

Connecting to nature in pre-school days: A study of place experiences in a low-social economic area related to children's development

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Abstract

Outdoor environments and nature could positively support pre-school children living in low-social economic urban environments. By valuing the role of lived experiences, this research explores how outdoor places and nature could support and counteract the widespread inequities that affect these children. While the literature has evidence for the role of nature in children's development and positive senses of place, it has been argued for the need for studies in different economic and cultural backgrounds, which is addressed by this thesis. The study is a participative, child-centered, empirical, qualitative study that investigates the role of distinct environments in children's agency to use, play and learn and concurrently develop senses of place. Experiences of a group of pre-school children's outdoor environments during pre-school days are explored while assuming the dynamic interrelationship of the physical, social, and organizational characteristics of everyday life related to children's development. The departure is taken in the socioecological framework for human development by Bronfenbrenner, Stokols; Sense of place by Relph and Place-relations literature. This research explores how children attending a pre-school located in a low-social economic area in the south of Sweden create meaning and experience places in their everyday lives, including their schoolyard, their local neighborhood, and occasional excursions to the Landscape Laboratory in SLU Alnarp. This inquiry draws on ethnographic methods: participant observation with fieldnotes, photographs, and workshops in which children would draw favorite places, including informal conversations and a walking interview with children and informal conversations with the school's pedagogues. Following children outdoors on many occasions during autumn 2020 revealed aspects of the environment connected to their use of places. The inductive, qualitative analysis suggested the importance of access to suitable outdoor environments containing nature, giving children the opportunity for free play and adult support in children's development of place meaning. The results explore the underpinned value of outdoor environments and nature whilst relating to the value of the cultivation of positive place relationships in childhood. The result highlighted how natural environments in the schoolyard related to children's agency during active play, social interactions, and self-learning activities. Regular visits to a site with a natural environment with a larger abundance of affordances facilitating usage and play seemed to make an imprint on their play in their schoolyard, with a larger and more creative usage of place. Regular walks in their local neighborhood also supported children's agency to create positive place relations to their local environments. In the results section, a "narrative map" illustrates places in terms of children's meaning-making experiences. A thematic result explored how outdoor environments became places related to children's learning experiences. The discussion suggests implications for environmental planning, pedagogical practices, and organizational efforts to counteract the negative environmental impacts on pre-school children living in low-social economical areas and could be applied in pre-school children in all contexts, supporting their development and learning.

Foreword

This work is my final project for the Master program *Outdoor Environments for Health and Well-being* in SLU Alnarp. This program specializes in Environmental psychology, focusing on the role of environments in promoting health and well-being. How behavior and experience are affected by the environment is the topic of Environmental Psychology's interdisciplinary field.

For me, a collaboration between research and society is important. I believe that Environmental psychology has a lot to offer to public health. I came in contact with the field while doing a bachelor's degree broadly based on electives in humanities, where philosophical and psychological studies lead me to question and think about society, perception, nature, and life. Having experiences with flexible and interdisciplinary studies supported me with concrete, more diverse experiences. They enabled me to be in touch with different realities and disciplines in a complex and continuously changing world. I became interested in our relationship with nature, body-mind being the same, not different and independent institutions. Nevertheless, my previous studies inspired me to look for something else, to combine my values developed under my formation with a practical field that could impact real life. I gladly believe that I found this connection in this master's program.

For most of my undergraduate life, I have worked as a teacher parallelly with my academic activities. I worked in regular education and private schools, teaching mainly languages but also other subjects. I have had students of various ages and learning goals, from preschoolers to professional adults. I had pupils living in very different cultural and social backgrounds in Brazil and Sweden. Teaching is a gratifying task. I had a fascinating experience in a social project in one of the largest suburbs of São Paulo, where I taught French to teenagers. Even with crowded classes of 30-40 students, many of them managed to learn the language and cultural facts after one year together. What strikes me the most in this and other experiences is that pupils can develop in the same way or sometimes even more than students living in better conditions - when provided with good learning opportunities! I firmly believe that everyone deserves equal opportunities.

I had another unique opportunity not teaching but mentoring a child with an immigrant background living in a low-social economic neighborhood in Sweden. For one year, I took the child on excursions around different places in town, parks, natural spaces as the forest and the beach, play spaces, the cinema, the opera. The aim was to introduce the child to new realities, which would broaden the children's perspectives.

