nilsson et al., 2018; Steinsholt, 2010).

For Ødegaard (2020), "exploration" is a play- and curiosity-related action. It consists of formative dialogues with the social and physical environment. A common thread is that both curiosity and exploration entail seeking understanding and initiating movement. Further, she highlights that children's exploration involves children's investigation and examination, testing opportunities, challenging rules, and giving resistance.

In outdoor pedagogy, Gurholt (2015) relates explorations to curiosity, journeying, and experiences. By following one's curiosity, people may do and test things and ask questions in life situations and contexts that may lead to transformation of themselves and their reality. Thus, exploration connects with experiential learning in that it is about interacting with the world.

In this project, I develop an understanding of exploration and play inspired by the above perspectives on play as exploratory meaning-making. Here, children connect past experiences through playful hermeneutic processes to present-day explorations. In other words, play is a way of exploring and creating new and revising existing knowledge. Children's playful exploration may be characterised as improvisatory, unpredictable, playful, voluntarily, and enjoyable, but is at the same time a serious activity for the children because it is about creating understandings of the world. The perspective on exploration complies with Ingold (2000, p. 208) stating that "This discovery procedure, where objects in the landscape become clues to meaning, is what distinguishes the perspective of dwelling". Ødegaard (2021) suggests that exploration is an important meaning-making process that should be put to the forefront of early childhood education.

2.5. *Bildung* – forming of self through play

Scholars argue that *Bildung* is a valuable concept in outdoor education (Gurholt, 2008) and in kindergartens (Ødegaard & White, 2016).

Bildung is a pedagogical perspective that is broadly constructed and difficult to translate directly into English but may be translated as "formation" (Ødegaard & White, 2016). *Bildung* is a wide perspective in the fields of education and kindergartens (Masschelein & Ricken, 2003; Ødegaard & White, 2016). It was revitalised in the FPfK in 2011 as an answer to counteract a shift in the debate on kindergartens from a Nordic child-centred pedagogy towards an Anglo-Saxon learning discourse (Ødegaard, 2019). Today, it is a core element in the FPfK (Ministry of Education and Research, 2017).

In general, *Bildung* connotes holistic experiential fostering or enculturation that emphasises playful and dialectical processes of "being-in-the-world" continually shaping our awareness of possibilities and limitations in our knowledge. *Bildung* may include respect for other cultures and nature. Today, it includes the building of democratic and environmentally responsible citizenship, embracing a sense of moral and ethical awareness (Løvlie, 2002). It also includes intertwined processes of "being-and-becoming" (Uprichard, 2008), which entail a perspective on children as both competent while at the same time growing and situated within sociocultural contexts and open to consideration of their own goals, growth, and progress. It emerges from experiential knowledge, which can only be obtained through direct experience (Gadamer, 2012), and is thus connected to Merleau-Ponty's phenomenology of the body and the concept of "lived experience". The experiences children gain using their bodies and movements are at the core of children's self-formation and are important for becoming independent citizens (Løkken, 2018).

Bildung may occur everywhere and at any time (Biesta, 2002). Nevertheless, journeying – involving exploring and experiencing unfamiliar situations, cultures, and environments before returning "home"– is a core metaphor of *Bildung*. The journey is supposed to contribute to self-formation and enculturation. The concept of *Bildung* opens for adventurous explorations of what is unknown, rather than a quest for risks itself. This makes children experienced in their present situation while

expanding on their future possibilities (Gustavsson, 2001). These perspectives were brought into outdoor education philosophy by Becker (2007) and applied to *friluftsliv* by Gurholt (2010). I apply these metaphors to an interpretation of self-formation of knowledge-in-being in nature environments. Thus, I argue that outdoor experiential education connects knowledge about self, others, and environments that are only accessible through active participation.

Another reason I have for turning to *Bildung* is because scholars argue that *Bildung* is a never-ending improvisatory, playful, and unpredictable process of explorations of local environments and physical and social relationships the child is a part of (Gadamer, 2012; Gurholt, 2010; Johansson, 2019; Løvlie, 2002; Steinsholt, 2010). In addition, it offers a perspective on a common development of local ways to be and use environments and become well-versed inhabitants of the nature-culture worlds the children are a part of (Løvlie, 2007).

Chapter 3: Research Questions

Children's self-governed outdoor play is perceived as culturally and educationally essential in Nordic countries (see Chapter 1). At the same time, it is under pressure by educational policy, initiatives to improve children's health emphasising predefined outcomes from play and employment of predesigned so-called universal pedagogical programmes. Further, the theoretical framework outlined in Chapter 2 describes that self-governed play in natural environments has the potential for children to explore, experience, and create meaning as they play.

With a hermeneutic phenomenological approach, I investigate how children create meaning of themselves and their environment through the following research questions:

3.1. Main research question

- What does natural environments mean for children's play and how do children create meaning during play in natural environments?

3.2. Sub-study research questions

I have explored the main research question through four sub-research questions examined in four articles. These articles explore four aspects of children's meaning-making through self-governed play in natural environments, based on ethnographic material and the project's theoretical framework outlined above. The sub-research questions below form the basis of the different articles in this project:

I. What are the driving forces in children's play in natural environments as seen from the children's perspective?
II. How do children build understandings of themselves and their environment during self-initiated play with nature materials?
III. What characterises teachers' outdoor didactics in self-governed play and growth as these appear in a nature kindergarten?
IV. How can children's embodied experiences with natural environments be explored methodologically?

Chapter 4: Methodology

4.1. Inspiration from a hermeneutic phenomenological approach

The ontology of this project is that people, including children, are tightly woven with their social and physical surroundings. The relationship with their surroundings is essential for how people live and create meaning with the world (Ingold, 2000; Merleau-Ponty, 2014). Merleau-Ponty is central to my theoretical framework, and Allen-Collinson (2019) describes him as an existential phenomenologist. Existential phenomenology is one branch of phenomenology focusing on questions related to the body-world-consciousness relationship and understanding them as closely intertwined. Existential phenomenologists acknowledge that researchers always interpret in light of social and cultural structures. Thus, "pure" descriptions that are free from the researcher's interpretations are impossible (Allen-Collinson, 2019) and are thus linked with hermeneutics. Based on the assumption that children experience and make sense of the environment interactively using their bodies, I find a phenomenological perspective valuable for this project's aim to explore children's embodied engagement with natural environments.

As a researcher and human, I always interpret the observations of children's movements and embodied encounters in light of my preconceptions, my previous experiences, and the sociocultural context I am formed by and framed in. It is the essence of hermeneutics (Alvesson & Sköldberg, 2018, pp. 122-131). Although hermeneutics stems from interpretations of texts, it is also applied to interpretations of people's actions using the text as a model (Alvesson & Sköldberg, 2018, p. 172). Inspired by Alvesson and Sköldberg (2018, pp. 166-167), interpretations, in this case, result from interplays between my preunderstanding, data, theory, and research questions forming a new or revised understanding of the "whole". The "whole" may refer to the overall understanding of the field. Fangen (2010, pp. 47-52) supports the idea that preunderstandings are an important component of ethnographers' luggage when entering the field.

Thus, my epistemological starting point to explore children's meaning-making in natural environments may be characterised as a hermeneutic phenomenological approach.

According to van Manen (1990, p. 9), the hermeneutic phenomenological approach is both descriptive and interpretive. Descriptive in the sense that, in this project, my attention is directed toward children's life-worlds and their embodied engagements with natural environments, how they move and utilise features of the natural environment as they play. At the same time, the approach is interpretative because phenomena are negotiated and interpreted both by the participants and me writing about their experiences.

Myself as a researcher

Because I am inevitably a part of the social world that I investigate and because I enter the field with preunderstandings and because understandings and interpretations result from previous experiences and understandings, my preunderstandings will always colour the choices I make, what I see and hear, and what knowledge I create (Alvesson & Sköldberg, 2018; Fangen, 2010; Hammersley & Atkinson, 2019; Pink, 2009). My ambition with this section is thus to provide insight into the researcher, myself, and the strategies I employed to deal with my personal and academic closeness to the field.

When I started this project, I had a presumption that there was something special about nature. The presumption may be based on my own experiences with nature and "friluftsliv" in my childhood. I grew up in a family with strong outdoor (friluftsliv) traditions: Early every Sunday morning (at least as I recall it), my parents woke me up to go into nature for either orienteering or cross-country skiing or for something else. Today, I have two children that enjoy playing in the outdoors. Thus, I have personal ideas of what is important in childhood. My upbringing and how I raise my children are connected with how Halldén (2009, 2011) describes what a good upbringing implies in the Nordic countries.

My academic background is rooted in a bachelor's degree in "Friluftsliv", and a master's in sport sciences specialising in "Friluftsliv". The studies have provided me with intellectual and practical skills in organising outdoor activities—but also critical thinking about hegemonic narratives and practices. Currently, I teach at the Early Childhood Teacher Education and "Friluftsliv" education at Western Norway University of Applied Sciences. My work experiences have provided me with ideas

about conditions that constrain and provide opportunities for kindergarten's pedagogical outdoor practices.

With this background, how can I avoid merely identifying with the teachers and recognised research on the value of children's upbringing in nature and outdoor education?

In an attempt to go beyond the fallacy, I attempted to enter the field with an open mind while recognising my preunderstandings and the knowledge I brought with me, as suggested by Alvesson and Sköldberg (2018, pp. 332-334) and Fangen (2010, p. 47). Alvesson and Sköldberg (2018, p. 332) point out that "shutting out" common-sense preconceptions combined with an abductive approach may lead to interesting results. They point out that there is no disagreement between attempting to look beyond common-sense preconceptions and being widely read.

Additionally, I wrote detailed descriptions of situations using as few cultural categories as possible, referred to by Wadel et al. (2014, pp. 87-90) as naïve descriptions. Wadel suggests that writing naïve descriptions may help go beyond taken for granted assumptions, in this case, to go beyond cultural categories and my presumptions about "children playing in nature" by investigating how children's movements and features of the natural environments together shape children's play. Thus, I tried to avoid using categories such as "climbing", "nature", "sliding", but rather describe in detail how children's bodies relate to and adjust to the features and how different materials were used to provide insight into relationships little illuminated. The strategy resulted in detailed and rich descriptions that revealed how movements and environments are closely connected that would be difficult to display using broader categories. For an example, see Appendix III.

4.2. Design

To explore how children make sense of themselves and the world through self-governed play in natural environments, I developed a theoretical perspective on children's play in natural environments as embodied explorations of themselves and their environments by reanalysing material from my master's thesis while studying theoretical perspectives that were new to me (Article I). I established my

methodological approach and deepened my understanding of children's play in natural environments by working with Article IV. Later, I conducted two ethnographical field work periods in a Norwegian kindergarten with outdoor education as a prioritised area.

The theoretical framework in Article I functions as a starting point to further investigate children's meaning-making throughout the rest of this project (Article II, III, and IV). Additionally, the theoretical framework inspired the development of the methodological understanding and approach presented in Article IV.

Table 1 shows an idealised timeline for this project, how the different articles relate to each other and to the two field work periods underpinning this doctoral thesis. The idealised timeline shows the order the papers were published in. However, in the real world, this project developed similar to a hermeneutic process. It shifted "hither and thither" between the theoretical ideas (Article I), the methodological understanding (Article IV), and the articles discussing the empirical analyses of the field work (Articles II and III).

The numbers refer to the order the articles have in Chapter 5. Article I, II, and III can be read as a comprehensive narrative of children's ways of making meaning during outdoor play, while Article IV represents methodological reflections of the process.

Article I (2016)	Article IV (2018)	Two fieldworks (2018)	Article II (2020)	Article III (2021)
• Developing a theoretical perspective on children's outdoor play • Forming theoretical basis for Articles II, III, and IV • Inspiration for research questions in Articles II, II, & IV	• Developing the methodological approach to fieldwork	• Winter: cold, dark, and icy • Summer: warm, bright, and flowering	• Analysing what environmental materials mean for children's play and growth • Analysis the fieldworks in light of the theoretical framework developed in Article I and methodological understanding of Article IV	• Analysing the conditons teachers and environments create for children's play and growth • Analysis of the fieldworks in light of the theoretical framework developed in Article I

Table 1 shows an idealised chronological timeline for this project. Article I form the starting point for the research questions in Article II and III, including the theoretical framework for every article in this thesis. Article IV was developed as a preparation for the field work periods but was not published until after both field work periods.

Field work periods

For this project, I conducted two ethnographical field work periods in a Norwegian kindergarten with outdoor education as a prioritised area because I wanted to explore how children make sense of themselves and the world through nature play.

- Field work period 1: winter (January/February 2018, 10 days)
- Field work period 2: summer (End of May 2018, 9 days)

I used the first few days of Field work period 1 to get an overall idea of the kindergarten practice and familiarise myself with the children and teachers.

Each field work had a different focus. The focus in Field work period 1 was self-governed play and how the children used their senses and bodies while playing with water, snow, ice, and soil. During the winter season Field work period 1 was conducted in, the days are the darkest and coldest of the year. The focus in field work period 2 was the same kindergarten and the same children's physical, social, and pedagogical possibilities for play and interactions with season-specific materials during the Nordic summer.

The climate in the fjord regions in the western part of Norway, where the kindergarten is located, is characterised by dark and cold winter days, often with much snow. However, the weather can shift rapidly to mild temperatures, resulting in rain. The surrounding tall mountains casts shadows on the kindergarten's surroundings during winter, resulting in many weeks where the kindergarten receives no direct sunlight. The result is that the children arrive at the kindergarten in darkness and leave for home in darkness.

The temperatures are often warm during the summer, and it is light before children arrive at the kindergarten until long after they have returned home. This year, it was uncommonly warm. During the field work, it was only sun and blue skies, although it is often raining.

The empirical context in Article I and partly Article IV differs from the rest of the articles by having a slightly older sample (6 – 10 years) and being contextualised in a nature-based summer holiday camp for families with children organised in an

ancient pastoral landscape surrounded by tall peaks and glaciers. On the other hand, Article II, Article III, and the other part of Article IV are situated in the same nature kindergarten embracing the same group of 4-5 years old children during different seasons. It is reasonable to believe that the different contexts frame children's play in natural environments differently because sociocultural and relational aspects differ. At the same time, my main interest in every article is children's meaning-making through self-governed play in and with natural environments.

Even though the contexts and environments are different institutionally, children's play in all articles is created and maintained here and now by utilising resources represented by children and the environment. Besides, there might be similarities in the values among families participating in outdoor supper camps and those wanting their children to engage in a nature kindergarten. Further, both contexts are characterised as natural environments. Additionally, the children played with little adult influence. However, the adults, in general, kept a watchful eye on them. Thus, the different articles illuminate the research question from different yet overlapping perspectives. However, the emphasis in this project is play in natural environments in kindergartens, not how sociocultural family differences may affect children's outdoor play.

4.3. Ethnographic approach

This project's epistemology emphasises that people, and let me add researchers, make sense of the world by interacting with it while creating a meshwork of lines (cf., Ingold, 2000). One implication is that researchers have to interact with the people and places under investigation. The implication is linked with ethnographic epistemology that, in essence, is about becoming a member of a cultural group to do what they do, travel with them, and live alongside and as much as possible like them to develop an understanding of their cultural realities, what skills they develop, need and use, and how they acquire them (Atkinson, 2017). Further, ethnography aims to produce versions of ethnographers' experiences of the cultural group under study that "are as loyal as possible to the context, the embodied, sensory and affective experiences, and the negotiations and intersubjectivities through which the knowledge was produced" (Pink, 2013, p. 35).

Because children create meaning using their bodies, including their senses such as sound, smell, and touch, in tight relationship with the environment through movements (see Chapter 2), I wanted to apply an approach that was open to different embodied interactions with natural environments. One reason was that, as Hangaard Rasmussen (1992, p. 87) points out, focusing on how children experience the world using their senses is a good way to understand their perspectives. I turned to sensory ethnography for inspiration. Pink (2009) emphasises that sensory ethnography is one branch of ethnography where the researcher focuses on sensory and embodied aspects of ethnographical research. It is a way of doing ethnography that considers both the participant's and the researcher's experience, perception, knowledge, and practices. Thus, it is a broad methodology for understanding informants" experiences of a situation. Sensory ethnography may respond to Atkinson's (2017, p. 125) point that places and senses are often reduced to background or contextual phenomena in ethnographic studies, although ethnographic field work is always multimodal and situated. "Multimodal" implies how meaning is generated in many ways where all senses and the place play a part (Atkinson, 2017, p. 125). Further, Humberstone (2011) experienced that ethnography can provide unique insights into embodied experiences of "being" in nature. Pedersen (2020) experienced that it was important to be involved in situations to grasp the movements, sounds, and smells that constituted children's play.

Sensory ethnography allowed me to play along with the children and share experiences with them by participating in their play. Sensory ethnography has been used in outdoor contexts in kindergartens (e.g., Jørgensen, 2014, 2016; MacQuarrie et al., 2015; Myrstad & Sverdrup, 2019; Nugent, 2018). The studies show a potential in the approach.

The theoretical framework in this study is a perspective on bodies, movements, feelings, environments, and growth as integrated parts of unfolding events and relationships (see Chapter 2). Inspired by Pink (2011), the perspective may have analytical advantages because it offers us the ability to see performing bodies, in this case, playing children, in a wider ecology of relationships.

In Articles I, II, and IV, I report my approach as "inspired" by ethnography. I used "inspired by" because of the relatively short field work I conducted and in respect of the effort earlier ethnographers invested in their field work periods. Hammersley (2006) coins the term "micro-ethnography" to describe a trend of shorter field work in contemporary ethnographical studies compared to earlier ethnographic studies. However, today I label my project as "ethnography". For doing so, I find support in Hammersley (2006) pointing out that relatively short-length field work is common in contemporary ethnography that is often undertaken "from home". Another reason is that the essence of field work is, according to Album (in Fangen, 2010, p. 123), to get to know the participants' worldviews and experiences. The length of my field work provided sufficient time for me to establish relationships with most children and familiarise myself with the kindergarten's practices. For example, children invited me to join different types of play and talked openly with me. Additionally, I noticed that the routines in the kindergartens soon became predictable and felt natural for me.

Sample

The samples in qualitative studies are often selective, meaning that the researcher has selected the sample after mapping different possibilities (Fangen, 2010, p. 52). I will present my arguments for selecting the particular kindergarten and later present the children and teachers[3] at the kindergarten department.

The kindergarten

I conducted two field work periods in one public kindergarten that emphasised outdoor education in the western part of Norway. I selected one kindergarten department because I recognised the point made by Hammersley and Atkinson (2019, p. 33) that it is possible to investigate to a greater depth with a narrow sample. Other researchers have used an even smaller sample to gain a deep understanding of a phenomenon. For example, Wadel et al. (2014) investigated what it is like to be unemployed by studying one person in one community.

[3] "Teachers" refers to the group of adults who work with children in the kindergarten department. The group have different qualifications and experiences.

The kindergarten was selected based on the main research question: to investigate how children create meaning in and with natural environments. Thus, I wanted a kindergarten using diverse natural environments every day and children experienced with playing in natural environments.

The landscape surrounding the chosen kindergarten consisted of fjords, steep mountainsides, and high mountains but also, roads, houses, and a camping ground. As a result of its degree of latitude and the landscape's topography, the kindergarten receives no direct sunlight for a few months every winter, including some days during Field work period 1.

The kindergarten's playground is characterised by rocks, cliffs, different trees, and roots. It also has a local fauna with squirrels, small birds, and insects such as ants. The kindergarten also keeps poultry that the children participate in taking care of. The children and teachers visit places outside the playground with different environmental characteristics, such as an open field for "ski-fun" [from Norwegian *skileik* that directly translates ski-play or playing on skis], a seashore, and a road cut with many icicles during winter.

The children played outdoors in natural environments every day throughout the year. The children alternated between being in the "outdoor section" and the "indoor section" for periods of two weeks. The indoor section is comparable to an "ordinary" kindergarten in the region. The children spent a significant amount of time outdoors in both sections. Many would refer to the outdoor playground used at the "indoor section" as a natural environment. Both field work periods took place when the children were in the "outdoor section".

During their time in the "outdoor section", the children have only a simple, uninsulated, wooden one-room "hut" as shelter. However, they also have access to an indoor dressing room with toilets. During the "outdoor period", the children are outside for the most part and more or less regularly on hikes. They often eat lunch around a campfire during the hikes and drink hot cacao from a thermos. The practice seems close to what many in Norway would refer to as *friluftsliv*: outdoor life in

nearby nature areas that are available to all, according to the principles of the everyman's rights.

When the children are in the "outdoor section", the kindergarten does not provide any toys other than what are found in the playground. In other words, the children were to use materials provided by nature in their play. However, they have some science equipment such as landing nets, magnifiers, and reference books. Additionally, they have equipment for outdoor activities such as knives, seating pads, and thermoses.

Selecting a sample based on a combination of academic and pragmatic reasons is common (Fangen, 2010, p. 52). The academic reasons are listed above. Pragmatically, this kindergarten was easy to establish access to because I was familiar with the head of the kindergarten and thought she was likely to be positive about participating. Like one of Pedersen's (2020) criteria, I wanted a kindergarten within driving distance from home. Selecting a nearby kindergarten would allow me to familiarise myself with the outdoor area and staff before the field work started and return to the kindergarten if needed.

During field work period 1, in January, the sun did not come over the mountains during the first days. The temperature was cold, with most days alternating between degrees around the freezing point. The nearby nature and the kindergarten's playground were covered with ice and snow. It changed between sleeting (wet falling snow) [in Norwegian: sludd], light rain, and snowy weather.

During field work period 2 at the end of May, the temperature was warm, around 30 degrees Celsius at midday. On one of the first days, I wrote in the field notes: "It is really warm today. 22 degrees Celsius and calm. It feels like the sun burns my skin. It does not seem like the children are affected to a large degree, but I am exhausted of it".

Children and teachers

The sample consists of 19 children (4-6 years), 9 boys and 10 girls. All children had parents from Norway, except one girl having parents from an African country.

The teachers consisted of four women with varying formal education ranging from one under education to one educated preschool teacher [barnehagelærer]. When employing new employees, the headteacher of the department said that she valued personal interest in outdoor education.

All children and teachers at the department agreed to contribute to the generation of data by my means of observation.

Doing the field work

I planned to use different methods to gain insight into children's actions and experiences and the meanings produced in different situations created by the children or in which the children became involved. The methods were interviews, photo interviews, and what I later called a "playing along" approach (Article IV). Combining different methods during the field work to reinforce each other is common in ethnography (Fangen, 2010, p. 171; Fetterman, 2020, p. 77; Pink, 2009, p. 10).

Participatory observation with a play-along approach was at the core during both field work periods. Data from interviews and photo interviews supplemented and contrasted data from observations. The structure occurred during the field work periods resulting from difficulties in carrying out high-quality interviews and photo interviews. However, different methods have been emphasised differently in the various articles (see Table 2).

In the following, I will discuss how I employed different methods, how I combined them, and my experiences with how they provided insight into children playing in correspondence with environmental features.

Access to the field

I contacted the head of the kindergarten where I wanted to conduct the field work periods. I had a meeting that included the head of the kindergarten, the headteacher of the department, and myself. I informed them of my ambitions with the field work periods and the initial research question. We discussed the teachers' roles in the field work periods. For example, they asked me if I wanted them to organise something special, such as trips. I clarified that I wanted them to act as usual. We also discussed

ethical issues, for example, whether I was going to focus on children's activities and teachers' conditioning of play in natural environments or individual children.

I prepared the children and their families for the field work periods with information letters to the parents and one written in easy language for the parents to read for the children (see Appendix II and Chapter 4.6.)

Children are gatekeepers on their own. Thus, it is essential to negotiate access with them to learn about their world (Mandell, 1988). Consequently, I was open about my role and agenda. Further, I answered all their questions about my whereabouts to establish a trustful relationship. I pre-supposed that children in kindergarten associate adults with teachers. Thus, I attempted to take a role in between teacher and child. Inspired by Christensen (2004), I attempted to be a different sort of adult by seeking to respect children's views and wishes and by being a "critical friend rather than controlling expert" (Dahl, 2014, p. 615). I participated in activities provided by the teachers, ate lunch with the children when it suited the situation, and played with the children. I used the roles and varying degrees of involvement to gain access to different situations, diffuse the imbalance of power between researcher and children, and develop understandings of bodily experiences with the environment. I was rapidly welcomed as "Jostein the researcher" by the children. I used the nickname in the information letter to the children (see Appendix II). Many children addressed me as "researcher" throughout the field work periods, indicating that they knew that I had a different role from the teachers and that I was a "researcher". At the same time, it seemed like they did not restrain themselves or otherwise notably care that I was a researcher.

Children approached me, invited me to join different forms for play, and gave me different roles (including roles that I perceived as "patient" or "father"). I was rapidly invited and included by most children in "their" play, and most children talked easily with me, suggesting that they accepted me as a type of adult friend. At times, I felt attractive because many children wanted my attention and as a result tended to talk over one another. In other cases, they wanted me to assist them in putting on their mittens and fixing the straps under their shoes. Some children came to me if they had questions or needed comfort. At times, some children did not talk about topics I was

interested in when I initiated field talks. Instead, they continued to talk about subjects of their own interest. However, this provided partly unforeseen insights into topics of their interests. My experience corresponds with other researchers' experiences with conducting research with children (e.g., Christensen, 2004).

Participant observation with a "play-along" approach

One common approach in ethnography is participant observation (Fangen, 2010; Fetterman, 2020; Hammersley & Atkinson, 2019). It was at the core of this study. However, I had difficulties finding a methodological concept that included participation in children's play and my embodied experiences from the field work periods. Thus, I developed the concept of "mutual experiences" (see Article IV) to describe my approach to children's play.

I suggest re-terming "mutual experiences" to a play-along approach. Today, almost three years after publication, my concern is that the term "mutual experiences" may be misinterpreted as an argument for identical experiences, which is problematic based on this project ontology and epistemology. I will use play-along throughout this thesis. By "playing along", I also recognised the ontological premise set up by Ingold (2000) and Merleau-Ponty (2014): that people's actions are contextual and inseparable from their environment, a premise that is well known in ethnographical studies (Fangen, 2010; Hammersley & Atkinson, 2019; Pink, 2009).

There are different ways of participating when observing (e.g., Fangen, 2010, pp. 72-87). The play-along approach is a form for a fully participating role. I lean on Atkinson (2017, p. 15), hoping to acquire similar competence as the participants during the field work periods to grasp different forms of knowledge and skills social they use in the local culture and how such knowledge is acquired. I paid close attention to my embodied experiences of, for example, running on icy terrain, sliding down icy sledging hills, and eating lunch outside in temperatures below the freezing point. My sensory experiences added perspectives on situations other than visual observations alone.

Play, in Gadamer's perspective (Steinsholt, 2010), includes a transcendental state. Thus, I could not play in the philosophical sense and at the same time remain at an analytic distance in fear of "going native", as Fangen (2010, pp. 72-77) cautions.

When "going native", the researcher become so immersed in the field that he cannot formulate analytic reflections on field work experiences. Thus, I had to shift between playing and maintaining an attentive, analytic distance. By moving between closeness and analytic distance, my ambition was to shift between writing naive and detailed descriptions of specific events from the inside while maintaining a contextual overview from an analytic distance.

It was difficult to avoid being "transcended" in the play at times. However, I developed a technique to critically reflect on my experiences. When the play ended, I moved to a place away from the children to take notes while frequently asking myself questions such as *How did the materials and children's movements influence the dynamics of the play?, How did the materials respond to children's actions?, How did the children's movement respond to the materials?* and *What was my role in the situation?* Although I could miss interesting situations when leaving the stage to take notes and reflect on the situations "backstage", I believe the technique made it possible to create high-quality field notes.

I attempted to follow the play, rather than be an immersed participant. However, I had to contribute to the play to be accepted as a playmate. I attempted not to introduce radically new ideas or themes but instead to follow their play. Because play is dynamic and changes directions all the time (Steinsholt, 2010), I do not think that I interrupted their play but that I took part in it. I attempted to follow the children's initiatives and take part in what they invited me to do. I attempted to hold an attitude that I was unacquainted with their play and what they enjoyed/disliked doing. However, that an adult is taking part in their play may be perceived as an acceptance and reinforce children's manners and play. At the same time, scholars point out that researchers can exploit how they affect the field because it can inform how people in the study react in other situations (Fangen, 2010, p. 265; Hammersley & Atkinson, 2019, pp. 17-18). For example, when I was a part of a group of children playing a classroom roleplay in the woods, one of the girls behaved badly toward me,

commanding me to *sit down!* and *raise your hand!* In other words, she instructed me to act how she wanted when she wanted it. I felt that it was kind of unjust to be bullied. At the same time, it was interesting from a researcher's perspective because it gave me insight into some social structures that I did not notice otherwise. The situation made me aware that she also commanded other children in similar ways in other situations later in the field work.

During the winter field work, it was at times too freezing to observe without moving. Thus, having a methodological approach and researcher role that allowed me to join the informants' play, which at times involved high-intensity play, providing me with warmth when I moved. I memorised situations and wrote them in detail indoors at the staff workroom to increase the quality of the field notes because of the cold temperature in winter.

Field talks

Interviews in ethnographic research may range from informal conversations to formally arranged meetings (Hammersley & Atkinson, 2019, p. 112). I attempted both, but my informal talks while playing along with the children provided more valuable insight. I have termed these informal conversations "field talks". The field talks were carried out spontaneously and informally throughout the field work periods and the play-along processes. The talks centred on the research questions by asking open-ended questions such as *what is going on? Can you tell me something about what you are playing? What does it taste/smell/feel like?* However, the children were more eager to turn the conversation toward themes of their own interests rather than mine. Thus, it was difficult to get responses that were of direct relevance for this project as I predefined it.

The field talks were initiated when relevant situations for the research question occurred. The children were easy to talk with, and they responded well. They often approached me with issues they wanted to share, allowing me to follow up on the subject. The talks allowed me to gain insight into children's experiences and perspectives about situations and their practices.

Field notes

The primary recording technique was writing in my notebook. I wrote field notes in a notebook immediately after situations had ended and immediately after field talks. At the beginning of the field work, I attempted to be discreet while writing. I walked around corners or hid behind trees to write keywords, quotes, and short passages. Writing with a pencil helped me be more reflexive about the situations I participated in. In line with Fangen (2010), it allowed me to write initial analysis, thoughts on what to focus on later in the field work, and methodological considerations.