A fascinating fact that drives me today is that outdoor environments can become good learning opportunities, which could be used as a tool for the children who need the most support in our societies. Studies have shown that children who live in the lowest social conditions are the ones that receive the most benefits from their everyday outdoor environments! Research about children's outdoor environments can clarify how environments can be designed and used for the best results.

Finally, I would like to offer a vast thanks to my supervisor Fredrika Mårtensson and my assistant-supervisor Anna Litsmark, for the very constructive, patient, and inspiring support for this study, for making the connection between the school and me possible, and for always being

available, firmly putting me forward. I really appreciated the detailed feedback and inspiring literature recommendations, which made this work much more prosperous and fun to do!

I want to offer special thanks to the pre-school involved that allowed this study to happen. I appreciated very much the possibility to do the fieldwork and to follow you on excursions. Thank you specifically for your interviews and all of the information you gave me through the fieldwork, and for your friendly and open welcome.

I want to offer special thanks to my study group for being available, sharing your experiences, supporting and constructive discussions we had together during these strange online times –thanks to Caroline Hansson and Diona Adriana Los!

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I would finally like to thank my partner, my family and friends for their 24/7 patience, offering support for this thesis, even while mostly having very little clue of what I was talking about when I contacted you about my macaronic thoughts.

Amanda Guimarães Gabriel

Hörby, 06/03/2021

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1 Introduction

1.1 Background

Children are exposed to many different experiences that will affect their lives in the present and the future, both positively and negatively. Children's learning and development of senses of place is the result of a complex system that is dynamically interconnected. Efforts to give better opportunities for children living in lower-social conditions could benefit from the many meaningful contexts for children, as the role of outdoor environments and nature in their everyday lives. There is no shortage of claims about the role of outdoor places with good quality for children's learning (Fjørtoft and Sageie, 2000, Söderström et al., 2013, Wells et al., 2018, Woolley and Lowe, 2013). Everyday outdoor environments can support use and experiences, which will turn these places into essential elements of their identities (Chawla, 1992, Chawla, 1985, Seamon, 2013).

The Convention on the Rights of the Child has recently been adopted as a law in Sweden (Regeringskansliet, 2020), representing many years of recognition of the importance of good opportunities for all children. In the age of disparities in urban environments, children in low-social economic contexts face many negative stressors that impact their development and learning. Compared with more advantaged children, they are exposed to stressors, such as family issues, violence, instability, and chaotic neighborhoods (Evans and English, 2002). As a result of these stressors, they have an elevated risk of emotional and psychological difficulties (Braubach and Fairburn, 2010, Evans et al., 2001, Evans and English, 2002, Pearce et al., 2010), under-achievement in neurocognitive performance (Hackman and Farah, 2009, Van Den Bosch et al., 2018) and specifically executive functions (Noble et al., 2005, Wyver, 2017), and language development (Kohen et al., 2002, Noble et al., 2005).

Contact with nature has been prevalent for children in the Nordic countries living in more traditional neighborhoods (Mårtensson and Nordström, 2017, Wells et al., 2018). However, proper outdoor environments are often limited among low-income and ethnic minority youth, contributing to the health disparities (Mitchell et al., 2018, Wells et al., 2018). Access to good outdoor environments and nature could support children living in lower-social conditions, by counteracting the many stressors that can negatively impact their development and learning (Evans and English, 2002, Mitchell et al., 2018) and their development of senses of place (Chawla, 1992). Increasing opportunities for all the different populations to have experiences in proper natural environments can be a strategic way to achieve social sustainability in communities (Mitchell et al., 2018).

Public health programs that seem to have the most success are based on the understanding of the health impacts in the people's involved lived experiences (Glanz et al., 2008). Knowledge about children's use and experiences of everyday outdoor places can be the starting point to such work at the local level (O'Brien and Christensen, 2003), especially since children from more impoverished families are more reliant on their qualities in their immediate surroundings (Harju, 2008). Because children's understanding of environments and places is very different from adults' understanding, environments created for children are often mismatched to children's needs (Woolley and Lowe, 2013). A better understanding of the particular role of natural places for children

under these conditions is also important for educational practices (Malone, 2016) and giving these children the possibility to outdoor play (Wyver, 2017).

To study the role of outdoor environments in pre-school children's learning and development of senses of place in a low social-economic urban environment, I worked with a pre-school in an urban environment in the South of Sweden with a qualitative approach drawing from ethnographic methods. This group of pre-school children had many experiences outdoors in their schoolyard, local walking excursions around their neighborhood, and regular visits to the Landscape Laboratory at SLU Alnarp, a natural area in Sweden with various outdoor landscapes that is the object of research (Nielsen, 2011). This study analyzes how everyday outdoor environments and nature become meaningful environments for these children through Relph's place-meaning elements (Relph, 1976), focusing on outdoor environments concerning children's development of sense of place and learning. The knowledge analyzed relates to the content and design of children's outdoor environments and the educational practices at the particular pre-school that impact their agency and possibilities to play and learn outdoors.

How can outdoor environments offer learning opportunities? A study investigating children's learning when families relocated to greener neighborhoods found that the improvement of children's cognitive function related to the amount of nearby nature (Wells, 2000). Children that play in natural environments have more effective motor skills and balance than those given built equipment designed for play (Fjørtoft, 2001, Fjørtoft, 2004, Grahn et al., 1997). The time children spent in natural environments is directly connected to the development of children's cognitive function (Wells et al., 2018), with natural environments having the capacity to restore their attention (Kaplan and Kaplan, 1989). Studies have shown that children have a recurring preference for outdoor environments and nature elements if they get to choose themselves where they spend their time (Chawla, 2007, Hart and Moore, 1973, Luchs, 2017, Titman, 1994).

There is evidence for connections to nature during early childhood influencing pro-environmental behaviors during adult life (Broom, 2017, Chawla, 2007, Ewert et al., 2005, Ives et al., 2017, Tanner, 1980, Årlemalm-Hagser and Sandberg, 2017). Ewert (2005) and Tanner (1980) found that a permanent relationship with nature in early childhood years seems to constitute one of the most critical factors in adult environmental commitment. Birdsall (2015), investigating 5- to 6-year-old children's experiences in their school garden, found that children developed sophisticated understandings of the interdependent relationship between all fauna and flora. Another example, the Project Green Reach of the Brooklyn Botanical Garden (Morgan et al., 2009), found that children developed deep learning about the natural environments while gathering an emotional affinity to nature through meaningful life experiences with the project. Sandell and Öhman (2010), investigating the role of natural environments in environmental education, discovered that children naturally develop respectful ways to interact with nature when they have opportunities to have encounters with nature.

Combining the everyday environment with educational practices has some tradition in Europe, and schools with outdoor profiles with access to natural environments are usual in Sweden (Klaar and Öhman, 2014). One example is Stadstudier with the "street as a classroom," a form of outdoor education and research methods developed in the UK in the 1970s. The concept, that arrived in Sweden in the 1980s, aimed to combine places and education by anchoring teaching and pedagogy to the pupils' realities (Broms and Göransson, 2012, Hansson, 1989). The pedagogy

entailed that children learning about and engaging in the local environment would become more active citizens. Under the 2000s, the project has inspired many different interventions, whereas children and young people got the opportunity to be a part of community planning (Broms and Göransson, 2012).

The concepts of nature and childhood have been debated and reflected by many authors and scholars – some regarding the constructs as more cultural (Halldén, 2009, Ochs and Izquierdo, 2009, Taylor, 2011) than others. The journalist Richard Louv (2008), with the bestseller "*The Last Child in the woods*," argues that, because children in the modern urban ages have few opportunities in nature, they experience "*Nature deficit disorder*," - that is, the wide range of negative developmental and behavioral issues prominent in our time. On the other hand, many authors point out that the constructions of nature and childhood are cultural and not biological. Malone (2015) criticizes the discourse proposed by Louv for Nature, which is created as a general concept that is narrow and romanticized, not enough described or defined.

Historically, nature's meanings have always been utilitarian for culture (Schama, 1995). Schama argues that landscape is always culture before it is nature (Schama, 1995). Because the understanding of places entails meaning-making that is culturally affected, children are never merely in nature; they are always in nature through the concepts of nature they have socially received from the world around them within a cultural environment. Investigations of how nature comes to matter for children in different neighborhoods could help us better understand what potential these environments hold. Studies about outdoor play and learning for different ethnic communities, cultural backgrounds, and social-economic situations are rare (Waller et al., 2017). Chawla (2020) has argued that, because there is an association between environmental awareness and childhood connection with nature, research should investigate children in different cultures, neighborhoods as well as suburbs.