My ambition when the field work periods started was to write exclusively naive descriptions. As the field work evolved, I experienced that it was time-consuming to write detailed notes while in the field, and I was afraid of missing important situations. Thus, I changed the strategy to limit the naive descriptions to significant situations and described other situations with fewer details. I believe this helped to provide both breadth and depth of the field work.

I also video-recorded and photographed situations that I perceived of relevance for the research question, using a camera with possibilities for video and still images. When video-recording situations, I sometimes experienced the camera creating a distance between myself and the situation. I was without the closeness possible with the play-along approach. However, video recordings helped me write detailed and naive descriptions of situations, such as when children climbed an icy hill (in Article II) in retrospect. In the example with the hill, I participated at first, then video-recorded the children's climbing and wrote detailed descriptions afterwards.

It was painstakingly difficult in the cold to write with pencil and thin gloves during the winter field work. Thus, sometimes I had to go inside the teacher's work room to write and warm up. Although I may have missed out on relevant situations when exiting the playground, I argue that this strategy helped me increase the rigorousness of this project by writing extensive field notes.

The field notes were elaborated on in the evenings at home on my PC. I looked at pictures, saw video clips, and recalled my memory when writing the notes in even more detail, trying to remain at a low level of abstraction by avoiding using

unnecessary categories, in line with Wadel et al. (2014, pp. 87-90). I also attempted to describe the situations with closeness to children's bodies: how their bodies moved and how they may have used their different senses. With few categories in the field notes, it is easier to re-read the material with new analytical perspectives (Fangen, 2010, p. 112).

During field work period 1, I decided that I wanted to video-record situations that were relevant to the research question. Thus, I informed the parents of the change in procedure. None commented on this. The change was in agreement with the Norwegian Centre for Research Data (see Appendix I).

Photo interview

The ambition with photo interviewing was to empower the participating children and strengthen their voice. According to Pink (2013, p. 99), photo interviewing allows individual informants to take photographs of what they consider important. I employed the method during my master's project (Sanderud, 2011). Here, the approach provided valuable information to children's places and events that I did not have access to. My ambition was to have a similar benefit in this project.

I used two cameras for the photo interviews. Two girls and four boys participated in photo interviews during field work period 1 and four girls and four boys during field work period 2. I recruited the photographers by asking them whether they would like to "take pictures of the day today" and instructed them on how to use the camera. The task was wide, because I wanted to be open for their experiences, places, and perspectives on natural environments. A similar wide task was successful during my master's project, although the children were older (Sanderud, 2011).

Because the child was more or less setting the plan for a dialogue (Noland, 2006), I hoped that it would be a way to communicate with the children that some children would appreciate. Because of the openness of the task, the children did not take my predetermined categories or preconceptions into account. In this way, Noland (2006) and Darbyshire et al. (2005) argue that informants are empowered to take an active part in data generation, and we may assume that the data represent their perspective.

Pink (2013, p. 99) and Punch (2002) point out the importance of having a dialogue about the pictures in order to create meaning about participants' experiences and perspectives. I used the informants' photographs in an interview setting with the photographers to provide a shared reference for dialogue about the situations photographed. In most cases, I conducted the interviews immediately after they had finished photographing in a place where we could talk undisturbed. Many photographers provided relatively short comments. It was difficult to get them into a dialogue about the situations they had photographed, suggesting that I did not manage to make the photo interview appealing to them. Another reason may be that they were uninterested in participating. Nevertheless, I used interview transcripts and pictures as contextual and supplementing information.

It was difficult to recruit photographers during the winter. One reason may be because of low temperatures, given that the buttons on the cameras were too small to be used with mittens or gloves. However, children's engagement with the method did not improve during the summer.

Interviews

Hammersley and Atkinson (2019, p. 107) point out that there is a potential for substantial advantages in combining interviews with participant observation. My ambition with both the photo interviews and the interviews was to use data from each to illuminate the other methods.

Although Hammersley and Atkinson (2019, pp. 108-112) suggested selecting informants depending on how they may inform the research question, I invited all the children that were present that day to interview. The reason for this was to treat all children equally and avoid a potential ethical problem in denying some children the experience of coming into focus, being interviewed, seen, and heard.

Hammersley and Atkinson (2019, p. 122) point out that it is common in ethnographic interviews to create a list of issues to discuss with the interviewees while following the natural flow of the conversation using open-ended questions. I typically started with open-ended questions with the ambition to get children to provide a narrative or description. Still, in many cases, I got short answers with little relevance. Thus, I

narrowed my questioning. Although the children provided interesting information, it was difficult to validate their answers because I felt that I influenced many of their answers. I tried to make the situation welcoming by providing paper and pencils to draw while talking. Sometimes I asked questions about what they drew to centre the conversation about a theme they were interested in.

I conducted the interviews in the teachers' office. I selected the location because I wanted to talk undisturbed, and the headteacher of the department suggested this room. However, I experienced that it was difficult to create a conversation about themes that I wanted to discuss in the formal interview setting. Hammersley and Atkinson (2019, p. 105) argue that it is not uncommon for ethnographers to have difficulties going beyond observation and collecting informal utterances. In retrospect, I see that the location where I conducted the interviews may have constrained children's ways of expressing themselves. It was a place they rarely were, and it may relate to the teachers' domain. However, there were few other indoor places for us to be undisturbed. I feared that conducting the interviews outdoors could be open for disturbance from other children, many temptations to do other things, and the audio recordings could be disturbed by noise. The short answers and difficulties in talking may be because I had not situated the interviews properly or tuned the questions sufficiently to children's "culture of communication" (Christensen, 2004, p. 166) or that some of the children just wanted to do something else instead of talking with me. On the contrary, conversations carried out as informal talks while being outdoors and on the move, referred to as field-talks, provided interesting statements and reflections by the children. Thus, the interviews ended up being used primarily as contextual information.

Operationalising play

In short, play may be defined as something children are voluntarily transcended into and happens with children as a group or between children and materials. Thus, it may be difficult for researchers to know when children play or attend to something of their interest. However, I narrowed my observations to situations where children seemed engaged with each other and/or features of the natural environment while receiving little direct influence from teachers.

When I wanted to talk with the children, I attempted to avoid interrupting their play. Thus, I initiated field talks when it felt, for example, as if children were walking or seemed to be shifting between things to do.

Analytic strategy

Although scholars argue that analysis is an ongoing process from the start of a project to the end of it, I use the term "analysis" with respect to the processes of analysing after having completed the field work periods.

Rather than being a step-by-step procedure, ethnographic analysis has hermeneutic qualities as it is "a dialogue between ideas and data, between the concrete and the abstract, the local and the generic" (Atkinson, 2017, p. 166). Scholars share the view that analysis is a continually ongoing process that is not straightforward to describe in detail (Fangen, 2010, p. 232; Hammersley & Atkinson, 2019, p. 167; Pink, 2009, p. 119). I admit that I find it difficult to describe in procedural details. My analysis process shares characteristics with children's play: it moves between field notes, transcripts, video clips, theoretical concepts while ongoingly writing, reading, structuring, rewriting, rereading, and restructuring. The analyses, new insights, and knowledge evolve along the written lines and the structure of the texts. However, I will attempt to explain how I have proceeded in this chapter.

One central premise of my analysis and engagement with the data is that I treated the data "as materials to think with, to facilitate the production of new ideas and [...] clarify and develop ideas derived from research literature and from elsewhere" (Hammersley & Atkinson, 2019, p. 167). I used the empirical material as a means to think with and communicate with existing theories and concepts, including those I have developed, to make sense of the field work periods. In the process, I elaborated the data and theories into new insights about children's meaning-making in natural environments by merging new and existing ideas and concepts (cf., Alvesson & Sköldberg, 2018, p. 369; Atkinson, 2017).

One central concern of my analysis was developing valuable and new ideas. Atkinson (2017) argues that new ideas do not rise from re-readings of the data alone. They need other ideas to build on. The theories I brought into the project are presented in

the theoretical framework (Chapter 2), although I modified my understanding of the concepts throughout the research process. However, I discovered that the framework was insufficient to understand the research questions through writing the articles. Thus, I searched for other concepts used in the different articles to make sense of the data in line with Atkinson (2017). I also brought values into the project, which I have elaborated in Chapter 4.1.

I was concerned with relationships between local manifestations and generic ideas in my articles, referred to as "abductive reasoning" by many, including Atkinson (2017). My analytical journey has wandered back and forth between theoretical ideas and empirical data and experiences. I argue that I have found some productive conversations between data and theory in this process.

Coding

As Hammersley and Atkinson (2019, p. 166) point out, memory alone is not adequate for the subsequent analysis. Thus, I wrote detailed field notes using a few abstract terms each afternoon, resulting in comprehensive field notes. Indeed, I felt that needed to organise and make sense of the data. Coding is one way to make sense of the data.

Coding may be organised in different ways. I coded the data manually using Nvivo 12. One advantage of using Nvivo is the possibility to link different sources of data. Situations described in the field notes were linked with relevant pictures and videos. Pictures and videos that were of special interest for the research questions were transcribed and coded.

There are many approaches to coding data (Hammersley & Atkinson, 2019, p. 165). However, my coding was inspired by Hammersley & Atkinson (as presented in Fangen, 2010, p. 112). Initially I coded the material using broad descriptive categories to get an overview. My categories included different play forms, places, materials, and roles relevant to the research questions and the theoretical framework. In line with Hammersley & Atkinson, some data was included in several categories. Later, I divided the categories into narrower codes, such as "Isak sliding headfirst" and "Berit is picking flowers", to get a closer sense of "reading" the data and condense meaning.

This way of coding and categorisation made it easy to get an overview of the material from multiple data sources. Simultaneously, coding in Nvivo made it easy to return to original excerpts in the data to re-read passages or re-view pictures or videos of situations. To use Hammersley and Atkinson (2019, p. 164) words, it provided me with an "important infrastructure for later search and retrieval".

Although some ethnographers restrain from using the term "coding" because survey researchers use the term to refer to assigning data to predefined categories (Hammersley & Atkinson, 2019, p. 177), I find the term useful to describe the process where I "condensed" data to make them graspable. Another reason why some ethnographers refrain from using the term is that coding is regarded as a process of splitting the data and thereby losing a holistic perspective on the events, relationships, and contexts (Hammersley & Atkinson, 2019, p. 177). However, I experienced the coding and categorisation helped me to see a broader picture and move from completing to contrasting and comparing situations. Additionally, it helped me to shift between an overall perspective and impressions and an in-depth exploration of situations. The use of categories to get an overview and become familiar with the material may also have functioned as, inspired by Atkinson (1992 in Fangen 2010, p. 112), a conceptual web that led my ideas in specific directions.

Throughout the coding and categorisation, I repeatedly asked myself *What does this mean for my research question?* as suggested by Hammersley and Atkinson (2019, p. 172).

From codes to common patterns

The coding identified themes, or categories (Hammersley & Atkinson, 2019, p. 165), appearing as a pattern but signifying diversity and conflicting or ambivalent ideas. Although it is contested whether coding and categorisations are fruitful to generate theories (e.g., Maxwell & Chmiel, 2013), it helped me gain an overview of the data and helped me think with the data.

I re-read field notes in relation to the theoretical framework, created new codes, and found new theoretical perspectives that illuminated the data and research questions

in ways that clarified the research questions. In the process, I created different analytic paths through the work with every article.

Article II expands on three analytic patterns, although I term them “key themes” (see next section) in the article. The three analytic patterns demonstrate different aspects of being-and-becoming a child well-versed and immersed in the climate and features of the natural environment during play in the winter environment.

Article III expand on a pattern in the data that demonstrate how the teachers practiced didactic sensitivity towards children and place.

Writing with empirical examples

Every article is equipped with a primary empirical example. However, in Article II, there are examples connected to each category. The examples have a function similar to a “key event”. Key events are typical situations of a culture that can be used to analyse an entire culture (Fetterman, 2020, pp. 107-109). The key events were selected because they illustrated common situations in the field work periods. They function as a starting point for a detailed analysis of the specific situation and the culture in general and provide the reader a glimpse into the field work periods. By investigating specific situations in light of the theoretical framework and conceptualising new ideas, I argued inductively from empirical examples towards generic theories. This way of arguing may align with how Atkinson (2017, p. 169) suggests that theories may be used to develop generic understandings from cases. Inspired by Alvesson and Sköldberg (2018, p. 167), the examples may be seen as “parts” that influence our understanding of the “whole” field, to use hermeneutic terminology.

I hope the “key events” are familiar to many readers known to the Nordic kindergarten tradition and winter conditions. Thus, the examples help this project closer to what Richardson refers to as “good ethnography” because the “key events” express a reality that seems to be “a credible account of a cultural, social, individual, or communal sense of the real” (Richardson, 2000, as cited in Tracy, 2010, p. 842).

Seen together, the examples in the different articles represent a breadth in the field work periods. I have analysed situations and excursions carried out in different

environments, seasons, and weather during this project. I investigated how the children became well-versed "winter children" through self-governed play during the cold, dark, snowy, and icy winter (Article II) and what conditions they play under during a visit to a beach on a warm summer day (Article III). In line with Fangen (2010, pp. 269-270), I briefly presented other situations to point out contradictory or confirming aspects of the field work periods relevant to the research sub-questions in the articles.

Three levels of interpretation

I turned to Fangen's (2010, p. 208) three levels of interpretation to analyse the data.

The first level is about describing what is seen, heard, or sensed (Fangen, 2010, pp. 208-211). I described situations from the field notes in detail using a low level of abstract terms. Thus, my ambition was to provide a detailed account as loyal as possible to the movements, materials, and context of children's play. Close to what Fangen describes as "experience-near descriptions" (Fangen, 2010, p. 209). For example, the observation of a boy hammering on ice with a stick (see Article II) is an example of a first-level, or a "thin", description because it merely describes what was observed. However, it is difficult to interpret the meaning of the hammering without any contextual information. For example, it may be interpreted as anger or frustration. It is essential to see the action in its context to give a valid interpretation of what it means (see Fangen, 2010, p. 213). Other interpretations are possible by adding contextual layers. For example, in this case, the boy's hammering was situated in a play context: One of the boy's concerns was gathering a chunk of ice and delivering it to a girl. The girl was happy to receive the ice chunk. Thus, the action may be interpreted as a social act being a part of their play. Seen in this light, the hammering was not a sign of anger or frustration but a part of the play and preceded him handing over a gift. The contextual layer is an example of descriptions of what children say, do and how peers act and talk in the situations that shed light on the "thin descriptions".

Contrary to thin descriptions, "thick descriptions" are at the second level of interpretation. A "thick description" includes analytical concepts to describe situations. Thus, I am not only re-telling my observation and conveying the

participants' common-sense understandings but also interpreting what is going on (Fangen, 2010, pp. 211-222). In the articles, I have attempted to carefully identify children's quotes, observations, and meanings and my interpretations.

The third level adheres to a critical perspective on the motives and agendas of the children (Fangen, 2010, pp. 222-231). In Articles I, II, and III, I had a critical perspective on the motives and structures the children played within. In Article I, children's curiosity was interpreted as a fundamental motivation/driving force in children's play compared to the risky play discourse that is dominating many studies on children's need for outdoor play. In Article II, I analysed how the environment and materials influence and interact in children's play. Thus, they may be read as a "structure". In Article III, I analysed how teachers and places function as conditions in children's play in natural environments. Thus, they may be read as a "structure".

Supported by Alvesson and Sköldberg (2018, pp. 332-339), I included contrasting theoretical perspectives in the analytic process that have inspired my thinking about the data and the perspectives. In Article I, I developed a critical perspective on risky play. In Article III, I developed a critical perspective on contemporary trends in educational policy.

4.4. Summary of the design

I have created Table 2 to summarise the relationships between the main research question, the different sub-study's research questions, design, methods, and analytical strategies. In Article IV, I have analysed my personal experiences as a field worker and theoretically explored the "mutual experiences"/play-along approach. In Article I, I reanalysed key events published in my master's thesis considering what I regarded as a dominant but insufficient debate on children's play in natural environments.

<table>
<tr><td>Main research question</td><td colspan="4">What does natural environment mean for children's play and how do children create meaning during play in natural environments?</td></tr>
<tr><td>Sub-research questions</td><td>What are the driving forces in in children's play in natural environments as seen from children's perspective?</td><td>How can children's embodied experiences with nature be explored methodologically?</td><td>How do children build understandings of themselves and their environment during self-initiated play with nature materials?</td><td>What characterises teachers' outdoor didactics in self-governed play and growth as these appear in a nature kindergarten?</td></tr>
<tr><td>Article no.</td><td>I</td><td>IV</td><td>II</td><td>III</td></tr>
<tr><td>Field work</td><td rowspan="2">Re-analysis of empirical examples.</td><td rowspan="2">Experiences from Field work period 1 and re-visiting field work experiences.</td><td>Field work period 1</td><td>Field work period 1 and 2</td></tr>
<tr><td>Methods</td><td>Participant observation, field talks, play-along and photo interview.</td><td>Participant observation, field talks and play-along.</td></tr>
<tr><td rowspan="3">Analytic strategy</td><td rowspan="2">Theoretical development and conceptualisation of curious play.</td><td rowspan="2">Theoretical development and conceptualisation of the play-along approach.</td><td colspan="2">Coding, categorisation and synthesising of data sources.</td></tr>
<tr><td>In-depth analysis of three common patterns.</td><td>In-depth analysis of empirical key events.</td></tr>
<tr><td colspan="4">Three levels of interpretation.</td></tr>
</table>

Table 2 shows relationships between the main research question and the different sub-studies' analytic strategies employed.

4.5. Quality assessment

There are many understandings of quality in qualitative studies. I am inspired by Fangen (2010, pp. 236-256) and emphasise validity and transferability as central concepts for quality.

Validity

Fangen (2010, p. 237) points out that validity is a question of whether researchers investigate what they are supposed to investigate. She argues that ethnography entails high validity because ethnographers attempt to blend in situations and observe situations that occur naturally. However, ethnography includes the researcher's involvement with and influence on the phenomenon he is investigating (Hammersley & Atkinson, 2019).

Because the act of research shapes the field under study, it is important to determine whether one is investigating the intended issue. "Reflexivity" is a concept that is about the researcher's continual critical self-reflection to recognise and take responsibility for how he is situated in the field, different ways he influences

situations and the people being studied. Reflexivity is also about being self-critical to the questions being asked, the data being created and how data are interpreted. In sum, reflexivity is considered a core element for quality in qualitative studies (Berger, 2013, p. 220) and critical in studies where the researcher has a high level of participation, for example, my "play-along" approach.

I have attempted to show my reflexivity throughout the research process. Writing in first person is one strategy I have selected to be transparent about my rationales, choices, involvements, and challenges through this thesis. The strategy is supported by Berger (2013, p. 222). Fangen (2010, p. 265) points out that it is common to show researchers' position in the field and their voice in contemporary studies using field work.

Peers are valuable when validating studies (Fangen, 2010, p. 241). This project has been carried out in a scientific community (see p. ii) that includes peers commenting on and discussing different parts of this project. I have discussed the theoretical framework, design, interpretations in general and related to this study in particular with my supervisors and co-authors. Peers at conferences and in research groups, reviewers in scientific journals, and the mid-term evaluation have provided valuable and constructive comments that shaped my understanding throughout this project. I have had room to make the final judgements and choices.

Writing is inevitably closely related to analysis. Thus, it is no single best way of writing, nor is it a mechanical exercise. However, how we write is important for how others interpret the presented situations (Hammersley & Atkinson, 2019, pp. 198-213). Therefore, I have strived to write in excellent academic language and have collaborated with professional copyeditors. However, writing in my second language with a lesser-tuned vocabulary may have caused me to reduce nuances unintentionally. Nevertheless, I have intended to make this project's insight available, negotiable, and relevant to an international audience.

Transferability

During my years in academia, I have met many peers who question if findings from qualitative research can be used in other contexts. My ambition with this project is

that my findings may be applied to other similar contexts. For, as Leseth and Tellmann (2018, p. 139) point out, findings from qualitative research must apply to other situations and contexts if they are to be valuable contributions to social science.

It is contested whether the researcher should argue for a study's generalisation or if it is up to the readers to evaluate whether the findings may be applicable to other contexts. The idea that it is up to the reader to evaluate a study's relevance is often referred to as transferability (Fangen, 2010, p. 255; Maxwell & Chmiel, 2013). I have attempted to lay the foundation for readers to evaluate my research by being transparent and explicit about my field work, methodological approach, and analysis.

A different way to make research applicable to related situations is by theorising the findings (Maxwell & Chmiel, 2013). By being in a dialogue between the theoretical framework of each article and my empirical field work, I created new theoretical concepts about children's meaning-making in natural environments (see Articles I, II & IV). My way of conceptualising is closely linked with Kelle's (2013) point that theorising includes transferring middle-range concepts to other domains. It is also linked with Atkinson (2017, p. 166) arguing that ethnography uses theories as a starting point for dialogues between data and theory that may generate new ideas. For example, Ingold's theoretical concepts of "dwelling" and "correspondence" are threads that runs through my project. I use them, and other theories, to generate new middle-range concepts about children's meaning-making in kindergartens. Thus, I theorised the findings by transferring Ingold's work to a new context and creating new concepts that may inspire other researchers.

4.6. Ethical considerations

Norwegian National Research Ethics Committees require researchers who research with/on children to provide information in an understandable language (NESH, 2016). I handed out a letter written in simple language for the parents to read aloud to their children. In this way, I informed the children of the field work periods before I arrived, and they could object to their parents (see Appendix II).

I also provided the parents with a letter containing information about the study's background and aims, what participation may mean for the individual child and

families, how the observation was going to be conducted, how I planned to treat the data, and that participation was voluntary and that they could withdraw whenever they wanted. The teachers assisted me in handing out and retrieving the documents (see Appendix II).

All teachers and parents of every child in the department gave written consent to participate in the study.

Fictious names have been used to protect the privacy of children and teachers. Pictures used in presentations have blurred faces.

This study is approved by the Norwegian Centre for Research Data, no 57398 (see Appendix I).

4.7. Author's contributions

I took the initiative and had the main ideas of the study and its design and was the driving force of the project's progress.

I developed the theoretical framework by introducing theoretical concepts and research literature based on broad readings and systematic searches in databases.

I planned, organised, and undertook the field work and conducted the empirical analyses.

I have initiated, designed, and written the first drafts of every article and edited the drafts after discussions with the co-authors.

The international research community have a common understanding of what qualifies for authorships (International Committee of Medical Journal Editors, 2019). The authors of the articles have contributed by substantial discussion of the research design, critical examination, and substantial discussions of interpretations and data analysis. They have revised the manuscripts critically for intellectual content and have approved the final version of the manuscripts before submission and publication. The contributing authors qualify for authorship regarding the Vancouver Convention.

My supervisors have provided critical feedback and participated in discussions throughout this project.

Chapter 5: Analyses and insights from the Sub-Studies

The four sub-studies have been published as articles in international peer-reviewed journals. Together they illuminate different aspects of this project's overall research question: What does the natural environment mean for children's play and how do children create meaning during play in natural environments?

The presentation of the articles below does not follow the chronology of publication. Instead, they are presented thematically. First, in Article I, I present the theoretical framework conceptualised as "curious play". In Article II and III, I present the empirical analysis of children's play during the winter and summer, respectively discussion the children's responsiveness to environmental qualities and to the didactic practice of the kindergarten teachers. Finally, in Article IV, I critically address the researcher's role and possibilities of grasping the children's perspectives.

The organisation reflects the hermeneutic dialogues of interpretation, analysis, and writing characterising the research process. Thus, the research process has not been a linear process, but instead characterised by back-and forth processes between theory-empirics, question-reflection, analysis-synthesis, parts-wholeness.

I. Curious Play

Gurholt, K. P., & Sanderud, J. R. (2016). Curious Play: Children's Exploration of Nature. *Journal of Adventure Education and Outdoor Learning, 16(4),* 318-329.

In Article I, I critically discuss the risky play discourse with an alternative understanding I develop and conceptualise as curious play. The main arguments in the article show how children are driven by their curiosity to explore and embody different relationships with other children and the surrounding natural environment by using their senses and movements.

I investigate what drives children's self-governed play in natural environments during a warm and sunny summer week. I reanalyse examples from an ethnographic field

work period in which I studied children's self-governed play and exploration during a family camp. Additionally, I developed a new concept and theoretical understanding that I intended to deepen and develop through this doctoral thesis.

In the article, I show that children's play in natural environments holds an exploratory character. For example, climbing a tree is not only about arousal connected with seeking risky situations. It may also be about mastery of one's body, about experiencing gravity by balancing, being in a state of balance and out-of-balance. I suggest that children's play may be about investigating questions such as *What can I do? Who am I? How is the world created?* and *How can I make an impact on the world and vice-versa?* I do not suggest that the children ask these questions explicitly, but rather that they explore them through their embodied actions. Thus, self-governed play creates existential understandings of themselves and their environment where curiosity is a central component motivating children's self-governed play.

Children are conceptualised as active explorers and playful agents embodying and creating knowledge, skills, and understandings of themselves and their social and physical surroundings through bodily engagement in situations using available resources.

I develop the concept of "curious play" as a theoretical framework emphasising curiosity as a driving force for children's self-governed play. Curious play is a comprehensive and existential approach to children's play where the interplay between children and features of the natural environment is at the core.

Children's meaning-making is driven by a curiosity about who they are and their possibilities. Thus, the meaning-making is an exploratory process driven by curiosity to investigate unknown environments, the possibilities of their bodies, and become familiar local environments.

Article I contribute to this study with a theoretical perspective on children as curious about their position in the world and embodying understandings of their possibilities within it.

II. Winter children

Sanderud, J. R., Gurholt, K. P., & Moe, V. F. (2020). 'Winter children': an ethnographically inspired study of children being-and-becoming well-versed in snow and ice. *Sport, Education and Society, 25(8),* 960-971.1-12. Published online: 2019.

Article II provides insights into how natural environments always change due to weather, seasons, and children's use. Additionally, the article provides insights into what environmental changes may mean for children's play, exploration, and growth during self-governed play in severe winter environments. Further, children are argued to be active and competent subjects that make themselves familiar with local natural environments while at the same time growing skills as being-and-becomings.

The data stems from Field work period 1, and I analysed it by following Fangen's (2010) three levels of interpretation. I categorised common patterns in the data into three themes.

In the first theme, I discuss the everchanging qualities of snow and ice as materials. In addition, I show how features of natural environments, such as ice and snow, play a part in conditioning children's self-governed play and meaning-making while at the same time becoming shaped by children's play. When children respond to and build understandings of how to respond effectively to challenges and unpredictability, they mature and grow competencies essential to lead a life in local natural environments. Thus, children learn to deal with unexpected moments and to trust themselves.

In the second theme, I discuss the kindergarten's snow-covered playground as attractive and challenging from the children's perspective. One important reason is that it is observed to change between seasons, throughout days, and because of children's use. Their everchanging qualities make natural environments partly unpredictable and partly seasonally rhythmic resulting in various possibilities to play and move that occur and disappear.

In the third theme, I discuss how children increase their competence in the dynamic winter environment through self-governed play. While playing, they embody

existential knowledge and skills about, for example, snow and ice, that characterise the local natural environment and cultural context in which they live. Thus, they familiarise themselves with their local environment in playful engagements with the weather and seasonal conditions they live within.

III. Didactic sensitivity to children and place

Sanderud, J. R., Gurholt, K. P., & Moe, V. F. (2021). Didactic sensitivity to children and place: a contribution to outdoor education cultures. *Sport, Education and Society*. Published online 2021.

Article III shows how teacher's condition and facilitate the relationships children play with using a sensitivity towards children and places conceptualised as didactic sensitivity. The freedom children are provided with provides them with possibilities to curiously explore the natural environment.

I analysed the data from the field work by following Fangen's (2010) three levels of interpretation. I suggest that the teachers demonstrated didactic sensitivity towards children and places in their praxis when they organised and facilitated growth through self-governed play.

Didactic sensitivity entails the teachers' delicate sensitivity and responsiveness towards children's needs, interests, and curiosity on the one hand, and children's possibilities for play and exploration in natural environments on the other.

Because children's self-governed play, meaning, and exploration evolve in relationships with environmental features, facilitating for children's growth requires teachers' didactic competence, local knowledge, and opportunities for daily interaction with natural environments. The approach demands a high standard of teacher's professional wisdom, know-how, and contextual sensitivity.

By developing didactic thinking and practices sensitive to local contexts and possibilities, teachers become better equipped to address kindergarten's cultural diversity, multiplicity, and complexity rather than using predesigned learning programs.

IV. Mutual experiences

Sanderud, J.R. (2020). Mutual experiences: Understanding children's play in nature through sensory ethnography. *Journal of Adventure Education & Outdoor Learning, 20(2),* 111-122. Published online: 2018.

In Article IV, I suggest that researchers may investigate children's self-governed play in and with natural environments by playing along with the children.

When playing along with the children, researchers may create insights into children's experiences, perspectives, actions, and utterances that is difficult to obtain through other approaches, such as interviews. I have conceptualised the play-along approach as mutual experiences.

Mutual experiences connote experiences that are "similar", "intersubjective", "understandable" for the researchers. Thus, "mutual" does not mean that the children and I had "identical" or "equal" experiences. For example, some experiences I had in the winter environment resonate with my previous experiences with hiking or playing as a child, for example, how vital it is to move to stay warm and the tickling sensations when sliding down icy hills. However, it does not mean that I and children sliding in the kindergarten had identical experiences with sliding.

The article draws on my experiences with ethnographical field work periods during different seasons and theoretical perspectives on sensory ethnography. I situate a perspective on sensory ethnography and participatory observation in studying children's self-governed play in and with natural environments.

The approach builds on the premise that children are individual subjects with perspectives on their lifeworld. One focus of the approach is to consider what the children, not merely the researcher, find important. Thus, children and researchers are co-producers of knowledge of children's play and children's perceptions of natural environments.

Synthesis of sub-studies

I have analysed the sub-studies and synthesised their primary results into three main insights: I) Children are curious, active, and competent subjects. II) Children's

possibilities for play and exploration always change in natural environments. Thus, natural environments represent an open horizon of different movements, play, creativity, and transformations children may engage in. III) Outdoor play is an existential endeavour.