This study aims to contribute to the topic of how the different spheres of everyday outdoor environments can support children living in low-social economic neighborhoods through the study of how they develop senses of place. The assumption is that learning and the development of a child is the outcome of the children's lived experiences in their physical, social, and organizational environments. This is important knowledge for education and the planning of just and sustainable societies.

2 Research objectives

2.1 Problem statement

Outdoors environments and nature can support the use and learning of children living in low socio-economic areas, which might counteract the widespread negative environmental impacts that these children face. This entails the design of proper outdoor environments containing nature and the understanding of how these environments can support the pedagogical practices in children's education and their development of senses of place. This implies investigating children's meaning-making of outdoors environments and the development of sense of place and learning, with a focus on the role of nature.

Documentation of children's perception of place and nature in everyday life could elucidate new creative ways to approach education and planning by improving our ability to support children's agency to use, play and learn in their everyday environments while tackling important environmental and social issues in society.

2.2 Aim

This thesis aims to investigate how children growing up in a low-social economic urban environment understand, use and experience different outdoor places in their everyday life, with a focus on the role of natural elements for their learning and development of sense of place. The dynamic interrelationship between everyday life's physical, social and organizational characteristics that affect children's development is the backdrop to the study.

2.3 Research questions

- How do children, living in a low-social economic urban environment, use and create place meanings of everyday outdoor spaces, with particular focus on the role of nature?
- What role do positive outdoor experiences have for their learning and development of senses of place?
- How do characteristics of the environments - physical, social and organizational - support children's use and experiences of the outdoors?

2.4 Glossary

Pre-school children: this study focuses on children between 3-5 years old attending a pre-school.

Low-social economic areas: a sociological and economic measure that describes areas with high social exclusion levels, with individuals and groups with low household economies, low levels of education, and low work experience levels.

Learning: the acquisition of new experiences, understandings, skills, values, knowledge, and behaviors.

Socioecological framework: a perspective about children's development explaining the outcome of health and learning by personal, environmental, cultural, and organizational factors.

Sense of place: an environment that became a place through the lived experiences, based on the interdependences between the environment's physical characteristics, the activities at the location, and development of meanings.

Place attachment: the emotional bond of a person and a place.

This study presents children's words translated to English and a version in parentheses precisely as spoken. This original version is sometimes a mix between English and Swedish and not always grammatically correct. The first translation to English aims to facilitate the reading. The second version is related to the ambition to produce a child-centered study, that is, to give a voice to these children. This entails being close to children's communication and avoiding linguistic prejudice. The function of language is, nevertheless, communication. If the message is understood, there is no reason to change the spoken speeches to the standard language forms. Language is ever-evolving, and while there is an official version of Swedish and English, there will always be linguistic variations across different social groups that should be respected.

3 Methodology

3.1 Research design

Children have a different way of making sense of the world than adults, challenging us in all research involving them. This study takes inspiration from the Mosaic approach (Clark and Moss, 2011), where different methods are employed in the same study, intending to facilitate communication by allowing children to convey their perspectives in various ways.

The argument that children are better suited to show their understanding with place-dependant methods, involving living contact with the environments rather than by asking their views verbally, is supported by many in the traditions of childhood geography and previous ethnographic studies (Ansell, 2008, Cele, 2006, Dockrell et al., 2000, Duffy, 2015, Jørgensen, 2014, Mårtensson, 2004b).

The investigation has been carried out as fieldwork encompassing a set of different methods: First, during June, July, and August, I visited the area and the school for ground information on the school and the local neighborhood, looking around and talking to school personal. **Participant observation** is the primary method of this study, with the aim to allow children to communicate their experiences in their natural environments and experiences. During September, October, and November during 2020, I observed children in their schoolyard, during excursions to SLU Alnarp, and in places in their local neighborhood, during eight different days, sometimes in more than one environment per day. Descriptions of the visits – with information about the date, locations, and weather conditions, can be found in Appendix B. One **child-led walk** interview took place during the fieldwork, where two boys guided me to their favorite places in the schoolyard. In the aftermath of participant observations, two **workshops** were organized in which the children got the opportunity to talk about their favorite outdoor places with drawings. Finally, after analyzing the combined material from the observations and drawing activities, I had a **focus group interviews with the pedagogues** to supplement my data and impressions during my first efforts of preliminary interpretations.