Table 3 illustrates how the main research question, the sub-study's research questions, and insights from the articles point towards three main insights. The organisation derives from a hermeneutic analysis of the different articles in light of the overall research question, studies of children's outdoor play, and the theoretical framework elaborated in Chapter 2. Seen together, this study's main insights illuminate three aspects of how and what meaning children create about themselves and the natural environment through self-governed play.

Horizontally, Table 3 presents the central insights from the four articles, emphasising how each of these correspond to this study's main research question. Vertically, I present how the sub-studies illuminate this study's three main insights presented in three respective columns and how they relate to this study's main research question.

The synthesis of the sub-analyses functions as a bridge to the general in-depth discussion of the three main insights in Chapter 6.

Main research question:	**What do natural environments mean for children's play and how do children create meaning during play in natural environments?**		
Main insights:	**1. Children are curious, active, and competent subjects.**	**2. Children's possibilities for play and exploration always change in natural environments.**	**3. Play is an existential endeavour.**
Article I **What may be driving forces in children's self-governed outdoor play?**	Children explore and play with the basis of their worldview. Children are active subjects investigating the world based on their understandings, knowledge, and skills. During self-governed play, children follow their own and other children's immediate responses to the weather conditions and the possibilities for play offered by the natural playgrounds, and ways of moving and ideas uttered by other children and adults.	The children played in a sunny, warm, and light summer environment. The seasonal and weather conditions made it possible for the children to play with light clothes, water, and taste berries, which were ripe at this time of the year. Children tried out different possibilities for play and exploration that they might not know the outcome of when, for example, climbing trees, tasting berries, and playing with water.	Curiosity drives children to investigate their relationships with environmental features using their body and senses. Children experience, embody, and create understandings of local natural environments through reiterative embodied and hermeneutic exploration. The exploration responds to questions such as *Who am I? What can I do? How is the world constructed?*
Article II **What kind of movements, experiences, and meaning do children create with winter materials, such as snow, ice, and cold?**	Snow and ice are examples of materials that contribute to children's play by offering new and multiple ways to play. Although the conditions are demanding, children play with spontaneity and enthusiasm as during summer. Children grow skills and understandings while at the same time becoming bodily competent, skilful, and experienced. Children's understandings of their physical, cognitive, and social limitations and possibilities expand as they explore and weave a meshwork that ties them together with local materials and other children.	Children play in extreme winter conditions characterised by twilight, snow, ice, and freezing temperatures, making it possible for children to slide, play with ice, and climb icy hills. Natural environments consist of various features that change due to weather, seasons, and children's play. For example, the sliding hill transformed from snowy to icy due to the sliding of the children. New and changing affordances, such as snow changing to ice, inspired, and affected children's play.	Children are continually creating meanings about who they are and who they are about to become by engaging with the natural environment In environments that change due to weather, seasons, and children's play, children have nearly endless possibilities to create play worlds and play forms. The children adapted to changes in the environment by moving, playing, and dressing in response to changes and patterns in weather, seasons, and conditions.

Article III **What educational values characterise teachers' outdoor didactic practice in self-governed play and growth as these appear in a Norwegian nature kindergarten?**	The children are trusted as subjects within cultural and environmental frameworks established by teachers and the institution. The children are allowed and encouraged to play freely in diverse conditions and environments. For example, at a seashore, on slippery grounds, and in rough environments. The freedom provided allowed children to live in the Nordic climatic and cultural conditions. They learned to master cold, windy, and wet weather by engaging with the environment on their own terms. They learned how to move to stay warm and shift positions in icy and rugged terrain that are essential for living in their local environment.	Children are situated in everchanging natural environments by teachers and institutions. Teachers create and inspire possibilities for play and exploration by selecting and/or adjusting natural environments. For example, by adding materials such as landing nets. The children played in a sunny, warm, and bright environment during summer that, together with the teachers, allowed them to play in the water at the seashore and taste roots with a distinct taste at this season.	Children create meaning in a space sensitively created by teachers' praxis and outdoor educational culture.
Article IV **How can researchers explore children's embodied experiences with nature methodologically?**	I initiated a "play-along" approach following the children's initiatives and respecting them as subjects. For example, I respected their skills, knowledge, and ideas about ways to move and use natural environments as a source for information about children's life-worlds. Children demonstrated a familiarity with the natural elements of various seasons, the harsh Nordic climate, and diverse qualities of the ground. They demonstrated better bodily control than the adults when roaming in icy and rugged terrain.	The field work periods were designed so that it became possible to study children's outdoor play in the same place in remarkably different conditions due to different seasons. I took part in children's play in a sunny, warm, and bright environment during summer and a cold, snowy, icy, and dimmed environment during winter.	As part of the play-along approach, the researcher was introduced to play forms and interactions with natural environments. This provided insight into how children used their bodies to negotiate the world when, for example, moving across challenging terrain or tasting berries. Children make sense of the world from their perspective.

Table 3 presents connections between the main research question, the sub-research questions, and this study's main insights. Horizontally, I present the main results from the articles. Vertically, I present this study's main research question, followed by this study's three main insights in respective columns. The three main insights will be discussed in Chapter 6.

This study's three main insights result from synthesising all articles in the vertical columns in Table 3. The main insights represent three aspects of how children create meanings about themselves and natural environments during self-governed play.

First, the articles display that the didactic practice in the kindergarten respects the children and allows them to act as competent, trusted, and skilled individuals and groups. Additionally, the articles show that children are given plenty of opportunities to play and explore on their own.

Second, the articles show how natural environments always change due to weather, seasons, and children's play. Additionally, children's perspectives on how they can play and what they can explore in natural environments change as they grow. The everchanging character of natural environments provides a special condition for what kind of meaning children may create during self-governed play.

Third, the articles argue that children curiously investigate relationships with local outdoor materials by moving and sensing the local nature and other children while playing. They create understandings of themselves and their environments through hermeneutic explorations of what they can and cannot do in relation to environmental features, including hills, trees, and ice. The teachers condition children's self-governed play by performing a didactic sensitivity directed to the relationships among groups of children, individual children and the environment.

Chapter 6: General Discussion

This chapter is structured around the main insights derived from the synthesis of the empirical investigations, theoretical framing, and methodological reflections in Chapter 5, illuminating the core insights responding to this project's main research question. The insights derived from the synthesis emphasise that 1) children are curious, active, and competent dwellers exploring issues about themselves and their surroundings based on their perspectives while playing outdoors; 2) children's possibilities for play and exploration always change in natural environments that are everchanging due to changes in seasons, weather, and children's play, and because children's perceptions of the environment change; 3) children's play is an existential endeavour. They create existential experiences about themselves and the physical and social environment relationally by playing with different environmental features, such as trees, berries, ice, and snow.

6.1. Children as curious, active, and competent subjects

One theme that runs through the articles is that most of the children appeared as active, curious, and competent subjects when given the time and space for self-governed outdoor play in the public kindergarten. I show how children are curious and active subjects that may investigate themselves and their surroundings depending on teachers' didactics.

The teachers the children and permitted them to follow their interests, ideas, and responses. Thus, the children had opportunities to create meaningful experiences and make decisions based on their interests in the moment. The teachers intuitively knew how to approach children and environments sensitively to facilitate growth that the children seemed to find meaningful. They provided children with the freedom to follow their initiatives when playing and exploring. Within the open-ended frameworks, the children in this study had the opportunity to explore diverse ways to use their bodies in correspondence with one another and environmental features such as ice, berries, and trees. The teacher's didactic approach allowed the children to play out and explore their ideas, perspectives, and skills while at the same time being in a continual exploratory process stimulating growth. They explore and embody their relationships with natural environments, other children, and adults while

playing. The openness of the didactic approach became apparent when children took initiatives to play individually and in groups. While some children expressed joy, others expressed dissatisfaction, imagination, and creativity. Children described the taste of ice “like chocolate” and the ice’s appearance “like an ice-mountain”. Thus, they communicated using expressions built on previous experiences, understandings, events, and cultural perceptions created with their surroundings that are central to hermeneutics (cf. Gadamer, 2012).

At times, the children I observed in this study seemed more confident on slippery ice and steep cliffs than the adults, expressing self-confidence in their bodies moving fast and with ease in demanding natural environments. Children’s embodied confidence in moving on rough and icy terrain illustrates how they are dwellers that move, play, and grow based on the experiences they embody and the movements they develop and have learned to master. They have embodied acting, moving, and utilising features of the environment through previous experiences. One result for many children is a sense of confidence that *I can*! Merleau-Ponty’s (2014, p. 137) concept of the intentional arc may explain children's confidence and how they move.

The intentional arc describes how people perceive ways they can and cannot move based on their perception of the physical situation, human milieu, previous experiences, and perceptions of possible future movements. Inspired by Merleau-Ponty, the intentional arc creates a unity of the senses and underpins children’s consciousness about what they can and cannot do related to their surroundings in the current situation. Let me add that children may also perceive what they might manage here or in the future. I interpret Merleau-Ponty as holding a perspective on people, including children, as active subjects with the ability to decide what to do situated in time and place based on their previous experiences, the particular situation, and an open horizon. Although Merleau-Ponty does not emphasise children, his perspective on the intentional arc is used in others' studies of children’s outdoor play supporting similar interpretations. For example, Pedersen (2019) argues, with reference to the intentional arc, that cultural expectations children experience influence how they perceive possibilities for play. I expand on Merleau-Ponty (2014) and apply his perspective on play in natural environments. Interpreted

in the light of the intentional arc, children have a sense of where they may climb, whether the branches they climb will support their body weight, and whether they will fall or not. The intuitive sense of their capabilities is always situated in an environment and, inspired by Ingold, occurs in relations with environments. For example, the children in this study demonstrated different competencies from the adults in some areas, suggesting differences in their abilities and perceptions of what they could manage.

In general, the children in this study took initiatives for different ways to play and demonstrated various competencies in correspondence with the environment (cf. Ingold, 2013, pp. 105-108). For example, as I explore in Article IV, children tasted roots, while others waded at the seashore. However, some took fewer initiatives and did not manage every situation, showing various competencies and initiatives among the group of children. The point is that the children appeared as dwellers actively weaving themselves with the environments, creating individual ideas, perspectives, and meanings about what to do and how to do it; key to this is that what they did had a meaning for them. The point that children find ways and places to play by following their initiatives and fantasies, such as impulses and something that catches their attention in the moment, is supported by, for example, Jørgensen (2016). Jørgensen found that children's fantasy, creativity, and imagination are important elements in outdoor play that cannot be separated. One implication of her study is that children give meaning to their play and find ways to use and interpret the environment inspired by their perspectives and their ways of expressing themselves. Drawing on Merleau-Ponty, Pedersen and Moe (2020) point out that children's playful movements take children's habits as the starting point. Thus, they imply that children's perspectives and skills are important components in how children play. Drawing on Ingold's perspective that people are interwoven in social and environmental meshes, I argue that relations between children and natural environments are other important aspects.

I lean on the relational dimensions in Ingold (2000), Merleau-Ponty (2014), and Gibson (2014) when I find that children perceive ways to play and explore in natural environments related to their previous experiences, interests, current situations, and,

of course, the physical environment. Inspired by Merleau-Ponty (2014), children's past experiences interact with present sensations when perceiving ways to play in diverse natural environments. Waters (2017) argues that children perceive affordances based on the sociocultural context, including previous experiences, cultural norms, and cultural expectations they are a part of. In sum, I find that children are autonomous and competent dwellers perceiving ways to play relationally from their perspective. Possibilities for play occur in correspondence with environments, previous experiences, and future possibilities mediated socioculturally. Thus, this study shares a perspective on children as competent and skilled with a growing body of empirical studies from different fields (cf., Pedersen & Moe, 2020; Sommer et al., 2010, p. 160; Uprichard, 2008; Waters, 2017).

However, this study's perspective on children differs from child perspectives found in discourse on physically active play, for example. Alexander et al. (2019) point out that recent initiatives attempting to increase the duration and intensity of children's physical activity levels have grown in western countries. These initiatives are a response to the increase in child obesity and governmental concern over increasing healthcare costs. Similar initiatives are also emerging in Norway. One example is the Active Learning Norwegian Preschool(er)s (ACTNOW) study. The dominant language Aadland et al. (2020) used when describing the design of the ACTNOW study indicates a child perspective where children have little influence over the agenda and aim of the physical activity sessions. For example, play and movement are expressed as physical activity and instrumentalised as something teachers control in terms of intensity and duration by deciding when, how, and for how long children are to perform it. However, Aadland et al. (2020) nuance the rhetoric, but a positivistic rhetoric still is dominant.

I provide a perspective on children's moving as more than a matter of intensity, duration, and frequency. The perspective in this study adds that children are dwellers with interests that may become inspired and create meaning through corresponding movements. Inspired by Merleau-Ponty (2014, pp. 137-140), I argue that children are in general aware of their limitations and possibilities for play and exploration in occurring situations. At the same time, the movements and play occur in relation to

the local environment (cf. Ingold, 2000). Thus, children are not passive receptors of physical activity, but active creators of movements related to their bodies, the current situations, and environmental qualities.

This study shows how children are active and competent subjects that play and move in meaningful ways when interacting with the environment. They play and move in natural environments by investigating or responding to environmental variations or impulses in their bodies when moving, such as by sliding in different ways, collecting pieces of ice, building snowmen, lying on the heath, or tasting berries. Thus, meaningful movements and exploration are social, situated, and environment-related endeavours that are difficult for adults to control using predesigned movement programs. Inspired by Ingold (2018), children's meaning-making is difficult to control because children lead their lives and thus contribute to deciding the directions of their lines. The view on children as capable and active differs from what Pettersvold and Østrem (2019) point out to be the dominant perspective on children found in many "effective" learning programs: that children are not competent, while the adults are. In ACTNOW, teachers deliver physical activity in "doses" of specific intensity and duration. The ambition is to make children move and play in ways that adults perceive as essential to increase physical activity levels and thus improve human capital and reduce social inequality in health (Aadland et al., 2020). In other words, it is mainly adults who define what valuable forms of movement and play are. Alexander et al. (2019, p. 59) point out that the overall aims for children's play in the "physically active play" discourse are to address health ends that may differ from the children's immediate perceptions of meaningful play, including feelings of pleasure, freedom, and independence.

Inspired by Ingold (2000), children playing and dwelling in natural environments, embody experiences that contribute to building knowledge and skills while becoming well-versed citizens, knowing both cultural and physical aspects of the world they live in. Accordingly, individual children create meaning related to the environment while playing and exploring how they relate to environmental features such as an icy hill or a slender tree. Inspired by Ingold (2011), children's relational and interactive meaning-making occurs when they weave their lines with environmental features,

other children, and teacher's didactics. Boldermo (2018) supports the idea that relational aspects are important for children's belonging to places. I add a perspective to the debate on how to facilitate meaningful play and movements in kindergartens by emphasising children's needs and interests related to environmental qualities. The perspective is in line with Nordic kindergarten tradition (cf., Halldén, 2011; Kragh-Müller, 2017) and the UN Convention on the Right of the Child (United Nations, 1989) and is supported by other studies arguing that self-governed play in natural environments with little adult instruction is valuable in a range of different ways, for example, for cognitive play (Zamani, 2016), social development, learning (Waite et al., 2013), and motor development (Fjørtoft, 2000). Through my analysis, I document how children act as independent subjects capable of moving and acting on their own during self-governed play. The idea is connected with Zamani (2016) and Waite et al. (2013); however, I add insights into how children are active participants in forming their growth in correspondence with environments.

The perspective on children as subjects with individual needs, interests, and capacities that teachers should follow up is at the core of didactic sensitivity (see Article III). When employing didactic sensitivity, teachers consider children's individual needs and interests in addition to environmental qualities as valuable. This approach corresponds with the UN Convention on the Right of the Child, mainly Articles 12 and 13, respectively, about listening to children and children's right to express themselves (United Nations, 1989). Self-governed play in nature allows the children to express themselves in various ways. In addition, perspectives on children as active subjects are becoming increasingly apparent in official curriculums (Sommer et al., 2010, p. 161), including in Nordic kindergarten tradition (Kragh-Müller, 2017). At the same time, the emphasis on individual children and local environments may be under pressure by what Biesta (2016) points out are political expectations of more learning.

6.2. Children's possibilities for play and exploration always change in natural environments

One insight drawn from this study is that natural environments represent open and unpredictable frameworks for children's outdoor play due to constantly changing

weather and seasonal conditions. Additionally, children's interests, needs, and perspectives on how, what, and where they can play and explore change as they grow. These changes result in new and various affordances. Thus, possibilities for play are not static, but rather always evolving. The everchanging character of natural environments is particularly visible in Nordic contexts due to the major differences in seasons and weather, and the everchanging character is an essential condition for what meaning children may create during self-governed play outdoors.

Natural environments are everchanging

The qualities of the natural environment children played in transformed according to the seasons, from day to day, and over the course of single days. For example, I observed that the environment changed from snowy, icy, and cold during winter to dry, sunny, and warm during the summer. These changes happened over a period of 4-5 months and were observable and comprehensible by the 4-5 year-old children.

A playground may be blanketed in deep snow that fell overnight. However, the snow may be gone the day after due to warmer weather or rain. Thus, natural environments are dynamic and everchanging places that provide children with different qualities, including potential affordances, that the children can perceive and utilise for play and exploration. Ingold (2000, p. 189) supports the point that natural environments are everchanging by emphasising that environments are temporal and always changing. Inspired by Gibson (2014) and Waters (2017), I suggest that the everchanging character of natural environments results in various, and sometimes new, unforeseen, affordances that children may explore and play with.

One night's dense snowfall covered all tracks and figures under a blanket of new snow. In addition to concealing yesterday's play, the snow provided possibilities to create new figures and new paths in different places than the day before. Thus, the snowy weather afforded children opportunities to play with snow in other ways possible at the end of the previous day. At the same time, the cold and snowy weather did not afford possibilities to, for example, wade at the seashore, as the warm summer did, but provided icy, slippery grounds to slide on. The point that environments and seasonal changes influence children's possibilities for play is at the core of how children understand their possibilities for play and in line with Ingold's

idea that people's movements and ideas result from correspondences with local environments and that weather is important for how people live in environments (Ingold, 2000, pp. 115-125). The point that weather is an important contributor expands on Heft's (2003) finding that affordances change in different contexts and Waters (2017) points out that sociocultural mediation may influence, in this case, the possibilities for play. This study adds to the growing body of studies suggesting that changes due to the weather, season, and children's use may provide new or different possibilities for play and exploration in natural environments (e.g., Jørgensen, 2016; Myrstad & Sverdrup, 2018; Sando & Sandseter, 2020; Ødegaard & Marandon, 2019).

When the children in this study, for example, climbed, ran, or dug, they also changed the physical environment by making paths in the snow or leaving holes in the ground. The alterations created new affordances. For example, paths may channel other runners, and children may fill holes with water. Inspired by Ingold's (2013, p. 107) concept of "correspondence", I want to point out how children's alterations of the natural environment changed its qualities, which in return affected the children's possibilities for play. How children shaped the physical qualities of natural environments became especially apparent when they played in the snow. For example, running children created paths in the newly fallen snow, changing the physical qualities of the terrain. One consequence of the play in the snowy environment was that the children created paths and figures, such as snowmen, in the snow that were included in their play. Myrstad et al. (2021) made similar observations in studying children walking in deep snow, showing how children create paths through correspondent movements with snow. Arvidsen's (2018) study of school children's playgrounds during summer noted that popular climbing trees and the ground of popular play sites become worn because of children's play. One implication of playing and living in everchanging environments is that there is always something new or different to be curious about, play with, or explore, for example, newly arrived snow or a new path in the snow. I suggest that children change the physical qualities of the environment, including the affordances, while playing in natural environments. Inspired by Ingold (2000) and Merleau-Ponty (2014, p. 137), I suggest that children's understandings of themselves, what they can do, and that their possibilities in the environment grow as they play in natural environments.

Children perceive new ways to play as they gain experiences and grow

The idea that children perceive ways to play in the environment based on their perspective and experiences is supported by studies emphasising the relational character of affordances (e.g., Greeno, 1994; Heft, 2003; Kyttä, 2004; Waters, 2017). The idea that children perceive possibilities for play based on their perspectives is also related to Merleau-Ponty's (2014, p. 137) concept of the intentional arc. An adaption of the concept of intentional arc to children's nature play means that children connect their past experiences to intuitively understand what they can and cannot do here and now and in future play situations with features of the natural environment. Drawing on Merleau-Ponty, Pedersen (2020) finds that the ways children play in the outdoor playground are connected with their "habits" in ways of playing. Waters (2017) expands on the theory of affordances to include children's experiences and current cultural norms and values.

Gadamer's (2012) hermeneutics may shed light on how children's perspectives on what, how, and where they can and cannot play change as they grow and experience. I interpret it as children's understandings of ways to play continually evolving as they experience new situations and what they can and cannot do. The idea is linked with Ingold's (2000) perspective on dwelling, arguing that people, including children, grow competencies and understandings of the environment by living and, let me add, playing with it. For example, the children in this study may have experienced different properties of ice and diverse ways to utilise it, resulting from how they played and moved with ice and moved across the icy ground. Thus, they may familiarise themselves in living with ice, learn ways ice relates to them and how they relate to the ice.

Applying Merleau-Ponty's intentional arc, Gadamer's hermeneutics, Ingold's "dwelling", and Gibson's "affordances" to children's play in natural environments, I suggest that children's understandings of what they can and cannot do are not static but evolve as they experience, become inspired by others, learn new ways to play, and respond to environmental qualities. Thus, children's growth affects how and what they perceive as affordances because they continually revise their understandings of "what I can do". Therefore, children's growth is an important dimension on the

dynamic character of natural environments and possibilities for self-formation in the physical and social environment.

6.3. Outdoor play is an existential endeavour

One central insight from this study is that children curiously explore and experience who they are, what they can and cannot do, and how they relate to environmental features through self-governed play in natural environments.

Two strands characterise how children create existential meanings of themselves and the environment as they play outdoors: 1) Mastery of uncertainty in everchanging natural environments and 2) Creating existential understandings about themselves and the environment.

Mastery of uncertainty in everchanging natural environments

I have argued (in Chapter 6.2.) that natural environments always change because of weather, seasons, and children's play, and because children's perceptions change. Thus, natural environments are always changing in complex and partly unpredictable ways that children must manage.

When children are exposed to environments that always change, there is always the possibility that something unforeseen, new, or unknown might appear or happen. Thus, children must learn to adapt to and manage uncertainty and anticipate that something may happen, which they may learn to be something that they usually will master. Becker (2008) points out that dealing with strange things and situations remain a driving force throughout life and a core element in learning to live an autonomous life related to the social and physical milieu. When children are solving challenges posed by situations, they may experience mastery and find that they are subjects with possibilities to influence their surroundings. Inspired by Ingold (2018, pp. 20-29), children learn to respond intuitively to changes and conditions in the world while being present. Experiencing mastery and subjectivity are core components in education, according to Biesta (2020). Complexity, changes of social forms (Brown & Beames, 2017) and politics (Becker et al., 2018) distinguish western societies. Thus, education must prepare future citizens to cope with and thrive in dynamic and unpredictable circumstances. Based on this background, dealing with

uncertainty and an open horizon is recognised as a vital value and component in education to meet future and contemporary societal challenges (Becker, 2008; Biesta, 2016; Brown & Beames, 2017; Kirby & Webb, 2021). However, this is not a perspective that implicitly values individualistic people in solitude. Rather, the relational and socio-ecological perspective of this study emphasises growth towards social, environmental, and cultural communities.

Inspired by Ingold's (2000) perspective on dwelling, I suggest that children playing in a dynamic and everchanging natural environment must constantly respond to partly unpredictable conditions. When children play and explore different environments that change temperature, friction, and texture, they create challenging situations and experiences about adjusting their plans, improvising, and adapting to partly unexpected and surprising conditions. For example, the snow may have melted, or a sudden rain shower creates a need for shelter. A central question is whether the competencies children grow by playing in everchanging environments correspond with competencies required in societies of tomorrow, for, as Pimlott-Wilson and Coates (2019) argue, outdoor education may foster well-rounded, independent, and creative free thinkers with future-oriented soft skills that can respond to future-oriented challenges.

Although children may perceive engagements with uncertainty as exciting and risky, I argue that physical danger is not a prerequisite for excitement and joy, or that seeking risk for the risk itself is the main driving force in children's outdoor play, as the hegemony of risky play seems to suggest. However, when children act independently in situations in which they are unsure of the outcome, they may perceive the activity as risky or fearful, even though no objective physical danger is involved. They may also find these activities challenging, exciting, attractive, and meaningful because it is about finding out who they are, for example, when children respond to questions such as whether they can manage to climb to the top of an icy embankment or what snow tastes like. However, children may face several risky situations when playing in natural environments driven by their curiosity.

While the concept of risky play places a one-sided emphasis on the excitement of situations involving physical danger, I assume that children have an innate desire to

engage in social and corporeal investigations of their spatial and social positions, as well as an existential desire to find out, gain knowledge, and grow. As they challenge their understanding of themselves and their environment through continual movement hither and thither—between security and insecurity, the known and the unknown—children's play in and with nature assumes a hermeneutic quality. I suggest that one result of playing in everchanging environments may be that children adapt and respond to uncertainty about changes, occurring events, and what will happen next.

Children create existential understandings about themselves and the environment

Many studies of children's outdoor play tend to emphasise motor learning and physical activity (Bjørgen, 2016; Fjørtoft, 2000; Sando, 2021), science (Beery & Jørgensen, 2018), risk (Sandseter et al., 2017; Višnjić Jevtić et al., 2021), and health (Herrington & Brussoni, 2015). In the following, I will investigate the existential understandings children may create about themselves and their surroundings during self-governed play in natural environments.

Inspired by Merleau-Ponty (2014) and Ingold (2000), I suggest that children's play may take form as an existential exploration of themselves and their environment during self-governed play in natural environments. By tasting, smelling, and touching features such as stones, trees, snow, and mud, children embody experiences of these features and how they relate to them. Inspired by Merleau-Ponty (2014, p. 172), I suggest that children may create understandings about how they relate to the physical and social environment using their senses. They may experience what it is like balancing on, for example, slippery ice and what it is like being in a state of balance, providing a consciousness about their future possibilities and imitations.

Inspired by Ingold's (2000) perspective of dwelling, children create, maintain, and fade understandings of their relations to, for example, icy ground and swinging trees as they play. At the same time, ice and trees shape children's understandings of the features. However, other studies suggest that children's play is an existential endeavour. For example, Winther-Lindqvist (2017) argues that opportunities to play freely may allow children to become part of social orders, become good friends, and

resolve (social) differences through negotiations. I add to Winther-Lindqvist by including relations with natural environments and children's understanding of their embodied capacities.

I suggest that children not only explore and experience the external world, as others have emphasised in their studies of children's exploration (e.g., Gibson, 1988; Hutt & Bhavnani, 1972). Rather, I suggest that children also explore inwards: they grow understandings of themselves in relation to natural environments while playing. Children's self-governed play may take form as an existential exploration answering questions like *What can I do? What happens if I do this?* and *What does this taste like?* The questions are parts of the overall existential questions *Who am I?, How is the world constructed?* and *How do I relate to the world?* Inspired by Ingold (2000), the questions are essential for "dwellers" to be familiar with and in natural environments.

For example, when children play in correspondence with the ground, wind, and trees, I suggest that they may embody abstract concepts by relating to them. For example, children experience and embody gravity when climbing trees; they sense what it is like balancing, being in balance, and gravity's hold on them. Johansson (2019) supports the idea that children learn to fill different abstract concepts with meaning through experiences. Thus, children embody understandings of who they are and what possibilities they have in relation to the environment by moving and playing in the environment. One implication is that self-governed play entails a serious dimension for the children because it is about finding out who they are and their possibilities. The perspective is linked with Biesta (2021), arguing that existential perspectives are central in education for "equipping and encouraging the next generation to exist 'in' and 'with' the world" (p. 3). Further, it corresponds with Ingold's (2000, p. 170) point that "the process of embodiment is the same as the development of that organism in its environment". Thus, children's outdoor play is not necessarily a quest for physical danger. Rather, it is about creating existential understandings about who they are and how they relate to the natural environment.

I suggest that play in natural environments is closely connected with exploring themselves and their surroundings. Nilsson et al. (2018) support the idea that play,

exploration, and learning are closely connected concepts. This study shares an optimism with other studies on the potential children's exploration has for their self-formation (Hedegaard & Ødegaard, 2020; Nilsson et al., 2018) and early childhood education pedagogy (Ødegaard, 2020, 2021).

Chapter 7: Conclusions and Implications

I have investigated and discussed how children create meaning about themselves and the environment during self-governed play in natural environments.

One main insight is that children are curious and skilled subjects that engage with social and physical environments during self-governed play. At the same time, environments inspire and influence the ways in which children move and play. The exploratory engagements may result in experiences and growth that are important for how they understand themselves and their surroundings. Thus, self-governed play in natural environments involves a serious dimension because children will learn about their surroundings, their power to influence them, and themselves. In short, play in natural environments is a form for playful and exploratory self-formation.

Because of weather, seasons, and children's play, natural environments are always changing. Additionally, children's self-formation and enculturation result in children perceiving possibilities for play and exploration differently as they grow. Thus, children will always have possibilities to play and explore in diverse ways here and now that are not easy to predict either by the children or by the teachers. Thus, there will always be uncertainty about the direction and outcome of outdoor play that children and teachers must contend with. While playing in everchanging and dynamic environments, children may grow and become autonomous yet relational inhabitants by engaging playfully in physical, cultural, and social relationships.

7.1. Pedagogical implications

This study offers a perspective on self-governed play that differs from pedagogical discourses emphasising play as primarily a means to improve children's health later in life, improve narrow academic skills, or emphasise risk as a major driving force in children's play. As an alternative, I show self-formation as an important aspect of self-governed play driven by children's exploration and framed by teachers and environments. Thus, this study contributes to arguments for a broad perspective on education showing the values of children's immediate experiences here and now.

One implication is that teachers need to consider what relationships children may engage with and their consequences on children's growth when planning and carrying out pedagogical arrangements.

Another implication is that initiatives aiming to increase children's physically active play or learning should include children's voices, because children are skilled subjects that create meaningful play in correspondence with environments, their own interests, and teachers' frameworks.