To understand children's development of senses of place I drew on theories from Edward Relph's three dimensions of place identity (Relph, 1976). As a backdrop to this, a theoretical framework on learning theories is presented, including Bronnfenbrenner's and Stokol's Socioecological framework for human development (Bronfenbrenner, 1994, Stokols, 1992) and theories about experiential learning by Vygotsky (Vygotsky, 1978) and Dewey (Dewey, 1958).

A general qualitative data analysis was performed, focusing on all data gathered from children, resulting in two types of results. The first part is a **Narrative map** (Jørgensen, 2014), a visual reproduction of children's favorites places, and a narrative result. This result presents examples of narratives of how these children, living in a low-social economic urban environment, use outdoor while developing meanings about these places. The second part results from a **thematic analysis** that explores positive outdoor experiences related to development of sense of place and learning. The characteristics of the environments, physical and social that support children's use of the outdoors and nature for these experiences. Following there is an illustrative schema of the research design:

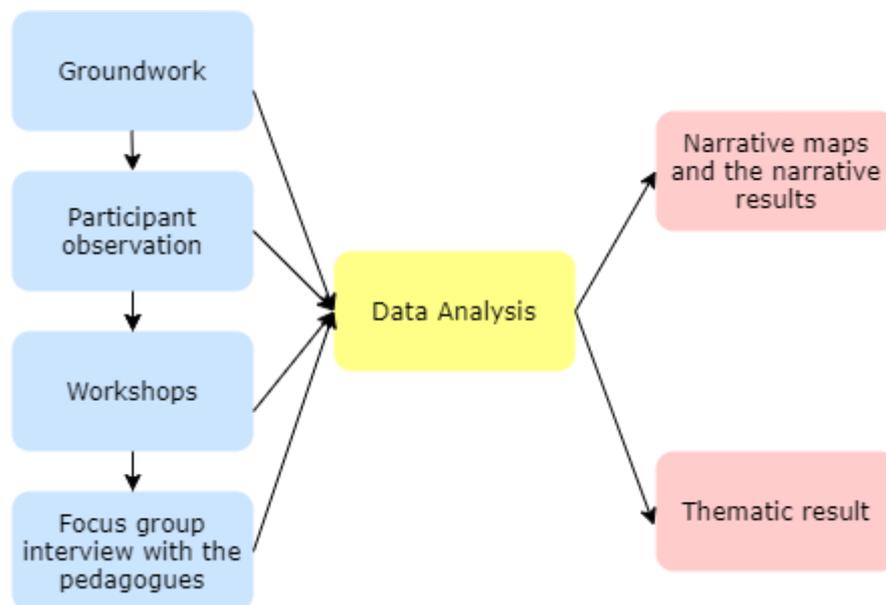


Figure 1: Illustration of methodology describing the methods and the processes

3.2 The case

The pre-school here will be referred to as *Rainbow pre-school*. Rainbow pre-school is located in a suburban neighborhood in the south of Sweden. The Swedish Police have allocated the area into the most severe category of “vulnerable environments (utsatta område)” due to the existence of low-social economic characteristics, specifically systematic threats and violence (Polisen - Nationella operativa avdelningen, 2015). According to the municipality statistics, the area is predominantly inhabited by people born in other countries. Most children in the Rainbow pre-school live near the school, and the majority have both parents born in foreign countries, and most speak a foreign language at home.

The Rainbow pre-school practices are inspired by the educational pedagogy of Reggio Emilia (Edwards et al., 1998). The theoretical background to the pedagogical approach reflects a constructivist perspective to early education, based on the central values of responsibility, respect, and community, attended through play, exploration, and discovery. The pedagogy takes departure in children as knowledgeable and competent social agents that should be active participants of their learning process. Their education approach is grounded in the children's centers of interest, promoting their communication among their "100 languages": children's multiple ways of communicating, perceiving the world and being. Children are encouraged to share their ideas about everything they meet during their days, explore and observe, question and hypothesize, grow their knowledge, and clarify their understandings. This education also views children as a part of the social community around them: the family, the teachers, the social community. From that perspective, a significant key is that children should be a part of the city arena because they are also citizens.