7.2. Further research

This study offers 1) a theoretical framework explaining the significance that children's outdoor play has for children's self-formation and 2) a didactic approach to children's outdoor play that is sensitive to children and environments. Both insights should be challenged and deepened by future research.

Future research may investigate what children's close engagements with environments while interweaving self, places, animals, plants, and other adults may mean for how teachers can cultivate environmentally friendly awareness among children.

Additionally, this study offers a starting point to further investigate children's outdoor culture. In this study, children's outdoor culture emphasises freedom and local environments, and is institutionalised.

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Curious play: children's exploration of nature

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ABSTRACT

This article explores the concept of 'curious play' as a theoretical framework to understand and communicate children's experiences of free play in nature. The concept emerged interactively from three sources of inspiration: an ethnographically inspired study of children playing in nature; as a critique of the concept of 'risky play' being the dominant discourse on children's play in natural environments; and from phenomenological and cultural-historical theories of children's play and play environments. The article illustrates this interplay through an analysis of two empirical examples, and argues that curious play offers a comprehensive and existential approach to understanding the interplay of children playing in nature and children's growth. Thus, children are conceptualized as active explorers and playful agents whilst embodying and creating knowledge, skills and understandings of themselves and their life-worlds.

KEYWORDS

Affordances; curious play; children; exploration; nature

Introduction

The aim of this article is to propose the concept of 'curious play' as a theoretical framework for understanding and discussing children's experiences of and attraction to self-managed play in natural landscapes. The concept of curious play emerged interactively from three sources of inspiration: an ethnographically inspired study of children playing in nature; as a critique of 'risky play' being the dominant discourse in research on children's play in nature; and from phenomenological and cultural-historical theories of children's play and their play environment.

Firstly, our concept of curious play evolved out of an ethnographically influenced study with key informants up to 10 years of age. The study involved observation, field dialogue and photo-elicitation at a family summer camp in the mountains organized by the Norwegian Trekking Association (Den Norske Turistforening) (Sanderud, 2011; Sanderud & Gurholt, 2014). We will illustrate the concept using two empirical situations from that study.

Secondly, we began questioning the concept of risky play, which has been the theoretical framework for most recent research and for legitimization of children's play in outdoor surroundings (Brussoni et al., 2015; Sandseter, 2010, 2013). We do not question the assumption that children innately seek challenges and that nature environments invite children into exciting forms of play that may involve a risk of physical injury. However, we do dispute the premise that children innately seek physical danger and the assumption that the quest for risk is essential to children's growth. Our doubts seem to have a parallel in an increasing appraisal among Anglo-American outdoor educators and researchers who have recently argued that the risk concept lacks valid educational support (Beames & Pike, 2014; Wattchow & Brown, 2011). Accordingly, a growing

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number of projects have been initiated to develop an alternative culture of teaching and learning outdoors (Beames, Higgins, & Nicol, 2011; Knight, 2009; Waite, 2011). These alternatives are partially inspired by practices that have long characterized the Scandinavian '*uteskole*' [lit: outdoor school] and '*friluftsliv*' [lit: free-air-life] approaches to learning in nature (Henderson & Vikander, 2008; Knight, 2009): an emphasis on free play, exploring activities, place-based knowledge, local natures and cultures, and sustainability.

Thirdly, we were drawn to phenomenology and cultural-historical theories by their ability to illuminate the complexity of children's nature play and connect children's lived play experiences to qualities of their play environments (Frost, 2010). These theories recognize that children are born curious (Hodgkin, 1976), and that environments invite children to engage with the world through playful explorations of many kinds (Gibson, 1988; Ingold, 2000). This approach also complements our understanding that experiential education is cultural-historically rooted in child-centred pragmatism (Dewey, 1958), a theory that emphasizes children's curiosity and interaction with environments. Several Scandinavian studies have described how children grow interactively through play in nature, becoming nature literate and physically and culturally skilful (Fjørtoft, 2000; Sandberg, 2012). Løndal (2010), for example, shows how eight-year-old and nine-year-old children involved in after-school programmes create and live their social lives through outdoor physical play, acquiring physical knowledge of their surroundings in ways that enables them to create connections, mastery, meaning and an overview of their reality.

In the Norwegian context, curious play confronts an internal contradiction. On the one hand, most children have access to nature or green areas within a walking distance of their home (Skår et al., 2014); playing freely in nature environments is considered an important aspect of daily life and what it means to grow up. The high value attached to children's free outdoor play is linked to the culture of '*friluftsliv*'; involving roaming and experiences of closeness to nature for pleasure, adventure and self-cultivation, ideally on nature's own terms. *Friluftsliv* may involve risk but risk is not one of the objectives (Gurholt, 2010, 2014, 2016). On the other hand, today's Norwegian children typically play outside under adult supervision, either in kindergarten or in after-school programmes (Skår et al., 2014).

In the discussion that follows, we outline the theoretical framework we have used to encompass curiosity, children's play in nature and growth. We continue with a discussion of the ethnographically inspired approach used by Sanderud (2011) to understand children's nature play from their own perspective. To illustrate our argument, we analyse two empirical examples involving climbing a tree and playing with running water. We conclude with a discussion of the implications of the concept of curious play, contrasting this concept to risky play discourse, and argue for the value of a theoretical framework recognizing the value of curiosity, wonder and play.

A framework of curiosity and wonder

During the European Middle Ages, Church leaders and philosophers stigmatized the idea of curiosity. They feared that people who used their own eyes, ears and voice to ask questions and acquire knowledge would challenge traditional social authorities and structures. The philosopher Thomas Hobbes (1588–1679) was the first prominent thinker to challenge this dogma and praise curiosity as important to individual development. He declared that our desire to know how and why could be expressed with just this one word (Steinsholt, 2014). In the early twentieth century, European and Scandinavian/Norwegian reform pedagogy began developing experiential learning models centring on children's interactive play from a general development aspect. The models encouraged experimentation, discovery and experience of self and the world, through self-activated play (Steinsholt, 2014).

Today, exploratory ludic behaviour is generally regarded as fundamental to a child's life and growth. In his explications of phenomenology, Merleau-Ponty (1945/1962) argues that children are born with an intentionality directed towards their social and material environment and this

environment becomes embodied. Tuan (1977) asserts that children up to the age of 10 live a more physical active life than adults do, with greater openness to the world and awareness of it. Several researchers have suggested that the relationship children experience with their surroundings is founded on pre-linguistic and pre-reflexive bodily sensing, and their perception, embodied cognitive skills, understandings and emotions emerge interactively out of this relationship. The self and the environment are sensed, experienced and embodied relationally as coherent and meaningful entities or life-worlds. For children, solving problems posed by their situation is its own reward (Gibson, 1979; Hodgkin, 1976, 1985; Ingold, 2000; Tuan, 1977).

Children seem to be particularly curious when they are challenged by new or difficult tasks (Hodgkin, 1976). They want to touch the untouched, smell the unsmelled, taste the untasted; they want to see what is hidden under a cloth or behind a large rock. Stepping into unfamiliar landscapes of all kinds gives children opportunities to cross frontiers and render the unfamiliar familiar. To make sense of what is happening around them, they may seek additional cues or develop alternate interpretations at both the conscious and unconscious levels. Consequently, 'play and play environments are inextricably interrelated' (Frost, 2010, p. xviii).

The concept of play can be understood as voluntary activity of spontaneous, ludic and imaginary quality 'that emerges from biological foundations through the child's initial solitary and social interaction with objects and people' (Frost, 2010, p. xviii). This definition corresponds to contemporary perspectives on curiosity and wonder, exploration and creativity. Researchers in a variety of disciplines have concluded that these characteristics are innate, and intimately linked to children's play, growth and learning (e.g., Frost, 2010; Gibson, 1988; Hodgkin, 1976, 1985), including outdoor pedagogy (e.g., Becker, 2008). Whenever they encounter objects, natural phenomena or people, children eagerly explore whatever they find novel and interesting (Gibson, 1988).

The interplay between children and their play environment

A growing number of researchers have applied the theory of affordances in studies of children's outdoor play in natural surroundings (Fjørtoft, 2000; Heft, 1988; Kyttä, 2002; Sandseter, 2009). The concept of affordances was introduced by Gibson (1979) to describe aspects of the environment that invite and trigger animals and people to act and play. Although he was careful to stipulate that an affordance exists in the relationship between children and their play environment, Gibson (1979) has been criticized for placing greater emphasis on the environment than on the children (Chemero, 2003; Greeno, 1994). Some recent studies of children's play in nature may likewise be criticized for being more concerned with describing characteristics of the environment than characteristics of the child (Heft, 1988; Kyttä, 2002; Sandseter, 2009)

Greeno (1994) has attempted to redress the perceived imbalance by introducing the concept of 'ability' to characterize children's contribution to play in environments. Thereby he proposes a number of factors that may influence these abilities; for example, a child's pre-linguistic sensory and embodied experiences with nature, physical capacities, contextual features and curiosity. According to this perspective, play-actions emerge through interaction between a child's ability and nature's potential affordances. For example, a child climbs a tree not just because it has branches of the right thickness a suitable distance apart, but also because that the child possesses the requisite motor skills and wants to climb it.

In the discourse of risky play, children who climb trees, explore a natural environment alone or play near a fire are characterized as having an innate drive to seek out physical danger (Brussoni et al., 2015; Sandseter, 2013). Sandseter (2007) divides risky play into six categories. Most of them, such as 'play involving great heights' and 'play with high speed', were perceived as risky in her study by both the children and the staff. However, 'play with dangerous tools' and 'play with dangerous elements' were perceived as risky primarily by the staff. Her explanation for this discrepancy is that 'when children play near dangerous elements, they are usually preoccupied by the play they are engaged in, rather than paying attention to the dangerous element they are

playing near' (Sandseter, 2013, p. 144). As this comment makes clear, Sandseter's categories give greater weight to environmental features than to children's abilities and perspectives. Additionally, the definition of the concept of 'risk' seems to differ across studies and is not always specified (Brussoni et al., 2015).

Our use of curious play as an alternative perspective on how and why children play in nature has benefitted from the work of Ingold (2000), who regards all humans as dwellers. He posits children's movements and (inter)actions, social structures and ideas to emerge from intimate physical and sensory involvement with their surroundings. Accordingly, children discover and define themselves in relation to their surroundings, which are both created and maintained through different types of interaction: 'This discovery procedure, where objects in the landscape become clues to meaning, is what distinguishes the perspective of dwelling' (Ingold, 2000, p. 208). It is by moving and acting, playing and exploring in a landscape that children perceive and learn about it. Thus, children embody experiences about themselves and their surroundings during physical play with or without physical dangers.

We share the view that children are active and influential participants in their own life-world. They are designers of it, rather than simply passive recipients. Accordingly, how children think and play is intertwined with how they play, live and interact with their immediate surroundings. Life is a process of continuous creation of play-actions and interactions, thoughts and meanings, inextricably linked with the child's physical and socio-cultural surroundings and imagination. Children grow by interacting and playing in and with their world, continually discovering new elements and information that influence their relationships, opinions and interpretations. The relationships between landscapes and children's life-worlds are relational and dynamic; formed in the process of living, rather than as constant, independent and predictable entities (Tuan, 1977). Children shape and create landscapes as meaningful wholes through continual play, movement and other activity, intertwining themselves with their surroundings. These meaning-creating and interpretive processes are inevitably individual, which implies that every child perceives and incorporates experience and constructs knowledge of her or his surroundings in a unique manner, whilst be(com)ing members of play communities.

Exploring contemporary children's play in nature

We formulated the concept of curious play while re-analysing some empirical material generated in the course of ethnographically inspired fieldwork. This fieldwork was conducted in 2010, during a one-week family summer camp in an ancient pastoral landscape surrounded by tall peaks and glaciers. During the camp, the children participated in different activities, such as climbing, a glacier hike, fishing and a visit to a summer mountain goat farm, with their parents. It was voluntary to attend the activities and if not attending, or in between the activities, the children played freely near the camp. The study was undertaken in order to gain insight into how children played in what could be called wild nature: how they inhabited, moved in and interacted with the landscape and formed their lived play experiences.

Studying children's play as experienced and described by the children themselves is methodologically challenging. The ability of children to express their feelings and thoughts verbally will inevitably vary, and researchers cannot step out of their own body and into that of a child. Consequently, no researcher will ever gain full access to the feelings and thoughts of any child's life-world (Johansson, 2011). However, by combining participant observation with auto-photography, photo-elicitation and field dialogue, Sanderud (2011) elicited the children's personal views, expressions and feelings as far as possible within this setting.

Parents of 47 of the 60 children attending the family camp agreed to allow their children to participate in the study.[1] While every informant contributed to the study during the observation period, seven boys aged 6–10 evolved into key informants. This may have been because all of these boys were exceptionally physically active and visible, and thus caught the researcher's

attention. Accordingly, they may have overshadowed other children who were either less physically active or active in other ways. However, the general impression from the fieldwork, which included observations of the other children at the camp, is that these observations did not hold contrary play forms.

Through contact and dialogues with the seven key informants all day long throughout the week, the researcher had a great deal of opportunity to listen to the children's spontaneous commentary on their play in a natural environment and their own explanations of their intentions and meanings, and to capture their communication verbatim (Johansson, 2003). The auto-photography component encouraged individual informants to take pictures that were subsequently analysed (Noland, 2006).

The researcher conducted individual photo-elicitation sessions with three boys. Each boy's photographs served as a reference point for a dialogue on his play experiences and his feelings related to them. This provided a valuable opening for the researcher to identify and follow up on themes the boy considered important (Clark & Moss, 2011; Harper, 2002).

The researcher provided two cameras, recruiting photographers by asking informants whether they would like to take pictures during the day. They took an average of 60 pictures per informant per day. The range of motifs was considerable, suggesting that the informants had differing interests or that their attention was drawn in diverse directions. The pictures were systematized in categories such as unorganized and organized activities, social relations, special details and landscape. During the photo-elicitation, all of the informants' pictures were discussed. However, some photographs were subject to a deeper conversation than others were because they somehow triggered the conversation. To cite one example, of the 128 pictures taken by a boy we call Trond while he was at a climbing activity, slightly more than half (68 images) were characterized as not directly connected to rock-climbing. His descriptions of the motifs in his photographs included what he described as 'my hand, picking berries' (Figure 1a), 'looks like a sheep sleeping beneath a pile of stones' (Figure 1b) and a description of the glacial stream's colour as 'greyish … really … almost blue … Something between blue and grey makes it really beautiful' (Figure 1c).

Trond's discussion of his berry-picking photograph (Figure 1a) illustrates the ways in which the children revealed their thoughts and intentions in dialogues with the researcher. He noted that although he had tasted the berries, he did not know what they were: 'It's my hands that are picking … blueberries or … something …'. The researcher, discerning from the photograph that they were crowberries, commented: 'They're a little smaller, black and taste a bit different'. Trond agreed: 'Yes, in fact, they do' (Sanderud, 2011, p. 75).

Observation of the children's exclamations and facial expressions, as well as the extent of their engagement and concentration in activities, provided non-verbal information that the researcher was able to combine with information gleaned from the dialogues on photographs and other verbal communication. This triangulation of methods gave the researcher insight into events,

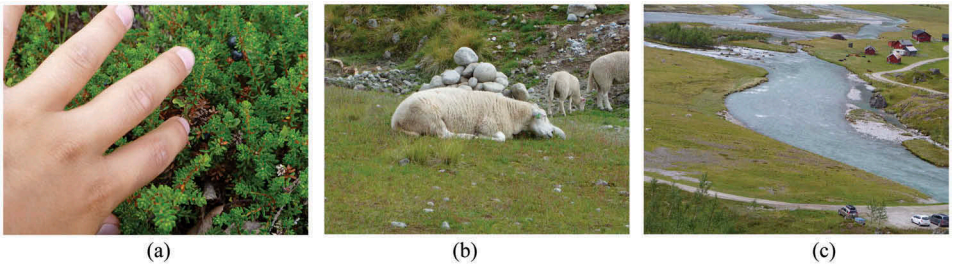

Figure 1. Examples of photographs taken by one of the boys participating in this study: (a) his hand picking berries, (b) a sleeping sheep and (c) a 'greyish' glacial stream.

situations, experiences, thoughts, feelings and contexts—such as the tasting of berries—that otherwise might have been inaccessible.

Explorative case analysis

To illustrate our theoretical argument that curious play is a valid alternative to the hegemonic concept of risky play, we will now present two examples of children playing in nature. One involves climbing and the other concerns playing in and with running water. We chose these examples from a wide variety of observations that have been analysed elsewhere (Sanderud, 2011; Sanderud & Gurholt, 2014). Both examples give us an opportunity to compare the curious play and the risky play frameworks for understanding what motivates children's play in nature.[2]

Climbing a tree

The top-rope rock climbing at the family camp took place at a vertical cliff about 5 m high. After going up a few times, the children became familiar with their capacities and brought the unpredictability under control. 'After a while it became easy', in the words of one boy, 'although it was difficult starting out because I hadn't climbed there before'.

During this activity, many of the children engaged in other activities while awaiting their turn to climb. Some picked berries or relaxed in the heather overlooking the site; others began playing with adults, other children or a camera. As they pursued activities of their own devising, the 'top-rope climbing' activity became much more for the children. On his own initiative one of the boys, whom we will call Stian, began to climb a slender birch tree adjacent to the cliff. Here is what the researcher reported:

> The tree trunk was about as thick as a tennis ball, and the branches were so slender that they bent when Stian put his weight on them. As he approached the top of the tree, it swayed and slowly arched downward. When he was just above the ground Stian let go of the tree and landed on his feet, safely and elegantly. The boy was well coordinated and knew how to take advantage of gravity in combination with the tree's flexibility. While climbing, he exhibited both confidence and control. (Field observations, translated form Sanderud, 2011, p. 76)

For a while, the birch became something more than a tree for Stian. Its challenging and swaying climbing frame gave him an opportunity to explore attributes, possibilities and responses of both the birch and his own body. In Gibson's terminology, Stian saw the tree as an affordance and began utilizing it in his own way and for his own purpose. In responding to and exploring the tree's affordances, Stian created possibilities for new actions, and new affordances appeared progressively as he made his way up the tree. One can say that through explorative play and sensuous interactions with his surroundings, Stian created his own experiences and perspectives (Gibson, 1988; Ingold, 2000). In the course of his journey, he took part in reshaping the micro-landscape of the tree—that is, not only the tree itself, but also his own self and the people who were watching him.

Stian's bodily expressions in response to the tree's affordances showed that he had great confidence in his own abilities and intuitively knew that he could master the challenges presented by the tree. It is very possible that he had climbed trees before and used those prior experiences to 'read' his surroundings. These experiences may have given him the confidence to investigate and challenge his own and the tree's possibilities, boundaries and limitations.

Applying Merleau-Ponty's (1945/1962) perspective, through his physical play with the birch tree Stian acquired experiences that extended beyond features of the bark and branches he touched and included the movements of the tree trunk as it interacted with his body's weight and movements. Climbing the tree provided him with experiences about his own body, about balancing and being in a state of balance, as well as about himself embodied-in-the-tree. He may also have acquired a physical experience of the birch's strengths and weaknesses; its shapes, surfaces and

flexibility; and the gravitational forces that were acting on and limiting his own body. We could even say that he processed and established a meaningful physical and intimate relationship with the tree. In sum, playful experiences such as this challenge and expand children's skills and horizon of understanding, and may deepen their awareness of their existential situation.

The general insight that we would derive from Stian's adventure is that children learn to know not only their surroundings, but also themselves, by directly and interactively exploring and embodying its complexity. Curiosity about the unknown can generate a desire to find answers to basic questions such as 'What happens if I climb that tree?', 'What are my surroundings concealing?' and 'How is the world put together?'.

The dynamic, complex, mobile and partially unpredictable interaction between Stian and the birch tree involved far more than the engagement with possible physical risks. If we think of the cliff and the tree as playmates (Steinsholt, 2010), the cliff is the more predictable and controllable, offering a more limited number of possibilities to explore. It could be regarded as a kind of monument, a passive object that lets the children climb it. Its rocky shapes and surfaces are unchanging, and present the same handholds each time a climber encounters them, in contrast to the birch. Framed metaphorically, the cliff sits quietly and lets children climb for as long as they wish to and have the permission of the camp instructors. The tree, in contrast, is alive. The dynamic relationship between Stian and the tree implies a tension that could be said to want to shake him off.

Whether Stian was affected by or posed for the children watching him remains unclear. A desire to impress peers may have been a motivation for his play, along with feelings of curiosity and a desire to try out a challenge. The researcher did not perceive any indication that Stian's spontaneous play with the tree was motivated by physical danger. He interpreted the boy's facial and bodily expressions as indicating a desire to engage playfully with and master the tree using his body, creativity (mind) and surroundings interactively.

Playing in running water

> Every day, from early morning until late evening, children played and bathed in a stream that ran close by the camp. Although its depth and width varied somewhat, the stream was approximately 0.3 m deep and 1.5 m wide. On one occasion, four boys playing in the stream told to the researcher observing them that they were following a floating cup. A little further upstream, two other boys were putting large stones next to each other to form a diagonal line across the stream. 'We're building a line of stones', they explained to the researcher quite matter-of-factly. (Translated form Sanderud, 2011, pp. 48, 58 and 83)

The researcher observed that the line of stones formed a partial dam, making the water a little deeper on its upstream side. One could say that the stream responded to the children's play by allowing itself to be re-shaped and by flowing in a different way, creating new swirls, bubbles, foam and lines. The nature of running water, malleable yet uncontrollable, allowed the boys to perceive and experience the stream in various ways. They let water slip between their fingers, splash against their shins and press their feet against the bottom of the stream. As their eyes followed its altered movement, their skin became chilled and the current challenged their balance. In phenomenological terms, when the children's bodily play altered the flow and aesthetics of the water, the water responded by touching, pushing and chilling their bodies; this gave them direct and varied sensual experiences. According to Gibson (1988), experiences like this teach children about the distinctive characteristics of water, such as its texture, substance, energy and temperature.

It is easy to imagine that a stream's gurgling laughter, its flowing and dancing currents and eddies, might invite and stimulate children to participate in physical and sensory exploratory play. Their powers of imagination may continually be stimulated to investigate the water's physical characteristics not only by experiencing, but also by wondering 'what would happen if …?' (Becker, 2007, p. 77). The most significant point here is that these children did not know where their play would take them or end. Rather than following a predetermined plan, they were interacting with

the stream spontaneously and creatively; the features of the micro-landscape around them were constantly changing, influenced by whatever ideas bubbled up in their minds. This combination of lability, flexibility, curiosity and wonder created a continuous flow of unanticipated situations, even crises and risks that the children had to resolve with the resources available to them. In the course of their play with the elements, the children experienced how running water could be grasped, squeezed, displaced, formed or lifted; whenever they experienced thirst, they could drink from the stream to satisfy it. Each of these actions has informative consequences, providing knowledge about the properties of water (Gibson, 1988) and simultaneously becoming 'clues to meaning' (Ingold, 2000, p. 208).

Running water was like a magnet for the children (Sanderud, 2011). Whether they were following a floating cup or diverting the stream, these boys seemed fascinated by the stream's unpredictability, flexibility and malleability as well as by its interactive playfulness with their bodies and senses. They were totally absorbed by the interaction between the water and the floating cup, the water and the rocks, the water and their bodies, and how the water responded by playing on the cup, the stones and their bodies while they simultaneously embodied the stream's qualities and responses.

Through the children's creative play, the running water emerged as an attractive affordance. Their engagement revealed it to be a complex phenomenon with a wide range of sensuous qualities, practical usages and meanings (Becker, Schirp, & Weber, 2010). The play also provided the children with multiple and valuable experiences accessible only through direct involvement, rather than through abstract knowledge acquisition. All of these qualities and the enthusiasm of the children who played in the stream on their own suggest that they were attracted to it by something more than the lure of physical danger, if that was involved at all.

Based on the theoretical interpretative framework we have outlined, we would argue that children's play with natural elements such as swaying trees or running water originates in a profound curiosity and wonder about themselves and the environment in which they play an interactive role.

Hither and thither and a step forward

Many studies of children's often wild and boisterous physical play in nature have at least in part assumed that they innately seek excitement, risk and physical danger through play in nature (Brussoni et al., 2015; Sandseter, 2013). However, our examples suggested a different interpretation: that risk or uncertainty is not the impetus for children's playful interactions with nature. Rather, children's durable and curious engagement and playful interactions with the environment might be an important drive in itself.

Adopting a risky play framework may limit researchers' and practitioners' understanding of children's play in nature to a quest for an optimal level of arousal through physically dangerous situations. In contrast, the concept of curious play encompasses a broad spectrum of sensory stimulations, physical development, embodiment, experience and emotions. Full of curiosity and confident in their own abilities, children do not require the risk of physical danger to want to climb, play in and with running water, or investigate whether something is edible. They may instead be motivated by wonder, unpredictability and revealing of what the natural surroundings are concealing. In other words: the attraction could just as well be linked to the excitement of investigating what is happening and to what extent they might experience and master unpredictable and uncertain situations. While the concept of risky play places a one-sided emphasis on the excitement of situations involving physical danger, curious play assumes that children have an innate desire to engage in social and corporeal investigation of their spatial and social positions, as well as an existential desire to find out, know and grow. As they challenge their understanding of themselves and their environment through continual movement hither and thither—between

security and insecurity, the known and the unknown—the play of children in and with nature assumes a hermeneutic quality.

The children in our examples explored environmental objects or affordances, such as trees and running water, but also objects unfamiliar to them—berries, animals and so forth. They pursued these investigations as if they were intertwining themselves with the objects. Using their hands, feet, taste and eyes, as well as their balance, the children generated expected and unexpected experiences, all of which were important for their self-formation and growth (Gibson, 1988; Hodgkin, 1985; Ingold, 2000). Tuan (1977) and Ingold (2000) assert that children can only generate a meaningful relationship to the environment by making this type of bodily leap into unfamiliarity by crossing what Hodgkin (1985) calls frontiers. Stian's way of moving and playing with the birch tree required a set of complex memory patterns that he could only have acquired consciously and unconsciously through engagement in related activities in the past (Gibson, 1988). When children engage in actions related to previous experiences, they are exploring and refurbishing complex and dynamic abilities and meanings—in an 'ever-spiralling path of discovery' (Gibson, 1988, p. 37). Simultaneously, they are developing affordances that their experiences, imagination and explorations of the environment are continuously creating and modifying. Whenever children become involved in play or other activities, they seek and create affordances. In natural environments, they do this by continuously interacting with meaning, and intention, and by reshaping objects (Ingold, 2000).

While exploring the affordances available to them—for example, by climbing trees and wading in streams—children discover or help to create novel affordances that they can then play with, according to Gibson (1988). One could say that the children's play-world expands as they discover new possibilities for play. The stream responded to the children's play by changing its shape and its currents; the birch tree tried to shake the child out of its branches. Through this form of dynamic interplay, natural elements continually offer surprising and amusing responses, which in turn require improvised and unforeseen reactions from the children. It is as if the natural elements and the children are playing together, and are driving them between the known and the unknown in ways that propel unrelated subjective experiences into their socio-historic and ecological context (Steinsholt, 2010).

To summarize our argument: children are curious dwellers, always on the move. Rather than seeking risk for its own sake, they accept it as part of their continual search for new affordances that will enable them to discover and create new knowledge of themselves and the world they inhabit.

Curious play in nature

As a framework of understanding, curious play gives primacy to the role of curiosity as a motivating factor for children's free play. It opens the door to understand children's free play in nature as an exploration of their bodily possibilities and limitations through interaction with their physical, social and cultural surroundings. From this perspective, children's quest for existential knowledge about both their environment and themselves is a core driving force in their lives.

The innate need we refer to as curios play is similar to what Frost (2010, p. 49) identifies as exploratory play, which he defines as 'the play of exploration from infancy to adolescence'. The framework of curious play differs, however, in its insistence that children interactively embody their surroundings through play. We are not only suggesting that curious play is more suitable than risky play as a framework for understanding children's self-managed play in nature. We are also proposing that children should be viewed existentially, as active explorers and playful agents in shaping their selves, knowledge, skills and world-view. Exploring children expand their abilities to manage and make sense of their lived-play experiences and life-worlds through a dialogue that challenges. Thus, they may alter and broaden their existing knowledge and mastery of environments.

In industrialized and urbanized societies, children's opportunities for dialogue with natural surroundings through playing are evaporating at a rapid rate. In response, childhood protection movements advocating children's free outdoor play are growing worldwide (Frost, 2010). We suppose that the protection of children's right to play freely outdoors would be strengthened if researchers on children in nature abandoned their emphasis on risk and adopted a curious play perspective. The main reason, we argue, is that curious play offers positive and existential aspects of what it means to be a moving, playing and growing child.

It is certainly true that children inevitably encounter physical challenges and potential dangers, and that these are relational and relative, depending on each child's ability in the actual situation. Hence, the stimulus for risk-taking and excitement does not have to involve serious physical danger. Children may also be exhilarated by confrontations with self-confident spiralling physical challenges, as well as intellectual challenges to their understandings of reality. When children act independently in situations in which they are not certain of the outcome, they may perceive the activity as risky or fearful, even though no objective physical danger is involved. They may also find these activities challenging, exciting, attractive and meaningful. Similarly, children may seek out a feeling of having 'butterflies in the stomach', which they may derive from expectations that accompany a wide variety of challenges, as well as from an exploration of unknown or uncertain conditions. The pleasure that ensues from experiencing this type of benign anxiety is likely to be continuous, progressive and self-validating. When children develop confidence in their own abilities, they may be said to have developed an inner awareness of trust. When things go well, they will set out to find and explore new affordances.

If the explanations of children's behaviour offered here have merit, we are confident that further empirical research will critically validate applying the concept of curious play to describe, analyse and understand children's sensory-bodily play in and with the natural environment.

Notes

1. The board of the Data Protection Official for Research, Norwegian Social Science Data Services gave ethical approval for the study. Children and their families were informed about the aims of the research, ensured that participation was voluntary and respected participant privacy and anonymity. Throughout the article we have scrupulously distinguished between own interpretations and the understanding of the play experiences in nature expressed by the participants themselves.
2. Our re-analysis of the data presented in Sanderud (2011) for this article was informed by the theoretical perspectives on curiosity and wonder already cited, as well as by the new thinking on the interface between children at play and their play environments.

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Disclosure statement

No potential conflict of interest was reported by the authors.

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'Winter children': an ethnographically inspired study of children being-and-becoming well-versed in snow and ice

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ABSTRACT

For many children living in Northern and mountainous regions of the world, playing in snow is enticing and connotes childhood for many adults. Even so, researchers have paid little attention to children's play in/with snow and ice. This paper aims to contribute to the growing knowledge on children's competencies and child-nature relationships by exploring how a group of children build their understanding of themselves and their environment during playful explorations in demanding winter landscapes. The study is framed by (1) a phenomenological-hermeneutic approach, (2) an analysis of selected evocative empirical examples of ways children play in/with winter materials, and (3) perspectives on '*Bildung*' as dialectical processes of being-and-becoming. Data were generated through ethnographically inspired fieldwork, including 20 children aged four to six, in a Norwegian Nature Kindergarten, emphasizing children's self-initiated outdoor play as educationally important. The fieldwork was conducted in 2018 during the coldest time of the year and draws on participant observation, children's photographs and on-site conversations. The study is inspired by the work of [Ingold, T. (2011). *Being alive*. Oxon: Routledge], [Merleau-Ponty, M. (2012). *Phenomenology of perception*. London: Routledge], [Gibson, J. J. (1979). *The ecological approach to visual perception*. NJ: Lawrence Erlbaum Associates], and the Continental European philosophy of *Bildung* [Biesta, G. (2002). Bildung and modernity: The future of Bildung in a world of difference. *Studies in Philosophy and Education*, *21* (4–5), 343–351] and applies Ingold's concepts of 'lines', 'knots' and 'dwelling', to explore children's playful movements and experiences along lines in an ever-evolving meshwork. Three themes are analyzed. First, the ever-transforming qualities of snow and ice are discussed as existential materials and cultural conditions in the children's dialectical process of being-and-becoming. Second, the kindergarten's snow-covered playground is seen as attractive and challenging from the children's perspective. Third, as the children increase their competence in the dynamic winter environment through movement, they embody existential knowledge and skills about the socio-material context of which they are a part. Thus, they familiarize themselves with their environment as being-and-becoming winter children.

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Introduction

Children in contemporary Western societies spend less time in nature than previous generations did and are less physically active than their parents were. These changes have inspired researchers and

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associations to develop programs to 'reconnect' children with nature (e.g. Frost, 2010; Louv, 2009) and thus stimulate their physical activity and growth. Parallel to these challenges, considerable research on sports, health and outdoor education has been devoted to place and material surroundings during the last few decades (e.g. Änggård, 2016; Hussain, 2018; Monforte, 2018; Taylor, Wright, & O'Flynn, 2018; Wattchow & Brown, 2011) as well as to children-nature relationships (e.g. Cutter-Mackenzie-Knowles, Malone, & Hacking, 2019). Yet, the new interest in conceptualizing children's connectedness to nature as a unity through outdoor play and education (Stevenson, Mannion, & Evans, 2018; Sverdrup & Myrstad, 2019) has only begun to enhance our knowledge of how children in different contexts make sense of nature (Adams & Savahl, 2017).

In the Nordic countries, children's self-initiated play outdoors and activities in nature are widely recognized as important educational praxis and aspect of daily life (Halldén, 2011). Additionally, the Norwegian government requires that all kindergartens, which today embraces more than 90% of the country's preschool children, provide nature experiences and learning through outdoor play all year round (Norwegian Directorate for Education and Training, 2017). Research on Norwegian nature kindergartens shows that the children typically spend a large part of their pre-school day outdoors (Lysklett & Berger, 2017; Sandseter & Lysklett, 2017).

Nordic studies scrutinizing taken-for-granted assumptions and perceived alterations have recently been published internationally (e.g. Arvidsen, 2018; Änggård, 2009; Fjørtoft, 2001; Gundersen, Skår, O'Brien, Wold, & Follo, 2016; Lysklett & Berger, 2017; Rautio, 2013; Samuelsson, 2008; Storli & Sandseter, 2019). Other studies have looked at the benefits of physical challenges and risk for preschool children (e.g. Sandseter, Little, Ball, Eager, & Brussoni, 2017) and of environmental education in preschools (c.f., Beery & Jørgensen, 2018; Caiman & Lundegård, 2018). Others have focused on the role of fantasy in how children make sense of natural environments (c.f., Jørgensen, 2018), how experiences with materials influence how and what children learn (c.f., Fredriksen, 2012; Jørgensen, 2016; Nordtømme, 2012), and the ways in which play with materials may have a purpose in itself (Rautio, 2013).

Although some of these Nordic studies include seasonal variations (c.f., Änggård, 2009; Jørgensen, 2016), few studies explore how natural materials, like snow, sand, or dirt, may have existential and educational dimensions in young children's self-initiated outdoor play. Thus, this study aims to contribute to the growing knowledge on the significance of child-nature relationships for children's growth by exploring the research question: 'how do children build understandings of themselves and their environment during self-initiated play with nature materials?'

Adopting a phenomenological-hermeneutic lens, we analyze data generated from ethnographically inspired fieldwork in a Norwegian nature kindergarten (*Friluftsbarnehage*), where outdoor education is a daily priority throughout the year. The fieldwork was conducted during the winter season. The theoretical analysis is based on a relational understanding of how children grow (Ingold, 2000; Merleau-Ponty, 2012) through explorative inter- and intra-actions with their environment driven by curiosity (Gurholt & Sanderud, 2016). Central to this study is the idea that humans understand the world through living interactively in it (Ingold, 2011). In addition, we employ Merleau-Ponty's understanding that all humans – in this case, children – are affected and grow by their active relationships with other humans and the world (Cataldi, 2008) and that the world in turn is affected (Ingold, 2000).

Studying educational aspects of play in/with snow may become exemplary for what is happening in a diversity of landscapes and seasonal conditions. In this case, the different ways the children move as they play do not only imply embodying landscape features but are inscribed in the snow and create a meshwork of clear traces and visible patterns. During this study, it became apparent that outdoor play in deep snow and on ice provide illustrative examples on how children grow during self-guided play in nature.

Theoretical framework

This paper is framed by an understanding of children's play as voluntary, spontaneous, ludic and exploratory. It adheres to a perspective that curiosity and exploration are innate driving forces that

inspire children to explore what they find novel and interesting (E. J. Gibson, 1988; Hodgkin, 1985). As they play and move hither and thither between known and unknown places, material and situations, they explore different aspects of themselves and their surroundings. Thus, a quest for existential knowledge about who they are and what happens in their life-world can be understood as fundamental drivers of children's play and growth (Gurholt & Sanderud, 2016).

In this study, we also apply Ingold's (2000, 2011) concept of dwelling and his metaphor that an environment can be characterized as consisting of lines, knots, meshworks. Children learn to know their world by living, moving in and sensing it (Ingold, 2000). Ingold's concept of dwelling posits that a landscape and its inhabitants are intertwined in a dynamic whole that is constantly (re)making itself. By wholeness, he means a meshwork of knotted cords 'woven from the lines of growth and movement of inhabitants' (Ingold, 2011, p. 151). Thus, when children play with others or elements in the environment, their lines are connected by knots. Consequently, they can be viewed as continually weaving themselves in a meshwork of relationships. We can illustrate Ingold's metaphor with this example: Imagine children playing on a playground covered with snow, as they do in this study. After a while, small patches of well-trodden snow mark places where the children have played extensively. These patches are connected by paths, which the children have created. Seen from above, the playground resembles a meshwork of lines, tied by knots. Continuing with Ingold's metaphor, these snow patches and paths are physical manifestations of children's movement and growth. Thus, the meshwork becomes an illustration of how the lives of individuals are intertwined with each other, as well as with non-human features of the environment. In short, children's movement weave them into their environment, and thus is fundamental for their perception and understandings (Ingold, 2011).

The relationship between children and their environment is interactively. Children may be emotionally affected by situations and material conditions (Cataldi, 2008). Sliding down a hill, for example, may generate a sense of exhilaration or fear. A child's body may also be influenced by how he or she lifts a heavy stone. At the same time, playing children influence their world. For example, the physical traces they leave on popular climbing trees and around boulders (Arvidsen, 2018; Ingold, 2000) are prerequisites for their understanding of themselves and the world.

J. J. Gibson's concept of affordances (1979) illuminates how winter environments influence children's play. For Gibson, an affordance is a perceived possibility for movement in the environment. Rather than a quality of either the surroundings or the child, it emerges from a combination of the surroundings and the ways in which the individual child understands its possibilities based on earlier experiences. Heft (1988) expands on Gibson's ideas, arguing that playing children continually discover new uses of their environment and new features in it. As we will demonstrate, snow exemplifies both the flexibility and the potential openness that the concept of affordances suggests.

The philosophy of *Bildung* is useful for understanding how children's self-initiated play mesh with their growth (Biesta, 2002; Gadamer, 2004). In general, *Bildung* connotes subtle fields of holistic experiential fostering or enculturation that emphasize a playful and dialectical process of being-in-the-world; a continuous 'becoming' in our awareness of possibilities and limitations in our knowledge. The approach includes respect for other cultures, nature and building democratic and environmentally responsible citizenship, including a sense of moral and ethical awareness (Løvlie, 2002). It also includes intertwined processes of being and becoming (Uprichard, 2008), which are situated within sociocultural contexts and open to consideration of individual goals and progress. *Bildung* may occur anywhere and at any time (Biesta, 2002), including time spent in outdoor education (Backman, 2008; Gurholt, 2008), sport and Physical Education (Quennerstedt & Larsson, 2015; Schenker, 2018) as well as in kindergartens (Ødegaard & White, 2017). It emerges from experiential knowledge, which can only be acquired through direct experience (Gadamer, 2004), and is thus linked to Merleau-Ponty's phenomenology of the body and the concept of lived experience. Moreover, journeys – exploring and experiencing unfamiliar situations, cultures and environments before returning 'home' – are a core metaphor of *Bildung*, contributing to self-formation and enculturation (Gustavsson, 2001). These metaphors can be applied to an interpretation of self-formation of knowledge-in-being in nature environments. Thus, one may argue that outdoor experiential education connects

knowledge about self, others and environments that are only accessible through participation. The concept of *Bildung* suggests that the driving forces of 'being-and-becoming' independent children are curiosity and experience as a quest for adventurous explorations of what is unknown, rather than a quest for risks itself. This makes children become competent in their present situation whilst expanding on their lived experiences (Gustavsson, 2001).

Methodology

To gain insight into children's play with winter materials, this ethnographically inspired study was conducted at a public kindergarten that emphasizes outdoor education.

The staff reported that the children alternate two weeks in an 'outdoor section' of the kindergarten with two weeks indoors. In the outdoor weeks, their only shelter is an un-insulated one-room wood 'hut', and they spend a considerable amount of time outdoors. They also have access to an indoor dressing room. During both the outdoor and indoor sessions, the children play in natural environments every day throughout the year. The fieldwork for this study took place while the children were in their outdoor session in January 2018.

The kindergarten is located in a semi-urban area on the west coast of Norway, close to a fjord surrounded by steep mountains. Due to its high latitude and the surrounding topography, the kindergarten receives no direct sunlight for many weeks every winter and during that time, it is usually covered with snow and ice. Its playground is a largely undeveloped natural environment, characterized by rocks, trees, small cliffs, roots and local flora and fauna. The children build houses, and dig and play in the snow and ice. Thus, the playground in this study shares some characteristics with what Frost (2010, p. 185) calls 'adventure playgrounds'. The children are encouraged to set their own agendas and roam the area more or less independently. During the fieldwork, the kindergarten staff also arranged hikes to nearby areas with natural environments that differed from the kindergarten's playground.

The entire kindergarten staff and all parents received written information about the study's purpose and methods and were assured that participation was voluntary. In addition, the parents were provided with information about the study written in simple language to read to their children. All of the staff members gave their written consent for participation in the study and all 20 children (4–6 years old) at the kindergarten participated, with their parent's written consent.

Drawing on sensory ethnography (Pink, 2009), the study employed participant observation, field talks (Fangen, 2010), 'play-along' research (Sanderud, 2018), and children's photographs (Einarsdottir, 2005; Pink, 2013). All of the informants contributed to the generation of data by means of observation and field talks that focused on how winter weather and winter materials influenced children's play. The fieldwork was carried out by the first author and discussed thoroughly with the second and third authors. The observation consisted of visual observation as well as active participation in children's play. The researcher's 'play along' strategy involved 'mutual experiences' with the children while maintaining an analytic distance (Sanderud, 2018). This approach provided a rich understanding of what it means to be a child in a winter-environment. For example, by providing the researcher with feelings of warmth spreading throughout the body while running, or of being 'compelled' by slippery terrain to slow down and use hands, feet and torso to stay balanced, we could explore a varied set of movement possibilities and competencies.

The researcher photographed, video recorded and wrote detailed field notes concerning everyday winter situations involving children playing with materials in a natural environment. During the same period, four boys and two girls photographed situations depicting their interests, which were subsequently used in interviews that focused on each child's individual images.

Pictures, videos, fieldnotes, and transcribed interviews from the fieldwork were manually coded guided by the research question, using Nvivo 12. The coding identified themes appearing regularly, but also those signifying diversity and conflicting or ambivalent ideas. Below, we expand on three analytic key-themes that demonstrate different aspects of being-and-becoming a child during play

in the winter environment. Furthermore, the analysis draws on the previous mentioned theoretical framework and employ three levels of interpretation as described by Fangen (2010). At the first level, we describe observations in detail. At the second level, what other may refer to as 'thick descriptions', we describe relevant context(s) of the observations. At the third level, we critically interpret the participants' inherent needs, meanings, agendas and/or motives.

Play and growth in a winterscape: three analytical key-themes

The first theme, 'play in snow and ice in an ever-changing winterscape', focuses on general qualities of human-nature interactions: how features of the environment are continually influenced by human action, and consequently change and provide different affordances both daily and in the moment. The second theme, 'playing along lines on the "sliding" hill', looks at how place-specific materials and topographies create possibilities for children's playful movement and are woven into social relationships. The third theme, 'weaving a knot with snow and ice', demonstrates how icy materials can become key elements in children's play. Although the three themes are illustrated primarily through excerpts from observations, their contextual and empirical foundation emerged from an analysis of pictures, interviews and field talks.

Snow and ice in an ever-changing winterscape

In the course of this study, the air temperature, humidity, precipitation, amount of snow and snow-conditions varied from day to day, as well as during each day. Consequently, the properties of the snow also ranged greatly. At colder temperatures, its consistency was reminiscent of powder or sugar: it was difficult to pack and shape into snowballs, for example. At warmer temperatures (above 0 Celsius), the snow was more like moist clay, and became easier to pack. If it snowed during the night, the new cover concealed traces of the children's play on the previous day: their footprints and snow figures, as well as the tracks they made climbing up and sliding down hills vanished. This overnight transformation of the environment provided the children with untouched surfaces and renewed affordances to play with in the morning. Some days, the snow went from cold, dry, hard and crumbling to mild, wet and malleable.

In addition to the snow and temperature, the light also changed throughout the day. Some mornings when the children arrived at the kindergarten their *winterscape* was hidden in almost complete darkness, illuminated only by some large floodlights. Dawn regularly transformed the atmosphere, sometimes giving the children a feeling that a new world filled with possibilities for play and exploration was rising around them. By the time they left in the afternoon, the 'stage curtains' of dusk had closed. Jørgensen (2016, 2018) find that light and weather inspire variations in children's play themes, as well as the atmosphere of their play-places. Rendering Ingold (2000, 2011), the shifting atmosphere influence how the children understand the environment. In this ever-changing landscape, children are never sure what their lines may cross or run into; what weather, snow conditions, or peers they may encounter. This adds new variations to affordances to explore, perceive and imagine. In motion, the children experience resistance, fear, joy, laughter and exhilaration along their lived lines and in the knots they form. Thus, the set of affordances in the playground varied greatly throughout the fieldwork for this study and the data corroborate that the *winterscape* is vigorous and ever-changing.

A *winterscape* is understood to be a cold, white or grayish environment, partly or fully covered by snow and ice. Here, it resonates in playing and growing children. Further, in this study *winterscape* refers to an environment for play and growth that children shape, understand and make their own through their activities. This perspective differs significantly from a naturalistic view of the landscape as a neutral and external backdrop for children's play. As a concept, *winterscape* is inspired by Ingold's (2000) 'taskscape', a term he created to highlight how dwellers create an environment that is always becoming in response to their activity.

Like Arvidsen's (2018) study of older children, the field-researcher of this study observed that in a *winterscape*, materials flow. Children picked up snow and ice in one place and then threw it away, or moved it to another place where they used it for a different purpose. For example, snow was mixed with water or shaped into human figures or fantasy animals. When the researcher left the playground in the afternoon, he regularly observed traces and patterns of children's play – for example, places where their hands had picked up snow to make snow figures and the snow figures they had created, 'living' throughout the landscape. Thus, the flow contributed to transforming the surface and atmosphere of the *winterscape*, from pristine in the morning to an area filled with traces of children's play and imagination in the afternoon.

Playing along lines on the 'sliding' hill

The kindergarten's playground has a topography that includes hills with slopes of varying steepness. The researcher observed children engaged in different types of sliding and playing on them as the qualities and amounts of snow changed from day to day, and even during the day.

One morning after about 15 cm of snowfall, many children were sliding down a large hill at relatively low speed. The researcher selected one of the girls to watch closely, and writes in his fieldnotes:

> Silje slid with her feet forward from her upper body, shoveling snow in front of her shoes. I observe that the snow alongside her is "softer" than the snow where she had recently slid. There, the snow looks firmer. After several children slide down in the same track, Silje no longer shovels up snow when she slides. Her track has become icy. In addition, it appears that her speed has increased.

As more children slid down the hill, the track that Silje had created in the snow was transformed from loose to firm and icy, enabling the children to slide faster. Thus, the relationship between the children and their environment became interactive: The sliding children gradually shaped the track into a fairly straight line with a smooth surface, although it continued to have small bumps and short curves. One might say that the micro-texture of the hill responded to the sliding children by creating physical imprints such as bumps, curves and an icy track that afforded other ways of sliding.

As they slid, the children spun and jumped on small bumps. From their point of view, the hill could be perceived as pulling and spinning their bodies down the slope. Some accelerated to high speed so they could lift off at the bumps, while other's braked with their feet to keep their speed down. Thus, sliding became a multi-sided relationship of the children-hill-line-and-knot patterns that, following Ingold, played 'an active part in the ongoing formation' (2011, p. 70) of both the children and the hill. Thus, challenges such as a sharper-than-expected curve may be unpredictable when the children initially slide, but become softened and familiar as they master it.

These variations suggest that 'sliding' is not a single form of movement, but a collection of different movements shaped by children's interests and responses to affordances, and evolve as they expand and experiment with their range of movement. Thus, the concept of 'sliding' becomes a multiplicity of ways of being in motion – variations that may be fun, attractive and exciting, but may also end in pain and tears. The concept of 'sliding' continually offers new challenges and meanings as the children-hill relationship develops.

Silje's experience illustrates how the children-hill relationship both creates and changes affordances as the children develop new ways to utilize and master natural materials and relate to their varied qualities. Thus, the lines children play along can be partly unpredictable and partly follow a pattern that the children may be(come) familiar with.

After the children had slid down the hill, many of them climbed back to the top. Bent's climb exemplifies how children's movements can occur as a response to their environment, in this case the texture of the sliding hill.

> I observe Bent ascending the hill. He seems to walk fairly "normally" up the gentle slope, with his arms hanging casually down. Suddenly, his feet slip and he stretches his right arm out. One more step and he lowers his arm

> again. As he climbs, he slows down, and seems to be more and more focused on his steps, carefully choosing the places where he plants his feet in the snow. His footsteps are shorter now and controlled. His body seems a bit "stiff", and his torso shifts quickly from side to side in small movements. As he approaches the top, he lowers himself and crawls the last few meters on his knees, using his hands. Other children climb to the top by different routes. As I climb some of the hills, I have to walk on the sides of my boots. The holes they create are shallow because the snow is icy and hard, and the edges of my boots barely fit in. I feel unsteady and afraid of falling. Although Bent does not fall while climbing, other children do.

Here, Bent exhibited embodied control and balance as he climbed the icy hill. He was able to play in and with the slippery conditions, even though these created an unstable, demanding environment. His stride constantly shifted in length and sometimes went sideways as his body adjusted to the micro-terrain. Applying the insights of J. J. Gibson (1979), this way of walking can be interpreted as a consequence of the relationship between the terrain and Bent's posture and physical ability. While climbing, his body responded to the demanding textures he encountered. His constant, precise shifts in stride, adjustments of his torso, and utilization of his arms can be understood as emerging from the interplay between Bent, the ground and gravity.

Bent's precise positioning of his feet, the support he drew from his hands in different types of snow wove him into the textures of the hill, providing him with tactile experiences of friction, gravity, and balance as his movements initiated a child-icy hill meshwork. At the same time, he developed his 'body schema': an awareness of his body's relationship to the texture and topography of the hill. Following Merleau-Ponty, Bent's body just 'knew' how his hands, feet and balance should shift to accommodate the small curves and bumps of the icy texture (Morris, 2008). This awareness was rooted in his previous play and movement experiences in this and similar terrain. Bent's understanding of his own physique in relation to the ground gave him clues as to how he might use his entire body to ascend the hill. At the same time, the hill guided his movement (c.f., Gibson, 1979). It seems that he had an immediate idea of how to maintain control of the situation as he moved, touching the ground with different parts of his body: His steady progress across the terrain required considerable dexterity.

Merleau-Ponty's insights would suggest that Bent's ascent of the hill evoked experiences of life and about his living body – about balancing, being in a state of balance and regaining his balance whenever his feet slipped, as well as negotiating the physical relationships of, for example gravity, he was entangled in. Although Bent's motivation for ascending the hill, other than his desire to slide back down, remains unclear, his experiences are about not only snow and ice as hard and slippery materials. While moving on those materials and playing with them, he grow understandings about his capacities and ableness, and how to move; about unnoticeably adjusting his torso and limbs to maintain his balance, control and/or joy in shifting environmental conditions. These were skills he obviously mastered well – certainly, better than the researcher. Bent's body seems to have easily 'read' the best way to ascend the hill and responded to it pragmatically. His body 'understood' or responded immediately to the situation. Through repeated ascents in this particular hill, his moving body developed a habit of how to read the environment and ascend slippery terrain. Thus, his varied experiences of moving in the terrain developed his body schema. We can say that his competence of the slippery slope became embodied (Standal & Engelsrud, 2013).

Most of the children seemed to move confidently across the icy and slippery natural environment, confirming their expertise in mastering what the staff and the researcher found to be difficult terrain. The staff members, in fact, had spiked shoes to help them grip the icy ground and were rarely observed on the hills. The researcher, although highly experienced in walking on snow and ice, felt clumsy and found it difficult to walk on the hill, whilst the children went up and down quickly and confidently. Thus, the environment had a different meaning for the children than it had for the adult staff and researcher. The adults regarded the ice an obstacle; the children did not, even though they sometimes lost control and slipped and slid, indicating they were negotiating a fine balance between what they could and could not master. Aksel and many other children told the researcher that they were not afraid of climbing on the hard, slippery terrain, even though they probably knew that falling could be painful. They played with little direct advice or supervision from the

staff, although they knew where to find a staff member if necessary. Thus, the children's trust in their capacity to handle winter conditions was an important component in the child-nature relationship, as well as in the pedagogy employed by the staff in this study and in other Nordic kindergartens (Halldén, 2011; Sandseter & Lysklett, 2017). Following Ingold, their understanding of their capacities can be interpreted as a result of the line they moved and played along, the knots and meshwork created by their play – what Merleau-Ponty (2012) would characterize as their 'intentional arc'.

The children may have perceived the icy hill and gravity as partly predictable and partly unpredictable 'dance partners'. From their perspective, the children-hill-gravity interaction was a partnership in which the participants played with and challenged each other. The partners 'took turns' leading and being led: Bent, for example, kicked his feet into the hard snow to get footholds. Sometimes gravity may be said to have metaphorically gripped his feet and pulled them a few centimeters, then suddenly ceased pulling. Bent then continued climbing, using his hands for support. This sequence could be viewed as a back and forth process, but Ingold's insights would suggest it is more accurately a longitudinal movement along Bent's growth trajectory. Children may perceive something as mundane as moving through terrain as exciting because they never know where they and their dance partners will end up.

Weaving a knot with snow and ice

The third example unfolded around an old, partly buried rowboat. The researcher sat on its rail, talking with two girls. One of them, Eli, showed the researcher an ice chunk that she had found the day before. 'I hid it over there', she revealed, pointing toward some trees. 'Somebody stole it, but I found it again'. Eli's decision to hide the chunk of ice so that she could play with it again the next day, as well as her search to recover it both indicated the value that she placed on the ice. Other children expressed a similar aesthetic appreciation of pieces of ice. One girl praised a chunk as 'so beautiful, and [it] looks like an ice-mountain'; another declared that her ice block tasted 'like chocolate', suggesting that she not only had tasted it, she really liked the way it tasted. A boy commented that his piece of ice 'looks like art', while others cleaned the dirt from them. Photographs taken by children also depicted ice in different ways. Some, for example, showed the photographer looking through thin sheets of ice, making his or her face appear blurry.

Suddenly Aksel appeared up by the boat and wanted to join in. Eli told him that he had to collect some ice if he wanted to join us and instructed me to help him. Aksel guided me to a small, partly frozen stream. My field notes read:

> I ask Aksel how we can break the ice. "We should hit it with a stick", he quickly responds. "This one is thick" he declares, lifting a stick approximately 1.5 m long that is too thick for his hand to grasp all the way around. He tries to strike the ice, but the stick seems too long and heavy for him to control its arc. He tries a few times, but only succeeds in making small, white spots on the ice. I ask if I should help. He nods. I kick the ice. After four kicks, a chunk about the size of a basketball breaks off. Aksel stands gaping in amazement and makes an "ooooh" noise, runs toward the chunk of ice and picks it up. We walk slowly back to Eli and the boat. Aksel's steps seem heavy and his face looks focused. Eli smiles when he arrives. She looks very happy and runs towards Aksel.

Aksel seemed to have 'known' where to find ice and what properties the stick needed to break off a piece of the frozen stream. He acquired this knowledge in the course of several years in the *winterscape*, during which he had experienced shifts in weather and material conditions during daily and seasonal changes and learned that water freezes to ice at cold temperatures and can be tasted, cleaned, admired, carried and broken.

When lifting and swinging the long, heavy stick, Aksel may have experienced that his body's center of gravity changed as he swung it, as well as how it bounced back after hitting the ice and how the impact reverberated through his body. One might say that from Aksel's perspective, the huge stick responded to his actions by bouncing back and that the ice reacted by 'turning into' white spots as Aksel and the stick 'danced' (c.f., Ingold, 2013). Applying Merleau-Ponty's (2012) conceptual framework, as Aksel swung the stick and struck the ice, he developed a sense of its length and

how far its tip could reach. Although it appears that he was unable to break the ice, we may interpret his actions as a process of incorporating the stick's material qualities.

Even though Aksel's body moved as he hit the ice, the white spots appeared in relatively close proximity to each other. His strikes were influenced by the response of the ice, and how his body compensated for that response. Our interpretation of Merleau-Ponty suggests that as he wielded the stick, Aksel not only sensed its weight and texture, he also perceived the hard, slippery surface of the ice with the stick.

The ice was marked by the activity; Aksel was changed through his interaction with it. His stick inscribed white marks on the ice that were visible to his peers. After the large chunk was removed, the researcher observed that it took several days for that spot in the stream to refreeze. Before it did, other children searching for ice may have been astonished by its absence in that spot and changed their play accordingly. In other words, Aksel and the researcher were active contributors to the meshwork of children moving to and from the stream as they broke, lifted and carried chunks of ice and 'stimulated' the stream to create new ice.

The openness of the outdoors provides an important arena for developing social relationships (Jørgensen, 2018). Aksel probably recognized that he risked disappointment if the ice he collected did not meet Eli's expectations. Fortunately for him, she expressed awe when she saw what he had brought. Her acceptance of his contribution influenced their negotiation of roles in the kindergarten 'play-culture', with the ice chunk functioning as a mediator that wove their individual lines into an icy knot. As their play developed, the ice 'unlocked' the Aksel-Eli-relationship, intertwining both of them deeper into the other's meshwork.

Being-and-becoming familiar with snow and ice

The above analysis of children's play and movement in, with, and across snow and ice – based on the perspective of *Bildung*, embodiment, lines, knots and meshwork, and affordances – suggests that the children in this study were engaged in life-forming experiences with existential qualities.

Children's lived lines do not have a specific beginning or end; they weave as they move from place to place every day. Their understandings of their physical, cognitive and social limitations and possibilities expand as they explore and weave a meshwork that ties them together with local materials and other children. The examples cited here demonstrate that children are highly competent; in some cases, more competent than adults, for example, in moving across the slippery ground. They display confidence and competence when climbing icy slopes and roaming in a *winterscape*. Growing understandings of how to climb a slippery hill or break thick ice involve not only embodiment of different usage of one's own body in different ways or overcoming gravity, but sensing and embodying the world through one's hands and feet in response to challenges such as slippery ice. It also requires living in one's world in ongoing explorative ways: playing differently and seeing new possibilities for play that integrates growth. Understandings of their environment and its possibilities and limitations are existential; they can only emerge through playing, exploring and living within environments. Thus, different ways of movements, such as running, sliding, picking, and hitting nature materials becomes central in being-and-becoming.

Although, the examples of children's play in a demanding winter environment are central in this paper, other environments, seasons, and materials will provide children with a range of place-specific possibilities for explorative and playful moving retaining place-specific existential dimensions and enculturation (Arvidsen, 2018; E. J. Gibson, 1988; Fredriksen, 2012).

We view the children in this study as being-and-becomings, recognizing that they grow an understanding of their environment and their body's capacities as they move, play, explore and form life-threads into a meshwork of child-world relationships. From this perspective, they are active agents who have constructed and construct their environment in the past, present and future. They exhibit competence by moving fluidly, confidently, and trustfully across rough, icy terrain and utilizing winter materials in their play. When they climb a steep hill, slide down it or collect ice, they are

expressing the value of their play. These children are always experiencing, always growing and becoming steadily more confident in their own abilities and expertise in varied winter conditions. Intertwining themselves in a *winterscape* meshwork, they are constantly becoming; entangled in different relationships as they construct their evolving worlds. Negotiating social roles and exploring relationships with little adult supervision allows them to make decisions and enjoy outdoor experiences that foster independence and self-confidence, which are considered valuable democratic qualities (Aasen, Grindheim, & Waters, 2009).

The varied weather creates constantly changing, dynamic atmospheres and qualities in the playground. In a landscape renewed or transformed during the night, every morning brings new possibilities. Perhaps new snow has arrived, the temperature has changed, or traces of children playing the previous day have hardened. Thus, the *winterscape* constantly offers children different affordances and circumstances, which they perceive, conceive, and explore and/or to which they respond. Something as mundane as ascending a hill may be astonishing and attractive because the children can never be completely sure what condition the hill are in or what challenges it may present. Consequently, they learn to encounter changing situations as tests of their capacities, at once exciting, joyful and novel (Gurholt & Sanderud, 2016). Through their relationship with the winter environment, journeying along lines and playing in knots, they become accustomed to coping with variations in a world that is 'a constant source of astonishment' (Ingold, 2011, p. 74). In addition, they build self-confidence.

Children develop their own play-culture, negotiating what to do, where to go and who to include (Jørgensen, 2018). As they travel along their own lines and explore the knots that they share with other children and materials in kindergarten, *Winterscape* children not only shape their understanding of themselves and their environment, they also grow into and contribute to the culture of outdoor play that is central to northern regions. Thus, they also become incorporated into the culture at large, which is at the core of enculturation or Bildung (Gustavsson, 2001).

We have argued here that when children explore relationships and dwell within the *winterscape*, they are engaged in processes of being and becoming that are attractive and meaningful in itself. In combination with their inherent curiosity, fantasies and enthusiasm, the landscape's challenges and responses immerse children in a continuous hermeneutic, back-and-forth movement between the known and the unknown. The hermeneutic quality of their play (Gadamer, 2004), enables these children to comprehend their current experiences in the light of their past. Through this process of elaboration, they continuously reshape their past, present and future understandings of the environment and their relationship to its features, weaving their lines of movement into a constantly evolving meshwork of relationships. At the same time, their present is meaningful in itself. In other words, the *winterscape* gives them an opportunity to explore who they are here-and-now in a meshwork of relationships while expanding the understanding of themselves, constructed through their ongoing experiences with snow and ice.

Concluding comments

This paper has argued that as children move and play through natural environments, they embody their environment as beings-and-becomings. As the children play in dynamic and ever-changing environments, the children learn to trust themselves and to appreciate moments of the unexpected. In responding to and building understandings of how to respond effectively to challenges, they mature and grow competencies essential to life.

Hence, children playing in nature are never 'finished' or complete. They are always beings in becoming, always growing, as they constantly foster competence in relation to their environment. At the same time, they exhibit competence and control in demanding situations.

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Article III

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Didactic sensitivity to children and place: a contribution to outdoor education cultures

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ABSTRACT

There is a tendency in European education policy to emphasise *more* and *better* deliberate learning outcomes. The tendency is criticised for taking an instrumental view of education [Biesta, G. (2010). *Good education in an age of measurement: Ethics, politics, democracy*. Routledge,; van Manen, M. (2008). Pedagogical sensitivity and teachers practical knowing-in-action. *Peking University Education Review*, *6*(1), 2–20. http://www.maxvanmanen.com/files/2011/04/2008-Pedagogical-Sensitivity-Teachers-Practical-Knowing-in-Action.pdf] and threatening children's self-governed play opportunities [Pettersvold, M., & Østrem, S. (2019). *Problembarna: Metoder og manualer i barnehage, skole og barnevern*. Cappelen Damm akademisk]. However, self-governed play outdoors is perceived as educationally important, notably within Nordic early childhood education. This paper aims to contribute to the international debate on what constitutes good education by investigating an outdoor education culture framed within the context of Nordic early childhood education. We investigate the research question of *what characterises teachers' outdoor didactics in self-governed play and growth as these appear in a Norwegian nature kindergarten?* The theoretical framework builds on (1) perspectives on *Bildung* as playful self-formation [Løvlie, L. (2002). The promise of bildung. *Journal of Philosophy of Education*, 36(3), 467–486. https://doi.org/10.1111/1467-9752.00288; Steinsholt, K. (2010). Vi må miste oss selv for å finne oss selv igjen. Lek, erfaring og danning hos Hans-Georg Gadamer. In K. Steinsholt, & K. P. Gurholt (Eds.), *Aktive liv* (pp. 101–119). Tapir Akademiske Forlag] and (2) a relational perspective on children's self-governed outdoor play as a way of integrated dwelling and growth through intimate *correspondence* with environments [Ingold, T. (2000). *The perception of the environment: Essays in livelihood, dwelling and skill*. Routledge, (2018). *Anthropology and/as education: Anthropology, art, architecture and design*. Routledge]. Data were generated through ethnographic fieldwork in a public Norwegian nature kindergarten that emphasises children's outdoor play as educationally important. Nineteen children aged 4–6 participated. The fieldwork drew on participant observation, including playing with the children and on-site conversations. Using the theoretical framework as a lens, the educational culture is conceptualised as *didactic sensitivity*, which entails the teachers' delicate sensitivity and responsiveness towards children and place. The teachers act professionally by creating unique,

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thoughtful, responsive, and situated conditions for children's autonomous growth in natural environments.

Introduction

There is a tendency in European education policy to emphasise *more* and *better* deliberate learning. The climate around education policy is influenced by politico-economic policies that emphasise concepts such as lifelong learning primarily in favour of producing human capital and economic growth over democratic and humanistic values (cf., Biesta, 2010, 2016). Criticism of the marketisation of education is made by researchers in different fields, including early childhood education (ECE) (Moss & Urban, 2020), physical education (Evans & Davies, 2015) and education in general (Biesta, 2010; van Manen, 2008).

Parallelly, researchers argue that outdoor play in a natural environment confers substantial benefits of promoting health and development (Brussoni et al., 2015). It provides a site for the children's growth (Sanderud et al., 2020) and is at the core of the Nordic kindergarten tradition (Kragh-Müller, 2017). Additionally, Pimlott-Wilson and Coates (2019) argue that outdoor play and learning develop skills valued by governments that request *more* deliberate learning. Nevertheless, children's play in ECE settings are increasingly organised and legitimised for specific purposes, such as improving cognitive, social, physical, and emotional development (Broadhead et al., 2010). Children's play is increasingly influenced by digital play forms (Edwards et al., 2020), standardised play equipment, and risk-reducing measures (Ball et al., 2019).

There is a growing body of research on *ways to facilitate* and *justify* teaching and learning that is place-responsive (Wattchow & Brown, 2011) and play-based (Knight, 2009). Common to these approaches is that they value experiential learning and teachers' professional judgment and practical knowledge-in-action. Professional know-how is one essential characteristic of experienced and sensitive teachers (van Manen, 2008).

This paper aims to contribute to the international debate on what good education is by investigating an educational culture within the Nordic tradition that emphasises outdoor play. The Nordic tradition treats children as competent, regards local natural places as having pedagogical potential and perceives teachers as professionals.

Against this background, this paper explores the research question of *what characterises teachers' outdoor didactics in self-governed play and growth as these appear in a Norwegian nature kindergarten?*

We discuss and conceptualise the teachers' practical knowledge-in-action in the outdoors as *didactic sensitivity*. By articulating implicit qualities of the teacher's praxis, we make it accessible for researchers and practitioners while contributing to the international debate on what constitutes a good education.

Background and context: the 'learnification' of kindergarten

One dominant rhetoric in education policy in many European countries, including Norway, is dominated by a free-market logic centring on what (economic) profit society may gain from investment in education. This logic is influenced, among others, by the OECD and James Heckman. The *Heckman Curve* (The Heckman Equation Project, 2019) shows how investment in the early years will deliver more profit in terms of human capital than investment in older students. *Human capital* here refers to citizens who possess skills to produce and invent, such as for industrial application. At the core of this concept is the aim to *secure* learning outcomes through *standardised* and *evidence-based* learning programmes (Biesta, 2020a). The Heckman Curve and political fear of low scores on international comparative student assessment studies in schools, such as TIMSS and

PISA, may have combined to lead to an increased focus on *learning outcomes* in school and kindergarten – what Biesta terms as 'learnification'. Within this climate, questions about *what* to learn and *why* to educate are eclipsed by emphasising how children may learn *more* and *better*. However, this one-sided focus on learning is directionless without specifying the *what* and *why* of education (Biesta, 2010).

Moss and Urban (2020) criticise the OECD for a narrow and predefined understanding of what is essential to learn in kindergarten. They argue that the OECD's solutions are insufficient to meet contemporary social challenges such as the current climate crisis and, let us add, pandemics and differing needs among children.

A consequence of learnification is that many kindergartens – such as in Norway – have been instructed to implement standardised learning programmes (Pettersvold & Østrem, 2019). Instructing such implementation indicates that policymakers and kindergarten owners want to control and implement programmes that supposedly *work*. Biesta (2016) questions the premise of standardised learning programmes by arguing that it is impossible to control what learners will learn.

The utilisation of standardised learning programmes differs from *the Nordic kindergarten tradition*, which values children's self-governed play in natural environments as educationally important. It is based on a socio-educational approach to learning that assumes that learning occurs through self-governed play, exploration, and social processes. However, the Nordic tradition is perceived to be under pressure by the increased emphasis on narrow academic learning outcomes (Kragh-Müller, 2017).

Inspired by Biesta (2020b), we understand *education* as oriented towards socialisation into cultures and values, shaping children into independent subjects, and transferring specific knowledge and skills. Thus, education includes perspectives on teachers and learners that connect with perspectives on outdoor education (Loynes, 2018).

The concept *didactic* entails 'relations between teaching, learning, and socialisation' (Quennerstedt & Larsson, 2015, p. 565) in Scandinavia and continental Europe. The concept covers a socio-cultural approach to learning concerned with teaching and learning theories, situated practices and 'the context-embedded character of learning concerning participation and membership in a social group' (Quennerstedt & Larsson, 2015, p. 567). A central idea in didactics is that education involves variable content and formats chosen by teachers, institutions, policymakers, and other areas of society. In the English language, the word *didactics* can be associated with systematic instructions or specific teaching methods differing from the continental European perspective.

Theoretical framework

Growth along corresponding lines

Social anthropologist Tim Ingold's (2000) ontological premise is that humans, including children, dwell in the world by shaping and being shaped by the social and physical environment. Ingold (2007) develops the concept of *lines* to illustrate how humans and environmental features grow together through movement. Humans, he argues, live their lives along non-linear lines. These lines are woven together like threads in a growing meshwork consisting of, in this case, children, teachers, natural- and socio-cultural surroundings. The lines influence each other in a process Ingold conceptualises as *correspondence* (Ingold, 2013, 2018). He defines *correspondence* as 'the process by which beings or things quite literally co-respond or answer to one another over time' (Ingold, 2018, p. 26). Myrstad et al. (2021) use children walking in deep snow to illustrate *correspondence*. They argue that where and how children move in deep snow results from how children attune their bodies and muscles to the conditions and find a rhythm for movement. Simultaneously, the snow responds to the children's movement by being shaped into paths. Through correspondence, children create knowledge and meaning (Ingold, 2018).

Krüger (2018) takes a different approach to growth. For him, growth results from the Foucauldian discourses creating a dramaturgy that constitutes and shapes physical, social, and cultural environments. Krüger's perspective is related to Goffman's ideas that humans act according to social expectations to receive recognition. Outdoor researchers employ Goffman's ideas to analyse adventurers' self-presentations in social media (Beames et al., 2019). Inspired by Krüger, we suggest that the *dramaturgy* in children's play includes different *energies* that drive, paralyse, or compose movements, experiences, and pedagogical situations. The dramaturgy is created, maintained, or blocked by teachers, groups of children, cultural values, norms, and practices. Variations in seasons and weather influence the play's dramaturgy by influencing children's meaning-making, how they move (Myrstad et al., 2021; Sanderud et al., 2020) and different play moods (Jørgensen, 2016).

Outdoor play as self-formation

In this paper, 'play' refers to activities that are 'non-compulsory, driven by intrinsic motivation and undertaken for [their] own sake, rather than as a means to an end' (UN Committee on the Rights of the Child [CRC], 2013, p. 5). According to Steinsholt's (2010) reading of Gadamer, play is a subject that continually unfolds and shifts direction. It requires the players to be absorbed in the play and allow play to shift directions with no other reward than to play. Thus, there is something unpredictable in play. We emphasise outdoor play that Edwards et al. (2020) characterises as a 'traditional' form of play.

Throughout the paper, we use *self-governed play* to describe children's autonomous play by following their initiative. We recognise that teachers, peers, curricula, legislation, and playgrounds influence how children play. Consequently, Wood (2014) questions whether children's play can be *free*. Play is essential for children's learning. However, a prerequisite is that play is well facilitated (Broadhead et al., 2010), such as by considering children's skills and interests. Play is also a type of *self-formation* and hermeneutic process. Children continually create experiences that contrast, confirm, or transform past understandings as they play. These back-and-forth processes challenge and change their assumed *truths* (Steinsholt, 2010). Diverse situations occur in which children may wonder about things and their lives by seeking answers to questions such as *who am I?* and *what can I do?* That is at the core of *self-formation* (Løvlie, 2002). A related perspective on self-formation is applied to children's outdoor play by Gurholt and Sanderud (2016). They understand children's play as a self-driven, playful exploration of the border between what children know and what they do not understand. It represents self-formative processes that shape children's understandings.

The Framework Plan for Kindergartens, which regulates kindergarten pedagogical content in Norway, emphasises exploration (Ministry of Education and Research, 2017). Inspired by Ødegaard (2020), we understand exploration as play or curiosity-related action that results in transformative dialogues between children and the environment. Such conversations are open-ended and may take children into unforeseen and unknown situations to discover new clues to meaning.

The forms of embodied wisdom that explorative and experiential types of play create may be challenging to observe and quantify. These play processes contrast with what Biesta (2010) refers to as the currently dominant educational rhetoric, which calls for *more learning* in measurable content knowledge.

Natural environments

We understand *natural environments* and socio-cultural contexts as being intertwined. Accepting Ingold's (2000) understanding, children create meanings in relationships with the environment and the socio-cultural context. Teachers, children, political frameworks, playgrounds, and contemporary socio-cultural understandings of *nature* and *outdoor education* are examples of relationships that frame conceptualisations of natural environments and their educational potential. *Natural environments* do not have prescribed inherent meanings or pedagogical functions that the children

can extract. Instead, children and adults create meanings and pedagogical ideas related to earlier experiences, the current situation, and cultural ideas.

Methodology

This ethnographic study explored outdoor didactics in a Norwegian nature kindergarten. The kindergarten is in a semi-urban area in western Norway. We selected the kindergarten because it emphasises self-governed outdoor play and outdoor education as educationally important. Consequently, it has an outdoor playground with a natural environment. Children can build dens and play with snow, mud, plants, and stones throughout the year. Within walking distance, the kindergarten has access to diverse natural environments typical of towns and settlements in the western part of Norway, such as a fjord with beaches, rocky fields, small streams, and nearby forests. The children rarely use digital equipment, and the teachers have few worries about children getting injured. Thus, the kindergarten represents an alternative to risk-averse approaches and the development of converged digital-traditional play forms (Ball et al., 2019; Edwards et al., 2020).

The children alternate between spending time indoors and outdoors. They spend two weeks in the 'indoor section' followed by two weeks in outdoor areas both at and away from the kindergarten. Their only shelter is an uninsulated one-room wood hut during the outdoor weeks, and they spend considerable time outdoors. They also have access to an indoor dressing room. During both the outdoor and indoor sessions, the children play outside every day throughout the year. The fieldwork took place during the children's outdoor sessions in the winter and summer of 2018.

Teacher's and children's participation in the study was voluntary. The teachers and all the parents in the kindergarten department received written information about the study's purpose and methods. Additionally, the parents received information about the study in simple language to read to their children. All 19 children, aged four to six, participated with their parents' written consent. All the teachers gave their written consent. The study's ethics were approved by the Norwegian Centre for Research Data.[1]

The first author conducted the fieldwork. Drawing on sensory ethnography (Pink, 2009), he employed participant observation, including informal conversations (Hammersley & Atkinson, 2019), and he played with the children (Sanderud, 2020). In sensory ethnography, the researcher focuses on sensory and embodied aspects (Pink, 2009). This provides possibilities for the researcher to gain insight into children's sensory relations with their play-world.

Observations and field experiences were recorded by videos, photographs, and by writing fieldnotes. This combination allowed the first author to play with the children while paying attention to his embodied experiences. The video recordings provided a detailed capture of how children and materials influenced each other.

The research project, including the proposal, fieldwork, and analysis, was thoroughly validated during discussions including all authors. Reflexivity was maintained by discussing ways our prejudices may have coloured the interpretations (cf. Hammersley & Atkinson, 2019). Additionally, the first author reflected on his position in children's play by asking himself questions such as 'how do the children play and how do I play?' (cf. Olive, 2020).

The data was manually coded using Nvivo 12 to obtain an overview of the material, guided by the research question. One example from the fieldwork, titled *At the Seashore,* functions as a 'key event' (Fetterman, 2010, p. 99). We selected the example because it illustrates how teachers facilitate play and growth typical of the observations made. It provides insight into the complexity of the relations between the children, the adults, and the natural environment in situations where children apparently *played independently*. However, closer investigation reveals that the children's play was framed by a carefully conducted didactic. The theoretical framework was used as a lens to submit the *At the Seashore* situation to in-depth analysis through a hermeneutic back-and-forth process between the data, the research question, and close readings of the study's theoretical framework (cf. Alvesson & Sköldberg, 2018). All authors validated the analysis through critical examination.

Various situations where the children's play was facilitated regarding the place, seasons, and individual children have been analysed elsewhere (Sanderud, 2020; Sanderud et al., 2020).

The analyses employ what Fangen (2010) describes as three levels of interpretation. The first level relates to detailed observations, meaning that we have condensed observations into detailed descriptions. The second level relates to what others call a *thick description*, which means that we have investigated relevant contexts and interpreted the situation in light of the theoretical-contextual framework. At the third level, we have critically interpreted the structures, including the didactic practices, that influence the children's actions and/or motives.

Analyses: facilitating outdoor play and growth

In this section, we analyse the situation *At the Seashore* in light of this study's theoretical framework. The section is structured around central elements in the teachers' creation of conditions for children's play. A general impression is that the teachers had a crucial role in facilitating the children's play, although the teachers' involvement varied.

At the Seashore

> It is a hot summer day. The teachers decide to hike with the children to the fjord. The seashore is approximately 60 metres wide. The ground is covered with grass, and next to it is a dense forest of young deciduous trees. The water is turquoise, cold, and shallow near the shore. I sense a cool, refreshing, breeze in contrast to the hot and still air back at the kindergarten. The two accompanying teachers are standing at different places along the seashore talking calmly with the children. The children are spread out along the seashore, wading or playing in the forest. Wading children stare into the water while using their hands to pick up stones, seaweed and shells and bring them to the surface. Some of them use the landing nets and magnifying glasses provided by the teachers. Suddenly, a group of children gather around one teacher. She is standing in the water holding a stone that she has taken from the seabed. Small bubbles rise from the seabed to the surface. "It's from a sea serpent!" a child says. One boy puts his magnifying glass underwater to investigate.
>
> A bit later, one girl starts to scream that her shoes are submerged. She seems terrified and tells me that she put them on dry land, but now they are underwater.
>
> Two boys, whom we call Dag and Fredrik, invite me into the dense forest. Here, we are out of sight of the teachers. Dag tells Fredrik and me about an edible root and shows us where to find it and how to dig it up, clean it, and eat it. It seems like this is the first time Fredrik has tasted it. Fredrik holds a root with soil on it close to his mouth. Fredrik tells us that he likes the taste of it. They agree to notify the other children that they have found *candy*.

Creating a culture of independent outdoor play

The situation *At the Seashore* represents one of many hikes and events children and teachers undertook. The teachers regularly went on hikes with the children to various places. For example, they went to a frozen waterfall and to a snowy field to play and ski. Hiking to various places throughout the year is a common pedagogical practice in Norwegian kindergartens (Sandseter & Lysklett, 2017). The hikes often included eating lunch, drinking hot chocolate around a fire, whittling sticks, exploring, and playing with local materials. The teachers carried the required equipment in backpacks. Hiking and eating outdoors are also a way of introducing children to local nature, stories, the Free Public Access Rights (in Norwegian: *Allemannsrett*), and sharing local cultures of hiking and living in the western fjord-mountain landscape. This culture includes routines and norms for how to behave appropriately and safely. For example, respecting *nature* and all forms of life, collecting waste when hiking, and the principle of not leaving any traces. When including cultures of environmentally friendly behaviour, the teachers' praxis contributes to developing respect and awareness for natural environments, a central aspect of outdoor education (Leather, 2018).

The teachers used different methods to organise the children's play and growth throughout the fieldwork. These methods ranged from telling stories about local animals to inviting children to taste

snowflakes. In other cases, the children organised play on their own. Accordingly, the teachers' approaches represent a balanced amalgam of selecting places and inspiring children. As a result, the teachers and children arrived at a shared sense of what was acceptable to do.

The children played with little influence from the adults during a large portion of the fieldwork. During this time, the teachers expected the children to respect each other and play in acceptable ways. These expectations became apparent, for example, during the winter fieldwork when some of the children threw snow at each other, resulting in a corrective verbal response from a teacher. The teachers showed trust in the children as competent beings and intervened when they did not fulfil their expectations.

Selecting natural environments

The reason behind the teachers' decision to hike to the seashore is unknown. Hiking to nearby natural environments is an everyday practice in many Nordic kindergartens and families (Sandseter & Lysklett, 2017). Thus, hiking to the seashore represents a taken-for-granted way of acting by the teachers and the researcher. It is also an example of a local and place-based approach that Loynes (2018) points out is an important method for making experiences relevant for everyday life.

If we adapt Ingold's ideas to young children, the children shape their understanding of themselves and the environment through corresponding movements in a growing meshwork. Because environments and weather always influence humans' perceptions (Ingold, 2013), embodied relationships relate to particular places and seasons. For example, the ways the children played *At the Seashore* were possible because of the warm weather, contributing to a dramaturgy that made wading in cold water acceptable. The season made the leaves in the small forest dense and green, providing shelter for Dag, Fredrik, and the researcher in the situation above. Additionally, the root had its taste at this time of year. Thus, the teachers provided children with possibilities, as noted by others, to engage their senses and emotions in a specific time and place (Humberstone, 2011).

Leather (2018) points to opportunities for aesthetic experiences in embodied encounters with water. The trip provided the children with opportunities to have experiences considered educationally important and culturally relevant. More specifically, the children's opportunities to play with and experience different materials – such as fjord water, stones, seaweed, landing nets, magnifying glasses, the weather, forest, and plants – are framed by the teachers' choice of environment. The teachers may use the experiences to initiate dialogues to raise awareness and respect for the natural world (cf. Leather, 2018).

Children shape themselves and are shaped in a dynamic and ever-changing meshwork where ideas, problems, options, and solutions grow relationally (Ingold, 2007). From this perspective, our analyses reveal that materials, such as trees and water, do not possess inherent knowledge for the children to extract. Instead, children create knowledge and meaning in relationships while participating in dialogues and playing with various environmental features. Thus, *how* children interact with environmental features is essential for their growth.

When selecting specific environments or introducing materials for play, teachers organise children's possibilities for correspondence. Their selection results from a delicate balance between the educational aim, the weather conditions, and the children's capabilities and interests.

Environmental features may influence play

The lines at the seashore, such as the ebb and flow of the tide, influenced the play's dramaturgy and children's opportunities for growth. For example, one girl was surprised and upset when she discovered her wet shoes. One boy told the researcher that he had cold feet after wading in the chilly water. Both examples illustrate how the place gave life to and influenced the children's experiences. The girl's attention was drawn to the sea-level changes due to the tide when her shoes submerged. Additionally, the tide influenced her emotions by making her upset. The seashore is an example

of the teachers letting the place influence the dramaturgy. Additionally, it exemplifies how environments with different materials may stimulate imagination, fantasy, and the senses (Jørgensen, 2016).

Drawing on Ingold's (2013) concept of *correspondence,* we interpret children's play as a back-and-forth process influenced by environmental features. One example is when Dag and Fredrik tasted the root. At first, the root's presence made it possible for Fredrik to find it, invite us to taste it and dig it up, leaving a small hole in the ground. The root responded with a taste that triggered associations with 'candy.' Thus, the local place contributed to the play by affording the root and providing a taste. In other words, the children changed the environment by removing the root and were moved by the root's taste. Inspired by Ingold (2013) and Myrstad et al. (2021), we suggest that the children shape their understandings of their relation to the nearby forest and root through playful correspondence.

The environmental features on the seashore influenced and restrained play by offering opportunities for wading and investigating bubbles while not being well suited for other activities, such as bicycling. The hike provided children with opportunities to experience how they relate to new and known environmental features using their bodies (cf. Leather, 2018; Sanderud et al., 2020).

The various experiences derive from corresponding movements that are not isolated events but embedded in an environmental entity (cf. Humberstone, 2011), including the stones, water, smell, trees, and each other. Interpreting these in dialogue with the *meshwork* (Ingold, 2007), we argue that children are part of a meshwork in which different lines correspond and constitute a complex meshwork of relations. When the teachers facilitate the children's opportunities for growth by letting them play with surrounding relationships, the children weave themselves into a meshwork that includes themselves, the teachers, the root, the chill breeze, and the smell of salty water.

Inspiring wonder and exploration

The teachers also arranged situations that roused the children's wonder and kindled their curiosity, such as when one of them picked up a stone from the seabed and expressed her surprise. In other situations, the children received questions such as *What happens if you do this?* and *What can you do with this?* The teacher showed them varied *wonders* which had immediate appeal to the children. The effect was observable: the wonders initiated a chain of responses that modified lines and the meshwork that the children created. The responses relate to Jørgensen's (2016) point that wonders may inspire children's explorations of different materials. Variations in the teachers' involvement provided the children with varied environmental experiences (cf. Mawson, 2014).

Introducing children to specific environments is another way of facilitating wonder and curiosity. For example, the boys' wading experiences in the fjord may provoke an emotional *stimulation* of uncertainty and excitement that something interesting might happen, such as the bubbles. Drawing on Gurholt and Sanderud (2016), their actions triggered responses to questions such as: *What is the water concealing? What is seaweed? What happens to the things that the children pick up when they reach the surface*? The colour, texture, and reflections of the stones that the children picked up changed when they breached the surface. With everything the children do, there is an opportunity to explore something interesting, exciting, or unforeseen. In other words, they may encounter lines that they do not know what it is like to correspond with. The observation is connected with Leather (2018, p. 128), arguing that 'water has an inimitable facility to bring one's self into the present'. Our idea is that children learn to deal with the world by anticipating and responding to uncertainty.

Applying Ingold's (2000) understanding that environmental qualities are fundamental to movement and growth, the dwelling *At the Seashore* illustrates how places provide different and sometimes unforeseen opportunities for wonder and exploration that complement those available at the kindergarten playground.

Our reading of Johansson (2019) suggests that playing children may learn different meanings for the ideas of things, such as stones and water, through experiences in diverse contexts. Abstract

concepts, such as temperature and season, can also be explored. All of this happens as children play with materials. Simultaneously, they are finding that neither the textures of the material nor their ideas about them are fixed, but rather continually evolving as the children imbue them with meanings. When wading, children sense the ground they step *on* and the chill and powers of water they are wading *in* while developing awareness about themselves and the environment (Gurholt & Sanderud, 2016; Leather, 2018).

The teachers not only selected and introduced the children to environments; they also adjusted or modified the environment by providing the children with access to landing nets, magnifying glasses, and bubbles rising from the seabed. These things made it possible for them to explore and correspond in ways they could not have done otherwise.

Openness to the educational process

The oldest children participated in a *children's council* once a week. Their mandate was to propose and vote on what to do and where to go that day. The children's council illustrates how the teachers empowered the children and organised them to have ownership in the day's content and outcome. Suggesting and voting on alternatives made the children and teachers cooperate and become co-responsible for the day's content and outcome. At the same time, the children participated in a community and had to respect the majority's selection. Both are central democratic values. Researchers have noted the potential outdoor settings have for learning democratic values and children's participation (Aasen et al., 2009).

The teachers' open-ended, sensitive, and flexible didactics gave the children the time and space to act on their initiatives with care and support from the teachers. There is always a risk that something unpredictable might happen in children's correspondences with the environment because stones on the seabed may be slippery and because roots may taste awful and even be poisonous. The example illustrates the widely recognised complexity and unpredictability of facilitating outdoor educational situations (Loynes, 2018). The open and flexible didactic approach can also expose teachers to uncertainty because, as in any educational case, they encounter countless questions that need answers: *What do children experience? How can I inspire them? What risks are they exposed to?* Every other question arises from the fundamental question of what is in the child's best interest (van Manen, 2008).

Perceiving children as trustworthy

There were no fences or markings on the land or in the sea, except one side of the beach. Thus, no physical barriers prevented the children from roaming into areas where they might, for example, get lost, fall from a small cliff, or wade into deep water. However, the teachers seemed to be keeping an eye on the children. They trusted the children to have the competence to manage different forms of risks. For example, the children were not wearing lifejackets even though the water was deep a few metres away from where they played. The teachers also trusted the children to follow unspoken rules that they had learned during the previous hikes. Tovey (2010) mentions trust in children's competencies as a vital part of teachers conditioning of (risky) outdoor play. For Biesta (2020b), freedom to act according to one's interest and the possibility of affecting their surroundings is central to becoming autonomous subjects in society. The teachers in our example trusted the children by providing them with the freedom to decide what to do.

The teachers paid close attention to children engaging in activities that the teachers perceived as dangerous, or if someone was unfriendly or seen mistreating the natural environment. For example, when they were whittling sticks, checking local nesting boxes, and telling stories about snow and local birdlife, the teachers firmly controlled both the situation and every child. Having balanced involvement in the children's play in the natural places they visited is an expression of the teachers' professional understanding of when and how to intervene in children's play. Perceiving the

uniqueness in daily situations and adapting efforts to respond to what happens is central to teacher's professional expertise (van Manen, 2008). Inspired by Biesta (2020b), the teachers scaled the children's freedom to different situations.

The children received trust and freedom to generate a proper *dramaturgy* that included respecting each other, the setting, and other living beings. However, the dramaturgy among the children was not joyful at all times. Some children were frustrated and angry about unpleasant events occurring; for example, some children said they were too hot because of wearing too many clothes, and some fell and cried.

In general, the children followed the instructions and rules they have embodied through regular hikes. One consequence of the open facilitation is that the children had, and were expected, to master different situations and take the initiative to approach the teachers if they needed assistance. In this way, the children were framed to make it possible for them to perceive, understand, and act according to earlier experience, skills, and the current social context. The children had the freedom to play within the expectations from the teachers, the institution, and the embodied rules.

The belief that independent action is essential to children's growth was made explicit by the pedagogical leader, who said that children grow when trusted and held accountable for their actions.

Another consequence of how the play was organised is that the children found and used local resources to deal with the issues that occurred or actively asked for assistance. Using local resources and coping with emerging issues is possible when teachers recognise that children have the competencies to play independently and when teachers trust children's relational self-formation with other children and environmental features.

When the teachers located themselves in accessible positions along the shore, the teachers kept an eye on the children and the area. This organisation of social control provided the children with opportunities to explore and deal with situations and environmental features on their own. However, surveillance regarding safety and risk may negatively influence children's play (Løndal & Greve, 2015).

Didactic sensitivity

In this section, we discuss the concept of *didactic sensitivity*. This concept relates to the teachers' responsive, thoughtful, and careful approach towards children and places. It is a form of intuitive praxis that includes values and thoughtful habits that evolve through practice. Teachers' intuitions refer to the ability to make decisions fluently and adaptable in complex situations without necessarily being able to explain what one is doing (Claxton, 2000). In this case, the teacher's outdoor praxis represents a form of tacit knowledge that, as van Manen (2008) points out, is difficult to articulate.

Didactic sensitivity encompasses teacher sensitivity to the unique and daily unfolding relationships between children and the natural environment that inspire and nurture children's play, exploration, and growth. Inspired by van Manen (2008), it includes teachers acting according to their professional judgment to create place-based experiences they regard to be in the best interest of the children's growth. 'Special normative, ethical, or affective considerations' (van Manen, 2008, p. 6) are guiding the practice of teaching and differ from the principles of effectiveness, as the rhetoric of learnification embeds. As a result, teachers do not have to organise children's play according to universal *learning programmes*. Instead, they may employ didactics sensitive and flexible to children's needs and educational possibilities in local child-environment relationships.

van Manen (2008) suggests that experienced teachers intuitively know what goes on among the children, understand their experiences, sense the pedagogical significance of different situations, and how to enhance educational situations. The *didactic sensitivity* of the teachers' outdoor educational praxis differs from an academic discourse that emphasises learning and owner control over children's autonomy, teachers' professional judgment, and the open-ended problem-solving that is important in a multi-faceted world.

Teachers' professional judgment and initiatives for using local resources to facilitate children's growth are at the core of *didactic sensitivity*. The approach demands reflexive, independent, and competent teachers who continually develop and revise their understanding of what may inspire different children. Our perspective requires teachers to be sensitive to the 'rhythm of the playing children, pay attention to it, and improvise together with the children' (Løndal & Greve, 2015, p. 477). Teachers need to use their professional judgment and practical know-how to create conditions for growth in situ, which corresponds with van Manen's (2008) idea of experienced teachers performing intuitively and on an improvisational basis by which they *instantly* know what to do. It also reflects Biesta's (2016) premise that learning is *uncontrollable*. However, it requires trust in teachers' pedagogical competence from owners, policymakers, and parents.

Using implicit clues to be sensitive to children's interests, understandings, and feelings (van Manen, 2008) makes teachers see variations and possibilities in children. Thus, it may be possible to inspire children to explore their surroundings independently or with support.

Children's self-governed play and exploration are at the centre of *didactic sensitivity*. Self-organised outdoor play appears as an essential part of children's lives when there are grand expectations of academic learning. By employing *didactic sensitivity*, teachers can respond to children's interests and co-create meaningful situations, which Hussain (2018) perceives as central to meaningful learning.

At the same time, van Manen (2008) argues that teachers must be sensitive to when to enter different situations and to what extent. Løndal and Greve (2015) find that many teachers balance observing, initiating, and participating in children's play. In our study, the teachers did also incorporate sensitive attention to the natural environment and individual children when conditioning children's outdoor play. Besides, the approach provides children with various possibilities to engage in relationships and treat environmental features as respected 'playmates' (Steinsholt, 2010).

The approach requires knowledge of local weather, different environments, and the children's needs in order to plan and facilitate play and exploration that pivot on children's interests, environmental properties, and educational ambitions. Thus, it is difficult to predict and *secure* the outcome of playful meaning-making.

The approach's openness makes it difficult to predict how the children will play and what they will learn. The approach challenges the narrow conceptions of education and knowledge found in neoliberal educational climates. By implementing *didactic sensitivity* to children and environments rather than universal *programmes*, teachers who act professionally may satisfy Moss and Urban's (2020) call for greater uncertainty and exploration in early childhood pedagogy. At the same time, they may be 'fostering the well-rounded and independent free thinkers that can respond to future challenges' (Pimlott-Wilson & Coates, 2019, p. 276).

Concluding comments

Our ethnographic investigation demonstrated an outdoor education culture that emphasises *didactic sensitivity* towards children and local places. By elucidating a didactic that is often tacit, we provide the means to discuss how to facilitate children's growth through self-guided, improvisational, and vigorous play that children may find meaningful. We argue that teachers' professional responsiveness towards children and places serve to condition children's self-formation and self-governed play in natural environments. Thus, the approach contributes to a better understanding and recognition of teachers' professional know-how. Thus, *didactic sensitivity* is in line with the open and sensitive didactic practice at the heart of outdoor practice in Nordic early childhood education.

By developing didactic thinking and practices sensitive to local contexts and possibilities rather than using predesigned learning programmes, teachers are better equipped to address the cultural diversity, multiplicity, and complexity in kindergartens. As children's play and meaning evolve in local relationships, facilitating this requires teachers' didactic competence, local knowledge, and

opportunities for daily environmental interaction. The approach thus cannot be standardised. Instead, it demands a high level of professional wisdom, know-how and context sensitivity in the teacher.

The openness of the approach connects to an open-ended and locally based form of education that challenges the control, predictability, and universality found in predefined learning programmes. Thus, we argue for a broad perspective on education open to children's initiatives and learning to handle themselves within a complex meshwork of socio-material relationships.

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Mutual experiences: understanding children's play in nature through sensory ethnography

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ABSTRACT

This paper introduces the concept 'mutual experiences' to highlight how a researcher's sensory experiences may contribute to producing knowledge concerning children's bodily play in a natural environment. The article also demonstrates how photo-interviews can give a researcher virtual access to places and events where s/he cannot be present. The inspiration for the concept of 'mutual experiences' emerged from three sources: (1) The premise that human experiences and knowledge are embodied and develop interactively from environments, (2) the literature on sensory ethnography and (3) ethnographically inspired studies of children playing in a natural environment. The concept is illustrated through an analysis of empirical examples. It is argued that applying this concept could contribute to a more open, enriched and intersubjective understanding of children's interactive play in a natural environment.

KEYWORDS

Children; nature; play; mutual experiences; sensory ethnography

Introduction

This paper introduces the concept 'mutual experiences' to highlight how a researcher's sensory experiences during fieldwork may contribute to producing knowledge on children's embodied sensory experiences during play in a natural environment. Further, the paper suggests that a combination of photo interviews and participant observations may create 'mutual experiences' that make it possible for a researcher to gain access to children's places, events and experiences that might otherwise be inaccessible.

The inspiration for the concept of 'mutual experiences' has three sources: (1) the theoretical premise that human experiences are embodied and develop interactively through movement in the environment; 2) sensory ethnography and 3) two periods of fieldwork, conducted in 2010 and 2018.

The theoretical premise of this article is that human experiences are embodied in bodily interactions within environments; through these interactions, we understand both our environment and ourselves (Merleau-Ponty, 2012). Further, our identity, experiences and meaning emerge from our ways of acting and co-acting in environments—what Ingold (2000) has termed inhabiting. Consequently, all humans, including researchers, learn from their social and embodied engagement with their surroundings. A corollary is that conclusions based solely on visual observation and listening to the stories of others may be incomplete, as all active senses play a role in the production of knowledge (Pink, 2009).

The second source of inspiration for the concept of mutual experiences is sensory ethnography. Ethnography is a way of understanding cultures and individuals. Sensory ethnography focuses on the sensory aspects of ethnographical research, using a variety of methods (Pink, 2009). Some studies have described and analysed the researcher's sensory experiences in the outdoors using an

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auto-ethnographical approach (c.f., Humberstone, 2013; Nicol, 2013). Other studies have focused on the sensory experiences of others in various physical environments (Ingold, 2000). Okley (1994), Humberstone (2011) and Pink (2009) have explored how their own embodied sensory experiences might enrich their understanding of the experiences of other adults; Woodyer (2008) has used the same approach to explore children's experiences. None of these studies focussed on children's play in a natural environment. Although MacQuarrie, Nugent, and Warden (2015, p. 6) did look at sensory stimuli experienced by kindergartners in the outdoors using semi-participant observation and focus groups, their fieldwork did not include a focus on their own embodied sensory experiences. However, in group interviews they did introduce their panoramic photographs and video recordings, including 'sensory details such as smoke from the fire blowing into the researcher's and child's eyes' to prompt children to relive and recall events.

The third source of inspiration was my experiences in conducting two ethnographically inspired studies among young children playing in a natural environment.[1] I conducted one of these studies at a family summer camp in 2010 (Sanderud, 2011) and analysed in a subsequent paper (Gurholt & Sanderud, 2016). The second involved fieldwork conducted during the winter of 2018 at a Norwegian pre-school with a focus on outdoor education. This fieldwork will be described later in this article.

Drawing on these three concepts, this paper shows how incorporating a researcher's own sensory experiences can enrich our understanding of children's play in a natural environment. A review of the literature did not identify any prior studies of children's play in a natural environment that combined photo interviews, analysis of field observations, and an analysis of the researcher's embodied sensory experiences[2] derived from active involvement in children's outdoor play.

The following section of the current paper offers a summary of its underlying ontological and methodological framework. This is followed by a discussion of the potential benefits of sensory ethnography in outdoor education research, and it cites empirical examples from the revisited fieldwork. In both fieldwork studies, the researcher applied photo-interview and participant observation techniques to explore how participating children experienced nature. Additionally, the researcher described and analysed the embodied sensory experiences that he himself had during the 2018 fieldwork.

This paper cites empirical examples to illustrate how 'mutual experiences' might be a fruitful tool for gaining insight into children's experiences of nature and play in natural environments. However, a full discussion of the analysed data and findings from this fieldwork is beyond the scope of this paper.

Theoretical framework

Embodied experiences

The ontology of this paper builds on the premise that human experiences are embodied (Merleau-Ponty, 2012) and develop through interaction with their environment (Ingold, 2000). According to Merleau-Ponty (2012), we are our bodies and it is the body that opens the world to us. Tuan (1977) expands on Merleau-Ponty's insight, asserting that children relate themselves bodily to their environment. Consequently, young children may perceive their physical, social and cultural environment as interwoven with their body. To give a fictitious example to illustrate Merleau-Ponty's point: If a girl picks up a rose to smell it, in addition to registering the chemical substance which generates the smell, she might relate the smell to how the stem feels, the colour and shape of the rose, and the context in which her smelling occurs. She might relate differently to a rose that she picked herself than she would to the same type of rose presented to her as a gift on a special occasion. In other words, Tuan and Merleau-Ponty would argue that although the girl apprehends the rose in time and place through sensory perception, her perception of it is mediated by her prior

embodied sensory experiences and cultural history. In sum, the experience of a rose is not uniform; each of us experiences it differently, based on our individual biography and the particular context. Consequently, I would suggest, a researcher might find it difficult to gain access to a girl's experience of a rose.

Experiences develop through interaction with their environment

During play in a natural environment, the perception of that environment as a whole generates instant feedback to the entire body through movement (Ingold, 2000). Like the experience of the girl with the rose, the inseparability of the senses and the sensed creates experiences from places in a way that might be said to intertwine humans with their environment: both shape and are shaped by their interaction (Ingold, 2000). Elaborating on the intertwining of children with their environment, Ingold (2000) describes humans as 'dwellers', suggesting that children's thoughts, movements, identity and culture emerge from their interaction and relationship with their environment. Their experiences in and of the world, including with nature, are crucial to their being and the production of meaningful relationships with their environment. According to Ingold, the process of meaning-making occurs as the child moves through the landscape; the child learns where to go and what to do as she or he becomes a wayfarer in the outdoors.

If we examine a natural playground with a surface dominated by grass, we might notice worn patches. They indicate areas where children have played extensively, and may be connected by paths. Both the worn patches and the paths connecting them are physical evidence of moving children. As Ingold (2011) suggests, when we view this type of setting as a whole, the worn patches are 'knots' tied by paths; a physical manifestation of children's playful movement. Elaborating on his concept that experiences through movement in the environment shape the individual, he posits that lines created by children trace their experience. Thus, a bird's-eye's view of the children's playground might reveal a distinctive pattern of paths connecting patches similar to a 'meshwork'. Ingold's concepts 'Lines' and 'meshwork' illustrate the intertwining of children with the world: 'Every strand is a way of life, and every knot a place. Indeed, the mesh is something like a net in its original sense of an open-work fabric of interlaced or knotted cords' (Ingold, 2011, p. 151). If we assume that children learn and grow through 'attentive engagement' with materials (Ingold, 2000, p. 354), 'lines' and 'meshwork' become useful metaphors for describing the unpredictable movement and dynamic of their play. According to Ingold, these metaphors can be applied well beyond physical manifestations in the environment: They can elucidate all physical, social and cultural traces of both humans and animals, internally and externally. From this perspective, fieldwork on children's play should identify and map the mesh of social relations and physical environments of varying significance to them.

Based on the assumption that children's growth is created through their interaction with their environment, this paper shows how a research methodology that includes sharing experiences with children can be a powerful tool for understanding how play in a natural environment can contribute to their growth.

A methodology for research with children

This paper has two premises. One is that children think and act as competent inhabitants of the world (Christensen, 2004; Clark & Moss, 2011; Punch, 2002; Sommer, Samuelsson, & Hundeide, 2010). The other is that research on children is fundamentally the same as research on adults (Hill, 2005; Punch, 2002; Skivenes & Strandbu, 2006), but requires some methodical adjustments to create space for their voices. Thus, children should be included as active participants and experts in their practices during the research process (Clark & Moss, 2011); co-producers of knowledge rather than 'containers' of data (Sommer et al., 2010). Nevertheless, the researcher must be cognisant that

children may differ from adults in their ability to articulate their intentions (Sommer et al., 2010), as well as in their unequal power relation with the researcher (Christensen, 2004).

To successfully communicate with children, Christensen (2004, p. 166) suggests that the researcher should strive to enter their 'cultures of communication'—that is, the form each individual child typically uses (Dahl, 2014). Some children express themselves best verbally; others communicate more fluently in other ways. This implies that a competent researcher must situate the communication (Sommer et al., 2010) through the application of special skills in interviewing and a variety of communication forms, while also manifesting trustworthiness, stability and positivity (Skivenes & Strandbu, 2006) and winning acceptance as a playmate.

Certainly, the researcher's status as an adult influences how children collaborate with her or him. However, their relationship is not static; it is constantly negotiated throughout the fieldwork (Christensen, 2004). Further, as Dahl (2014, p. 615) suggests, the researcher should try to level the power balance by assuming the role of a 'critical friend, rather than a controlling expert'. Establishing a positive relationship is not necessarily difficult: Children often greet and relate to researchers more easily than adult informants do (Christensen, 2004).

The following section will discuss photo interviewing and the use of senses in participant observation, two complementary ethnographic approaches that can be used to explore the embodied play of children in nature as they themselves perceive and experience it.

Sensory ethnography

One perspective on ethnography is that it seeks to 'offer versions of ethnographers' experiences of reality that are as loyal as possible to the context, the embodied, sensory and affective experiences, and the negotiations and intersubjectivities through which the knowledge was produced' (Pink, 2013, p. 35). Sensory ethnography is a broad methodology for understanding an informant's sensory experiences. It is a way of doing ethnography that takes into account the experience, perception, knowing and practice of both participant and researcher. Thus, it refers to a broad spectrum of qualitative approaches. In short, the aim of sensory ethnography is to understand and describe what it 'feels' like for informants to dwell in certain places in certain situations (Pink, 2009).

Using the researcher's senses in participant observation

As research on the informant's experiences is inevitably a collaborative process between informant and researcher (Pink, 2012), participant observation is one of many approaches that may be suitable. Usually, this approach values visual and verbal interaction over other sensory experiences. Building on Pink's (2009) work and the theoretical framework outlined in this paper, visual observation should not enjoy this privileged position; all of the researcher's active senses contribute to understanding and the researcher's knowledge is 'generated in the course of lived experience' (Ingold, 2011, p. 145). The argument here is that merely observing children's activities and surroundings is insufficient (Woodyer, 2008). To gain access to and truly understand children's embodied and sensory experiences, the researcher must play *with* them (van Manen, 1990). Based on this premise, van Manen (1990) argues that the researcher's personal experiences are the logical starting point for describing lived experiences in a particular situation, as they are immediately available in a way that no one else's experiences are. This implies that a researcher who wishes to explore an informant's sensuous experiences should 'seek to participate in the emplaced activities of others through his or her own embodied engagements' (Pink, 2009, p. 79). Of course, it is impossible for a researcher to step completely out of her or his own life-world and enter an informant's: all humans are inseparable from their social and physical surroundings (Ingold, 2000). Even so, good researchers seem to be more or less realistically attuned to children's meaning-making (Sommer et al., 2010). The researcher does need to maintain an attentive, hermeneutic distance from the field (van Manen, 1990). In using the term hermeneutic distance, van Manen is

insisting that the researcher must avoid becoming so immersed in the field that s/he is incapable of formulating analytic reflections on her/his observations.

Sensory ethnography shares some characteristics with auto-ethnography, an approach that allows the researcher to use personal experiences to produce academic knowledge (Pink, 2009). Thus, the researcher attempts to trod in the informants' path to develop experience-based empathic understandings of what they might be experiencing and knowing. Achieving these understandings requires viewing the children as co-producers of knowledge and the researcher as a co-learner who has an embodied dialectical relationship with them. Sensory ethnographers do not seek to discern or unveil an objective account of reality. Rather, they offer versions of what has occurred incorporating the ethnographer's own experiences (Pink, 2013).

Using children's photographs as the starting point for an interview: photo-interviewing

Children's play in nature may be understood as being constituted by a diversity of playful events and relationships. Although these situations could provide valuable insights, an adult researcher might find it difficult to gain access to them. Introducing photographs can be a solution, offering the researcher a 'first-hand' experience of these situations and an opening for discussing them during a subsequent interview.

Photo-interviewing is a technique in which the informant uses a camera to capture aspects of his or her own life-world that can be used in subsequent interviews and analysis. This technique is based on the assumption that photographs are more than mechanical prints. While photographing, a photographer makes choices, whether instinctively or deliberately (Pink, 2013). The photo-interview is one of many forms of informant-led photography, a methodology in which children are asked to choose what to photograph in their surroundings. Informant-led photography has been used in outdoor research (Einarsdottir, 2005; Tunstall, Tapsell, & House, 2004). Merewether and Fleet (2013) have combined different approaches, including informant-led photography, to explore the perspectives of three- to four-year-old children on outdoor spaces. However, the researchers responsible for these studies do not emphasise intersubjective sensory practices during fieldwork; sensory ethnographers do. Einarsdottir (2005) has noted that interest in the use of photography in research with children is increasing. She goes on to list some of the method's advantages: First, it can increase the children's power during the research process, as they may take pictures of whatever they wish. Second, the focus is on their perspective, rather than on categories pre-determined by the researcher. Third, the method may have a particular advantage in research with young children, as the researcher does not need to rely exclusively on verbal language. Further, Tunstall et al. (2004) report that they found using this approach provided detailed insight into what the children noticed and found interesting, or didn't. Finally, it has been reported that children enjoy taking photographs (Clark & Moss, 2011); giving them responsibility for a camera may help to build their trust in the researcher (Einarsdottir, 2005). On the other hand, researchers have raised some concerns about the method. Tunstall et al. (2004) experienced a variation between the researcher's observations and the frequency of certain motifs in the photographs. For example, 'playing in the river' seemed to be a more significant theme in the activities the researchers observed than its frequency in the photographs would have suggested. Furthermore, the children did not photograph social dangers and wildlife, even though the researchers found them to be important concerns for the children.

The freedom children enjoy in informant-led photography distinguishes it from more standardised and structured approaches (Noland, 2006; Pink, 2013). The purpose of a photo-interview is to get a personal account of the lived experience related to the motif in the picture. Thus, according to van Manen (1990), a conversation that employs concrete questions becomes a vehicle for elucidating the meaning of an experience. The introduction of a photo camera can alter the traditional roles of the researcher and informant. It gives the child the leading role in setting the interview agenda (Noland, 2006), rather than the researcher (Woodyer, 2008), reducing the power imbalance between the researcher and the child.

Revisiting fieldwork experiences

My experiences during fieldwork conducted in 2010 inspired me to adopt a new methodological perspective. This fieldwork was conducted at a family summer camp in an ancient mountain-pasture landscape. The summer camp was arranged by The Norwegian Touring Association. At this camp, families were offered a choice of activities, such as climbing, fishing, and a glacier hike. Sixty children and 48 adults participated. A majority of the children were between the ages of 6 and 9. The parents of 47 children agreed to participate in the study.

The camp generated a rich and varied set of data through participant observation and informant-led photography. I provided two cameras, recruiting child photographers by asking informants if they would like to take pictures on a particular day. Six boys and four girls volunteered. These children photographed without supervision during their free play and/or organized activities. Together, they produced a total of 598 pictures, an average of 60 per informant. Through these pictures, I learned about situations I did not witness, such as two girls on a covert trip to the candy store, the oldest children at the camp alone on an overnight camping trip, and two boys building a small raft. Thus, the camera provided valuable information about different types of play, social relations, unforeseen events and the environments from the child's perspective on which I had no noticeable influence, and to which I did have direct access (Sanderud, 2011). These results were consonant with the proposition of Waite, Rogers, and Evans (2013) that child research initiatives controlled by the informants themselves can offer access to events not subject to adult observation.

I was able to conduct photo interviews with three informants immediately after they had finished photographing. The photographs provided a shared reference for dialogue during semi-structured interviews and helped focus the interview on themes that the informants themselves considered important. This approach was similar to what Harper (2002) and Pink (2013) have suggested. The first three were the only ones I was able to interview because all of the photographers became involved in another camp activity. Subsequently, the pictures taken by the others proved difficult to analyse. This supports the proposition that in research of this type, the meaning of pictures may only be revealed through a negotiation between the photographer and the researcher (Pink, 2013).

One example of the freedom provided by the camera was that 5 out of 10 informants took pictures of the scenery or components of the landscape, subject matter I had neither encouraged nor anticipated. This suggests that the scenery was of substantial importance to them. Those photographs might have appeared casual, but at least some of them seemed to have been the fruit of considerable thought. For example, a key informant described his image of a scene dominated by a large glacial stream during a photo-interview with great enthusiasm. He described the water as 'greyish… really… almost blue… Something between blue and grey makes it really beautiful' (Gurholt & Sanderud, 2016, p. 322).

The 2018 fieldwork took place at a pre-school in late January, which is the darkest and the coldest time of the Norwegian year. The natural environment and the pre-school's playground were covered with ice and snow. The sample consisted of 19 children (4–6 years old) in a pre-school with an outdoor education focus. All of the children and their parents consented to their participation in the study. These children played outdoors in a natural environment every day throughout the year. Their only shelter was a simple one-room wooden 'hut' with no insulation. In addition to using photo-interviews and participant observation, I devoted considerable attention to my own embodied sensory experiences while playing with the children.

Two empirical examples are presented in the next section. The first is from the 2010 fieldwork. This example was selected to illustrate how drawing on both a photo-interview and my own previous embodied sensory experiences may illuminate a child's thoughts and sensory experiences in a situation where I was absent. The second example is from the 2018 fieldwork and illustrates how my experiences whilst running with the children in rough and slippery terrain provided a deep and embodied understanding of their expertise in moving through the landscape.

Sensing crowberries

During the 2010 camp, the staff arranged a rock-climbing activity. While on it, a boy took 128 pictures; slightly more than half (68) were characterised as not directly related to rock-climbing. One picture, which he described as 'my hand, picking berries', shows his forefinger and thumb gently poised to detach a little berry from its stem (Sanderud, 2011). Here is an excerpt from the photo-interview centring on the photo:

> 'It's my hands that are picking… blueberries or… something…' The researcher, discerning from the photograph that they were crowberries, commented, 'They're a little smaller, black and taste a bit different'. The boy agreed: 'Yes, in fact, they do'.
>
> (Gurholt & Sanderud, 2016 p, p. 322).

The camera captures what the child saw: fingers touching a berry in the heath. The interview revealed whose hand the picture showed, what he was doing while photographing, and his reflection provoked by viewing the picture. The interview also revealed that the child did not know what kind of berries he had tasted (Gurholt & Sanderud, 2016). I was able to detect this mistake and draw his attention to the particular qualities of crowberries, due to my prior knowledge of their appearance and taste. In this instance, the child's thoughts and meanings, as well as the context of tasting berries could not be 'read' directly from the picture. Rather, they were generated in the course of the interview. This is consistent with the assertion of Einarsdottir (2005) as well as Merewether and Fleet (2013) that interviews are valuable and even essential in eliciting the meaning of photographs. As many philosophers have argued, language is central to developing intersubjective understanding (Crossley, 1996).

One interpretation of the picture would be that in that particular moment the child sensed the smooth, silky surface of the crowberry and the stinging of the heath's needles with his fingers as he gently picked the berry and brought it to his mouth. When he chewed the berry, his mouth was suddenly filled with a taste he did not anticipate; on realising this, he may have experienced a sense of fear, excitement or pleasurable surprise (Gurholt & Sanderud, 2016)). These possible responses indicate the situation's broad array of potential sensory experiences. However, an experience like this must also be understood in terms of its corporeal and environmental relationships (Pink, 2009). Woodyer (2008, p. 355) goes further, emphasising the 'need to actually *do* practice in order to understand it'. In this particular case, I was already familiar with eating both crowberries and wild blueberries. This does not mean that my sensory experiences were the same as the child's; all of us sense and understand our present in relation to our past experiences (Ingold, 2000). Rather, my similar experiences opened a door to a conversation and a deeper understanding of what crowberries taste like and how the child may have experienced the new sensation. In addition, I did not anticipate either the theme or the context in advance of the fieldwork. My understanding of the child's sensual experiences was also based on my overall observations of, and knowledge about, what was going on in the camp and at the climbing activity specifically, as well as my sensory experiences with the materiality of the place.

In this case, I was well aware of the taste, appearance, substance and structure of the crowberry, which I had acquired from earlier experiences, including different embodied and contextual experiences of picking and eating wild berries while lying in a heath.

In Ingold's (2011) view, social and physical relations are always constituted and maintained during an embodied 'weaving' of the lines linking different personalities, cultures and elements in the environment. In this case, those lines included peers, camp rules, trees, actions, and activities. Drawing on Ingold (2011), one might say that when children taste unknown berries, they create and move along a line of life; in fact, everybody at the camp was continually creating and maintaining an individual lifeline. As one boy tasted berries, a girl gazed at the scenery and another boy climbed a small tree. All of these activities formed part of a meshwork. In this case, one might say that the children created knots of crowberries, scenery, trees, and themselves, as

well as lines connecting these diverse experiences. Consequently, the picture also displays how the child created a knot between himself and the crowberries, and a meshwork of himself in the pasture landscape.

As the example above illustrates, photo interviews can give researchers access to different and unforeseen aspects of the field through children's photographs, providing insight into its multilinearity. Inspired by Ingold (2011), one might say that the photographs became an invitation for the researcher to travel along both planned and unplanned lines. Further, they prompted me to address a broader spectrum of events in the complex meshwork of different persons, activities and relationships that constitute children's play-world in a natural environment. Thus, the camera becomes an important component in exploring children's lines while at the same time strengthening their control and influence over the data production. Photographs taken by playing children can enable the researcher to 'see' at least some of what the photographing child saw and discuss relevant situations in the child's play during the subsequent interview. This illustrates how photographs may reveal lines children travel along that a researcher has not foreseen or would not encounter during observation. Put another way, photo cameras can allow a researcher to cross children's lines with her or his own and thus create new knots of knowledge in the unfolding meshwork.

In addition to providing access to unforeseen or otherwise inaccessible lines, informant-led photography can offer an interactive option for the children participating in the study. Both Einarsdottir (2005, p. 538) and the revisited fieldwork discussed here reported that most children 'enjoyed using the camera'. An essential component of successful fieldwork with children is that the researcher creates 'comfortable and fun situations by encouraging peer interactions and/or by engaging children in interactive activities' (Green, 2015, p. 226). Both Green's (2015) observations and the experiences with photo cameras cited above are evidence that informant-led photography can be an effective way of including children in the research process. It must nevertheless be kept in mind that truly authentic participation is the fruit of effective research design coupled with a strong relationship between the researcher and the children, rather than the tools employed (Waller & Bitou, 2011). This underlines the crucial importance of child-friendly research design to high-quality research (Dahl, 2014).

The autonomy and enthusiasm generated by the research design in the revisited fieldwork might suggest that the children had space to photograph without any noticeable adult influence. However, it is likely that some of the children regarded their research-camera as a new 'plaything', a conclusion reached in prior research by Einarsdottir (2005, p. 538) and Sanderud (2011). Thus, it is important to recognize how cameras can influence play situations. It is also likely that the camera influences informants' experience of the environment, as their attention is reflexively directed toward their environment and practices. Further, photo cameras may prove useful in creating a positive relationship between researcher and child, and consequently a comfortable atmosphere that encourages the child to communicate.

To summarise: The photo presented the situation of picking crowberries, which caught my interest as I found it surprising to find such a photo in the boy's portfolio portraying an outdoor camp. The subsequent interview revealed new dimensions linked to the taste and visual appearance of the berries and the child's exploration of nature in general. It also inspired the child to reflect on the taste, structure and colour of the berries. My own previous experiences with the taste of crowberries and as well as other berries provided me with a clearer understanding of what it might have been like for the child to discover a new and unexpected taste.

Running in rough and icy terrain

The next example is derived from the 2018 fieldwork, which took place in the natural playground of a Norwegian pre-school during winter. The ground was rough, frozen and covered with ice, snow, roots and rocks.

> A girl I call Berit tells me to 'come along!' She runs downhill across rocky, icy terrain while she holds my hand. She moves quickly, apparently in control. I try to keep up with her. It is difficult, as I feel off balance and afraid of falling. I don't understand how I manage to stay on my feet. Suddenly, my feet 'disappear' and I fall. The girl turns her head toward me and starts laughing. I get up, and she resumes running at the same pace. I am unable to keep up without falling and have to slow her down by holding onto her. She stops at the fireplace, laughing and smiling. (excerpt from field notes; my translation)

In this example, my embodied sensory experiences contrast with Berit's movement and control of her body. By registering and reflecting on my feelings related to being out of control, losing my balance, and fear of falling, I not only display my shortcomings, I also reveal Berit's mastery of the icy surroundings and the challenges it presents. Berit shows great body control and balance, and no fear that she will fall. Thus, the example provides insight into the relationship between Berit and the terrain. She seems to 'read' all of its challenges easily, adapting to them without a thought. One morning, Berit's mother accompanied her to the pre-school, evincing a mother's caution that underlines Berit's expertise:

> Delivering Berit to the natural playground, the mother stopped just outside. Smiling, she said, "I don't dare walk any closer—the ground is so slippery" as Berit left her and ran confidently across the icy terrain to the other children and the staff gathered in the forest. (excerpt from field notes; my translation)

Berit's engagement with the terrain would have been difficult for me to understand fully without the benefit of my experience in a similar situation. One might say that I was 'embodying the data' that were similar to the experience expressed by the child, though at the same different. I felt that it was challenging to move across the icy terrain. However, the children I spoke with declared that they were not afraid of falling while running through it.

Often, the multi-sensorality and complexity of fieldwork may be extensively illuminated by attending to several of the informant's and researcher's senses. When Berit ran, her balance, contact with the terrain and control of her body became part of her play, in and with the landscape. Thus, she displays an intimate, taken-for-granted relationship with the icy ground.

A researcher's own sensuous and embodied experiences during fieldwork can contribute to better contextualising, as well as a deeper understanding of what children's play in a natural environment involves. Drawing on my embodied sensory experiences as well as written field notes enabled me to recall feelings that the situation evoked at the time.

Mutual experiences

This final section of this paper discusses 'mutual experiences' as a methodological framework. At the core of this concept is the assumption that human understanding emerges through a process of weaving bodily experience together with the social and physical environment (Ingold, 2000, 2011). Consequently, the researcher can draw on her or his own senses and sensory ethnography to better understand the life-world of others (Pink, 2009). Pink's insight (2009) provides the basis for viewing intersubjective sensory experiences, linking researcher and informant, as a central methodological 'knot' for understanding the meshwork of children's play-world in a natural environment.

'Mutual experiences' are intersubjective in the sense that in research involving children, the researcher can develop a dialectical and empathic relationship with their experiences and 'their' situations (van Manen, 1990). This may provide greater access to the children's perspectives, thoughts and ideas. 'Mutual experiences' weave the informant's and the researcher's sensory experiences into a single meshwork. Successfully knitting their experiences together can generate a richer set of sensory understandings. When discrepancies occur, the researcher should not reject a child's statements; rather, the differences should lead the researcher to develop a deeper, embodied understanding of the child's voice. In other words, the term mutual is not to be understood as 'equal to' or 'the same as'. Rather, it is comparable to terms such as 'similar',

'understandable' and 'intersubjective'. The intersubjectivity of 'mutual experiences' is an empathic 'working agreement' that knits the child's and the researcher's lines together in a meshwork and becomes a methodological guide.

Sharing a common, embodied understanding of an event that includes the researcher's sensory experiences makes it possible for her or him to generate a phenomenological understanding of a child's perspectives and sensory experiences. In addition to vision, other senses—touch, smell, taste and kinaesthetic feeling—all heavily influence children's thoughts and ideas. Therefore, 'mutual experiences' can provide a deeper understanding of the meaning a given situation has for them than an analysis derived from visual observation alone. Although the researcher's experiences can never be the same as a child's, they might converge into an intersubjective understanding of an event. As Sommer et al. (2010) observe, adults can be fairly well attuned to children's meaning-making. 'Mutual experiences' may thus assist the researcher in developing an even better understanding.

'Mutual experiences' is a particularly fruitful approach for understanding how children are interwoven with their natural environment. Children experience their environment with their senses (Tuan, 1977) and their capacity to express themselves verbally in nuanced ways is sometimes limited, particularly when they are quite young (Clark & Moss, 2011). By providing a shared reference and a common field of understanding, mutual experiences can become a powerful tool in photo interviewing, as well as in analysing observed events.

Concluding comments

This paper has focused on the potential of 'mutual experiences' to enhance understandings of children's embodied experiences in a natural environment. First, it argues that a researcher's sensory experiences while actively observing children's play can enable her or him to develop greater insight into children's experiences, perspectives, actions and utterances. This understanding may be richer than what is available through an exclusive reliance on visual observation. Further, this paper suggests that photo interviews can contribute to a better sense of the complexity of children's lived meshwork of outdoor play, revealing lines of inquiry not anticipated by, or otherwise accessible to, a researcher.

Notes

1. Both fieldwork sessions received ethical approval from the board of the Norwegian Centre for Research Data. Children and their families were informed about the aims of the research. They were assured that participation was voluntary and that participant privacy and anonymity would be respected.
2. A search in Western Norway University of Applied Sciences Campus Sogndal's databases in EBSCOhost, ScienceDirect (SD), and in The Journal of Adventure Education and Outdoor Learning (JAEOL) were conducted on 23 January 2017 at 1:00pm. The keywords 'children [and] sensory [and] ethnography' provided 16 (EBSCOhost), 9 (SD), and 5 (JAEOL) articles between 2007 and 2017. The search in the ScienceDirect database used the keywords 'children [and] 'sensory ethnography'. All of the articles were reviewed to identify studies of children in nature applying a sensory ethnographical and/or an informant-led photography approach.

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Appendix I

Research approval from the Norwegian Centre Research Data.

Jostein Rønning Sanderud

6856 SOGNDAL

Vår dato: 13.12.2017 Vår ref: 57398 / 3 / STM Deres dato: Deres ref:

Tilrådning fra NSD Personvernombudet for forskning § 7-27

Personvernombudet for forskning viser til meldeskjema mottatt 24.11.2017 for prosjektet:

57398	*Aktive vinterbarn?*
Behandlingsansvarlig	*Høgskulen på Vestlandet, ved institusjonens øverste leder*
Daglig ansvarlig	*Jostein Rønning Sanderud*

Vurdering

Etter gjennomgang av opplysningene i meldeskjemaet og øvrig dokumentasjon finner vi at prosjektet er unntatt konsesjonsplikt og at personopplysningene som blir samlet inn i dette prosjektet er regulert av § 7-27 i personopplysningsforskriften. På den neste siden er vår vurdering av prosjektopplegget slik det er meldt til oss. Du kan nå gå i gang med å behandle personopplysninger.

Vilkår for vår anbefaling

Vår anbefaling forutsetter at du gjennomfører prosjektet i tråd med:

- opplysningene gitt i meldeskjemaet og øvrig dokumentasjon
- vår prosjektvurdering, se side 2
- eventuell korrespondanse med oss

Meld fra hvis du gjør vesentlige endringer i prosjektet

Dersom prosjektet endrer seg, kan det være nødvendig å sende inn endringsmelding. På våre nettsider finner du svar på hvilke endringer du må melde, samt endringsskjema.

Opplysninger om prosjektet blir lagt ut på våre nettsider og i Meldingsarkivet

Vi har lagt ut opplysninger om prosjektet på nettsidene våre. Alle våre institusjoner har også tilgang til egne prosjekter i Meldingsarkivet.

Vi tar kontakt om status for behandling av personopplysninger ved prosjektslutt

Ved prosjektslutt 31.12.2022 vil vi ta kontakt for å avklare status for behandlingen av personopplysninger.

Se våre nettsider eller ta kontakt dersom du har spørsmål. Vi ønsker lykke til med prosjektet!

Dokumentet er elektronisk produsert og godkjent ved NSDs rutiner for elektronisk godkjenning.

Vennlig hilsen

Marianne Høgetveit Myhren

Siri Tenden Myklebust

Kontaktperson: Siri Tenden Myklebust tlf: 55 58 22 68 / Siri.Myklebust@nsd.no
Vedlegg: Prosjektvurdering

Personvernombudet for forskning

Prosjektvurdering - Kommentar

Prosjektnr: 57398

FORMÅL
Målet med dette prosjektet er å utvikle ny kunnskap som har høy samfunnsrelevans og vitenskapelig kvalitet ved å undersøke og forstå hva naturkontakt og naturopplevelser om vinteren betyr for barn (4-5år) i en friluftsbarnehage.

INFORMASJON OG SAMTYKKE
Dere har opplyst i meldeskjema at utvalget vil motta skriftlig informasjon om prosjektet, og skal samtykke skriftlig til å delta. Vår vurdering er at informasjonsskrivet til utvalget er godt utformet, men vi gjør oppmerksom på at vi har skiftet navn til NSD – Norsk senter for forskningsdata. Videre har vi følgende kommentar:

Fordi HVL er behandlingsansvarlig for studien, og ikke Idrettshøgskolen, og videre fordi det ikke er nødvendig å innhente samtykke til oppbevaring av anonymiserte data, anbefaler vi at følgende formulering tas ut av skrivene: «Norges Idrettshøgskole har bestemt at anonymiserte data skal oppbevaras i minst 5 år etter at studiet er avslutta for å sikre at ein kan gå tilbake til datamaterialet dersom det kommer reaksjonar på forskinga etter at prosjektet er avslutta.»

FORSKNING I BARNEHAGE
Mens barnehage er en obligatorisk arena for barn, foreldrene og ansatte, skal deltakelse i forskning være frivillig. Forespørselen må derfor alltid rettes på en slik måte at de forespurte ikke opplever press om å delta, gjerne ved å understreke at det ikke vil påvirke forholdet til barnehagen hvorvidt de ønsker å være med i studien eller ikke.

Ved videoobservasjon eller (personidentifiserbare) lydopptak av fellesareal i barnehage må dere sørge for et alternativt opplegg for barn som ikke skal delta i forskningen. Dette fordi barn skal kunne delta i sine vanlige aktiviteter uten at det registreres personopplysninger om dem til forskning. Barn som ikke deltar i prosjektet må være i et annet rom.

Foresatte må informeres om det alternative opplegget på forhånd, slik at deltakelse i forskningen oppleves reelt frivillig.

BARN I FORSKNING
Selv om barnets foresatte samtykker til barnets deltakelse i prosjektet, må også barnet gi sin aksept til å delta. Vi anbefaler at barnet mottar tilpasset informasjon om hva deltakelse i prosjektet innebærer. Dere må sørge for at barnet forstår at deltakelse er frivillig, og at det kan trekke seg om det ønsker det.

SENSITIVE OPPLYSNINGER

Det fremgår av meldeskjema at dere vil behandle sensitive opplysninger om etnisk bakgrunn eller politisk/filosofisk/religiøs oppfatning.

DATASIKKERHET

Personvernombudet forutsetter at dere behandler alle data i tråd med Høgskulen på Vestlandet sine retningslinjer for datahåndtering og informasjonssikkerhet.

PROSJEKTSLUTT OG ANONYMISERING

Prosjektslutt er oppgitt til 31.12.2022. Det fremgår av meldeskjema og informasjonsskriv at dere vil anonymisere datamaterialet ved prosjektslutt.

Anonymisering innebærer vanligvis å:

- slette direkte identifiserbare opplysninger som navn, fødselsnummer, koblingsnøkkel
- slette eller omskrive/gruppere indirekte identifiserbare opplysninger som bosted/arbeidssted, alder, kjønn
- slette lydopptak
- slette eller sladde bilde- og videoopptak

For en utdypende beskrivelse av anonymisering av personopplysninger, se Datatilsynets veileder: https://www.datatilsynet.no/globalassets/global/regelverk-skjema/veiledere/anonymisering-veileder-041115.pdf

Fra: Siri Tenden Myklebust [mailto:Siri.Myklebust@nsd.no]
Sendt: fredag 9. mars 2018 09:18
Til: Jostein Rønning Sanderud <Jostein.Ronning.Sanderud@hvl.no>
Emne: SV: 57398 - Aktive vinterbarn?

Hei,

Dette er ikke noe som krever at du sender inn endringsmelding til oss. Hvis du i også skal filme barna anbefaler vi at du gir tilleggsinformasjon om dette. Det er ikke nødvendig å innhente nye samtykker – det er tilstrekkelig at du informerer foresatte om videopptakene i f.eks. en enkel epost.

Var dette svar på spørsmålene dine?

Med vennlig hilsen,
Siri Tenden Myklebust
seniorrådgiver | Senior Adviser
Seksjon for personverntjenester | Data Protection Services
T: (+47) 55 58 22 68

NSD – Norsk senter for forskningsdata AS | NSD – Norwegian Centre for Research Data
Harald Hårfagres gate 29, NO-5007 Bergen
T: (+47) 55 58 21 17
postmottak@nsd.no www.nsd.no

Fra: Jostein Rønning Sanderud [mailto:Jostein.Ronning.Sanderud@hvl.no]
Sendt: 7. mars 2018 10:15
Til: Siri Tenden Myklebust
Emne: 57398 - Aktive vinterbarn?

Hei,

Jeg har gjennomført feltperiode 1 i «Aktive vinterbarn», men har måttet utsette periode 2 til uke 21/22. I informasjonsskrivene har jeg informert om følgende:

> **Tidsrom:**
> Observasjonane vil strekkje seg over 10 dagar i januar / februar (veke 5 og 6) og 10 dagar i mars 2018 (veke 11 og 12). Merk at vekene kan endrast noko etter nærare avtale med barnehagen.

Spørsmål 1) vurderer dere at det er nødvendig å sende ut et nytt informasjonsskriv til informanter og endringsmelding til dere, eller gjør formuleringen «Merk at vekene kan endrast noko etter nærare avtale med barnehagen» at det kan unngås.

Spørsmål 2) i periode 1 erfarte jeg at jeg gjerne skulle ha benyttet et videokamera for å filme enkelte relevante situasjoner. Informantene er informert om at de kan bli fotografert. Bør de informeres og samtykke på nytt om at de kan bli filmet i periode 2, eller kan en forstå stillbilder og bevegelige bilder som så nært beslektet at det ikke er nødvendig.

Vedlagt finner du tilbakemeldingen fra dere og informasjonsskrivet til informantene.

Vennleg helsing
Jostein Rønning Sanderud

Høgskulelektor / Institutt for idrett, kosthald og naturfag / Fakultet for lærarutdanning, kultur og idrett / Høgskulen på Vestlandet, Campus Sogndal
Tlf: +4757676325 Besøksadresse: Røyrgata 6, Sogndal

Postboks 133 6851 Sogndal
www.hvl.no | twitter.com/hvl_no | facebook.com/hvl.no

Appendix II

Letter of formal notice on the project and consent form for parents and teachers, including Letter written in an easy language for parents to read for their children.

Høgskulen
på Vestlandet

8. januar 2018

*Kjære foreldre/føresatte på avdeling *** i *** barnehage*

Førespurnad om deltaking i forskingsprosjektet «Aktive vinterbarn?»

Bakgrunn og føremål

Barns muligheter for kroppslig-sanselig nærkontakt med natur i det daglige oppfattes ofte som en betydningsfull forutsetning for aktive og gode, helsefremmende oppvekstmiljøer. Flere forskere uttrykker uro for at stadig flere vokser opp på steder med vanskelig tilgang på natur og at dette kan føre til at flere barn kommer til å leke innendørs og la seg fange av fysisk inaktivitet foran skjermer, med de uheldige konsekvenser det kan få for barnas livskvalitet og utvikling.

Formålet med dette prosjektet er å undersøke hva naturlek om vinteren kan bety for barn i fire- til femårsalderen i barnehagen.

Kva inneber deltaking i studien?

Ditt barn går i ein barnehage som er plukka ut for observasjon av kroppsleg leik. Barna sin kroppslege leik vil bli observert ved hjelp av skriftlege notatar, fotografiar og intervju. Det vil bli observert i barna sine vanlege aktivitetar i barnehagen, og observasjonane vil såleis ikkje påverke barnet sin kvardag.

Tidsrom:

Observasjonane vil strekkje seg over 10 dagar i januar / februar (veke 5 og 6) og 10 dagar i mars 2018 (veke 11 og 12). Merk at vekene kan endrast noko etter nærare avtale med barnehagen.

Kva skjer med informasjonen?

Alle personopplysningar vil bli behandla konfidensielt. Alle data som vert samla inn, både papirbasert og elektronisk, vert handsama i samsvar med krav til personvern og IKT-tryggleik nedfelt i personopplysningslova. Høgskulen på Vestlandet er databehandlingsansvarleg for studien.

Informasjonen som vert registrert om dykkar barn skal berre nyttast i henhald til føremålet med studien. Alle notat og bilete vert avidentifisert. Det vil seie at dei vert handsama utan at namn eller andre personlege opplysningar kan koplast til dykkar barn. Identifiserbare opplysningar som knyter dykkar barn til opplysningane vert erstatta av ein kode. Lista som koplar kode og namn vert oppbevart på ein sikker måte åtskilt frå forskingsdata, og berre prosjektleiaren har tilgang til namnelista.

Kva skjer når data er samla inn?

Resultata og data frå prosjektet vert publisert i form av engelskspråklege artiklar i internasjonal faglitteratur og norske publikasjonar i form av populærvitskaplege artiklar og faglege føredrag. Me understrekar at opplysningar og bilde som kjem fram i publikasjonar og føredrag ikkje kan førast tilbake til einskilde personar. Bileta vil bli anonymisert slik at barnets ansikt ikkje vert identifiserbart.

Høgskulen på Vestlandet
Postboks 7030
5020 Bergen

Telefon: 55 58 58 00
E-post: post@hvl.no
www.hvl.no

Høgskulen
på Vestlandet

Prosjektet skal vere avslutta i løpet av 2022. Etter dette blir innsamla materiale om barnet anonymisert. Anonymiserte data kan fortsatt brukast i publikasjonar og føredrag.

Frivillig deltaking

Det er frivillig å ta del i studien. Ein kan trekke seg frå prosjektet når som helst og utan å oppgi grunn, og utan at det får negative konsekvensar. Dersom de aksepterer at dykkar barn tek del i studien, underteiknar du samtykkeerklæringa på neste side. Vi ynskjer at de leverer utfylt skjema tilbake til barnehagen innan førstkomande fredag 12/1. Om du seier ja til å vera med no, kan du seinare trekkje tilbake samtykket ditt utan nokon konsekvensar for deg/dykk eller dykkar barn. Dersom du seinare ønskjer å trekke samtykket for dykkar barn eller har spørsmål til studien, ta gjerne kontakt.

Det er viktig for oss at dykkar barn er informert om studien og kjenner til at det kan trekke seg. Vedlagt finn de eit skriv med informasjon som er tilpassa barn. Me ynskjer at de les det for barnet og spør om barnet vil vere med.

Studien er godkjent av Norsk senter for forskningsdata (NSD).

Om du har spørsmål til studien, kan du ta kontakt med:

Jostein Rønning Sanderud, Høgskulen på Vestlandet, Campus Sogndal
Epost: jostein.ronning.sanderud@hvl.no / Tlf 57676325

Vegard Fusche Moe, Høgskulen på Vestlandet Campus Sogndal
Epost: vegard.fusche.moe@hvl.no / Telefon: 57676037

Kirsti P Gurholt, Norges Idrettshøgskole
Epost: k.p.gurholt@nih.no / Telefon: 23262497

Høgskulen
på Vestlandet

Til deg som går i ***

I to uker i januar tror jeg vi skal få det ekstra fint sammen i barnehagen. Da skal nemlig jeg være med dere og jeg er en ekte forsker!

Dersom du ikke vet hva en forsker er, så skal jeg fortelle deg det. Det er en som finner ut av ting vi lurer på. Nå lurer jeg på hvordan det er å være barn i barnehagen om vinteren - så derfor blir jeg med dere i to uker!

Mens jeg er på besøk hos dere kommer jeg til å være med å leke sammen med dere og ta bilder av at dere leker. Når jeg kommer tilbake til kontoret så skal jeg se på bildene og tenke tilbake på alt vi gjorde, så kanskje jeg finner ut av noe spennende!

Mens du leker kommer jeg til å fotografere og skrive ned masse ting. Når jeg leser igjennom det jeg har skrevet, så har jeg skrevet så masse at jeg ikke vet hvem det handler om – så da kan ingen finne ut hva akkurat du gjorde.

Hvis du synes at det er greit at jeg blir med så må du skrive navnet ditt på streken under. Hvis du ikke kan skrive, kan du få hjelp av en voksen.

Hilsen Forsker-Jostein

JA! Jeg vil være med!

_____

Høgskulen på Vestlandet
Postboks 7030
5020 Bergen

Telefon: 55 58 58 00
E-post: post@hvl.no
www.hvl.no

Høgskulen
på Vestlandet

Samtykke til deltaking i studien

Eg har lese informasjonsskrivet og aksepterer at mitt barn tek del i studien

---

(Signert av foreldre til prosjektdeltakar, dato)

Barnet sitt førenamn og etternamn: (Skriv tydeleg, helst med blokkbokstavar)

.....

Foreldre/føresette sitt førenamn og etternamn: (Skriv tydeleg, helst med blokkbokstavar)

.....

Høgskulen på Vestlandet
Postboks 7030
5020 Bergen

Telefon: 55 58 58 00
E-post: post@hvl.no
www.hvl.no

Høgskulen
på Vestlandet

8. januar 2018

*Kjære personale på avdeling *** i *** barnehage*

Førespurnad om deltaking i forskingsprosjektet «Aktive vinterbarn?»

Bakgrunn og føremål

Barns muligheter for kroppslig-sanselig nærkontakt med natur i det daglige oppfattes ofte som en betydningsfull forutsetning for aktive og gode, helsefremmende oppvekstmiljøer. Flere forskere uttrykker uro for at stadig flere vokser opp på steder med vanskelig tilgang på natur og at dette kan føre til at flere barn kommer til å leke innendørs og la seg fange av fysisk inaktivitet foran skjermer, med de uheldige konsekvenser det kan få for barnas livskvalitet og utvikling.

Formålet med dette prosjektet er å undersøke hva naturlek om vinteren kan bety for barn i fire-femårsalderen i barnehagen.

Kva inneber deltaking i studien?

Du jobbar i ein barnehage som er plukka ut for observasjon av barna sin kroppsleg leik. Barna sin kroppslege leik vil bli observert ved hjelp av skriftlege notatar, fotografiar og intervju. Det vil bli observert i barna sine vanlege aktivitetar i barnehagen, og observasjonane vil såleis ikkje påverke barnet sin kvardag.

Da personalet i stor grad leggjar rammer for barna sin lek, ønsker vi å observere korleis personalet legg til rette for barn sin kroppslege leik for å forstå samanhengen barna leikar i. Det kan også bli aktuelt å intervjue noen frå personalet.

Tidsrom:

Observasjonane vil strekkje seg over 10 dagar i januar / februar (veke 5 og 6) og 10 dagar i mars 2018 (veke 11 og 12). Merk at vekene kan endrast noko etter nærare avtale med barnehagen.

Kva skjer med informasjonen?

Alle personopplysningar vil bli behandla konfidensielt. Alle data som vert samla inn, både papirbasert og elektronisk, vert handsama i samsvar med krav til personvern og IKT-tryggleik nedfelt i personopplysningslova. Høgskulen på Vestlandet er databehandlingsansvarleg for studien.

Informasjonen som vert registrert om deg skal berre nyttast i henhald til føremålet med studien. Alle notat og bilete vert avidentifisert. Det vil seie at dei vert handsama utan at namn eller andre personlege opplysningar kan koplast til deg. Identifiserbare opplysningar som knyter deg til opplysningane vert erstatta av ein kode. Lista som koplar kode og namn vert oppbevart på ein sikker måte åtskilt frå forskingsdata, og berre prosjektleiaren har tilgang til namnelista.

Kva skjer når data er samla inn?

Høgskulen på Vestlandet
Postboks 7030
5020 Bergen

Telefon: 55 58 58 00
E-post: post@hvl.no
www.hvl.no

Høgskulen på Vestlandet

Resultata og data frå prosjektet vert publisert i form av engelskspråklege artiklar i internasjonal faglitteratur og norske publikasjonar i form av populærvitskaplege artiklar og faglege føredrag. Me understrekar at opplysningar og bilder som kjem fram i publikasjonar og føredrag ikkje kan førast tilbake til einskilde personar. Bileta vil bli anonymisert slik at ansikt ikkje vert identifiserbart.

Prosjektet skal vere avslutta i løpet av 2022. Etter dette blir innsamla materiale anonymisert. Anonymiserte data kan fortsatt brukast i publikasjonar og føredrag.

Frivillig deltakelse

Det er frivillig å ta del i studien. Ein kan trekke seg frå prosjektet når som helst og utan å oppgi grunn, og utan at det får negative konsekvensar. Dersom de aksepterer at de tek del i studien, underteiknar du samtykkeerklæringa på neste side. Vi ynskjer at de leverer utfylt skjema tilbake til barnehagen innan førstkomande fredag 12/1. Om du seier ja til å vera med no, kan du seinare trekkje tilbake samtykket ditt utan nokon konsekvensar for deg. Dersom du seinare ønskjer å trekke samtykket eller har spørsmål til studien, ta gjerne kontakt.

Studien er godkjent av Norsk senter for forskningsdata (NSD).

Om du har spørsmål til studien, kan du ta kontakt med:

Jostein Rønning Sanderud, Høgskulen på Vestlandet, Campus Sogndal
Epost: jostein.ronning.sanderud@hvl.no / Tlf 57676325

Vegard Fusche Moe, Høgskulen på Vestlandet Campus Sogndal
Epost: vegard.fusche.moe@hvl.no / Telefon: 57676037

Kirsti P Gurholt, Norges Idrettshøgskole
Epost: k.p.gurholt@nih.no / Telefon: 23262497

Høgskulen
på Vestlandet

Samtykke til deltaking i studien

Eg har lese informasjonsskrivet og aksepterer deltaking i studien

---

(Signert av prosjektdeltakar, dato)

Ditt førenamn og etternamn: (Skriv tydeleg, helst med blokkbokstavar)

……..

Høgskulen på Vestlandet
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Høgskulen
på Vestlandet

24.april 2018

*Kjære foreldre/føresette på avdeling *** i *** barnehage*

Endringar i forskingsprosjektet «Aktive vinterbarn?»

Takk for at dykkar born deltek i studien «Aktive vinterbarn?». Med dette skrivet ynskjer vi å informere deg om nokre små endringar i prosjektet.

Tidsrom

Den neste perioden av feltarbeid har blitt flyttet til slutten av mai (uke 21 og 22).

Metode

I periode 1 erfarte vi at det hadde vore ein fordel å nytte videokamera for å dokumentere hendingar og situasjonar på ein meir heilskapleg og samtidig detaljert måte. Dette gjør at forskaren kjem til å nytte eit videokamera for å filme enkelthendingar i den neste perioden.

Om du har spørsmål til studien, kan du ta kontakt med:

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Appendix III

Excerpt from fieldnotes.

Dag 4, vinter. Temperaturen er +1C. Klarvær. Det har fryst på i løpet av natten. I dag er det is på bakken. Jeg synes det er veldig glatt.

Hege, Frida og Berit sitter ved siden av hverandre på toppen av bakken bak garderoben. Holder hverandre i hendene, med beina pekende ned bakken. De har store smil. Vrir på rumpen så de flytter seg litt fremover helt til de kommer over kanten og glir ned. Mens de glir ned holder de hender mens de sitter. Overkroppen litt på skrått bakover. Forsøker å holde hverandre i hendene. Noen glir fortere enn andre og de mister taket i hverandre. De hyler høyt og smiler mens de glir nedover. Andra barn krabber opp en annen skråning som er nærmere porten. Dag bruker hender og føtter for å komme opp. Glir ned igjen. Bjørn sklir baklengs ned. Barna ser varme ut – jeg er kjølig på hender og føtter av å sitte i ro og observerer.

Appendix IV

Interview guide.

- Fysiske forhold
    - Viktige steder og hva på stedet er viktig i barnehagen
        - Fine, gøyale steder.
        - Steder du ikke liker deg?
        - Hva er det med de nevnte stedene?
        - Er det noen steder som det er vanskelig å leke?
        - Hva er forskjellen på å leke på barnehagens område og å gå på tur?
    - Klimatiske:
        - Hva er forskjellen på å være her om sommeren og om vinteren?
        - Hvilken årstid liker du best? – hvorfor/hvorfor ikke?
        - Forrige gang jeg var på besøk så brukte du votter og lue, det gjør du ikke nå. Hva er forskjellen?
- Sosialt:
    - Er det noen som bestemmer hva dere skal leke? (av de voksne, av barna).
    - Er det noe du ikke får lov til å gjøre?
    - Hvem leker du mest med?
    - Hva gjør du sammen med vennene dine?
    - Er det noen som du ikke får leke med?
    - Er det noen av de voksne du liker godt?
- Pedagogisk
    - Hva er fint/dumt med å gå i denne barnehagen?
    - Hvordan er det å være så mye ute?
    - Hvordan er det å være inne?
    - Hva gjør de voksne når dere leker?
    - Er det noen ting eller steder du ikke får gå til?
    - Hvilke regler har dere her i barnehagen?
    - Hva gjør dere når dere går på tur?
        - Kan du fortelle om en gang dere gikk på tur?
        - Hva er fint med å være på tur?

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