Many of the various types of activities in pre-school are proposed by the children. In Rainbow pre-school, outdoor play and outdoor activities are essential. Children usually play outside before noon and sometimes in the afternoon, for around 1.5-3 hours a day. During this year, with the current pandemic guidelines, children have spent almost all of their time in school outdoors, coming inside just for the meals and the resting times. When the weather is not agreeable, children spend less time outdoors. Children weekly take excursions walking in the local neighborhood, mostly to local playgrounds.

At least once a month, children take a bus excursion to a natural area, mostly forests and parks. This studied group has been many times to the SLU Landscape Laboratory in Alnarp, which will be an environment visited in this present research. A central idea in these actual visits' pedagogical aims is to foster children's relationship with the outdoors and nature. The contact with natural elements is seen as an opportunity to make children understand how to care for nature and how to be respectful with the ecosystem.

Visits to natural environments typically include walks, time for free play, or goal-directed activities where children have tools used to produce or collect something that would later be utilized in pre-school activities. Examples of such projects are: children have taken photographs of the environments, they filmed each other, collected natural materials for activities, such as insects, stones, snails, mushrooms, as for taking into their school garden. These activities inspire further pedagogical activities back in school. Here are some examples: talking about the natural elements collected, representing the natural elements through art (clay or drawing), observing elements with a microscope.

3.3 Procedure

3.3.1 Groundwork

The researcher must gather information about the community and location studied to ensure that the research design and result accurately represent the people who participate in the study (Derr et al., 2018). Furthermore, a good understanding of the group study is essential to achieve a social-cultural understanding of the environment, affecting how children perceive and use environments and create meanings for a place (Waters, 2017).

I initiated my investigation by gathering information about the locality through secondary sources: national and local statistics, police reports, news, and maps, which gave me information about the region. I do not share the bibliographic information about most of these sources to preserve the school's anonymity and the area. I also had three occasions of informal observations in the area around the school.

Firstly, during the summer, I introduced myself informally in the pre-school, which is an essential step to gain institutional access for a study (DePoy and Gitlin, 2016). In this visit, I introduced myself to a pedagogue in an information meeting, where I heard about their study's expectations. I brought an informative letter about me to be shared with the other pedagogues. Later, at the

beginning of autumn, I conducted a *semi-structured interview* (Kvale and Brinkmann, 2009) with the school's main pedagogue, intending to gather information about the students, the personal constitution, school times and schema, the school and their perception of the children in the outdoors. The interview guides can be found in Appendix C.

I did a literature review on *childhood experience with place, place making, childhood geography, and children's development and learning*. The literature review developed parallelly to the fieldwork data, which was always, during the whole data, compared with theory. The theoretical background of Place by Relph (1976) was stated initially, but it was continuously revalidated during the process. Katrine Fangen (2005) advises keeping the qualitative design open and non-structured with the possibility of later additions leaving space for changes in how data is analyzed as the field work evolves.

3.3.2 Participant observation

Participant observation is a method where the investigator establishes a multilateral association with the researched group in realistic situations to understand the studied group (Becker and Geer, 1957, Fangen, 2005). This is a method in which the researcher takes part in the daily lives of the people being studied, combining observation of what others do, observing how things happen, listening to what is being said, and occasionally questioning the participants (Becker and Geer, 1957). Participant observation focuses on the social and group patterns and understandings rather than on the individuals (DePoy and Gitlin, 2016, Fangen, 2005).

This methods' choice is based on the assumption that the expression of place perspective is context dependant and related to the physical body in motion (Horton and Kraftl, 2006) through emotional, cognitive, and imaginative engagements in the environments in the present (Ansell, 2008). Studying children's expression of place-making through their use of their everyday environments is important because it can offer a fuller understanding of what everyday life entails for children (Cele, 2006, Hart, 1992).

Participant observation occurred in three different settings: in their outdoor environments of their school, in their local environments, and the study visits in the Landscape Laboratory. The natural landscapes of Alnarp are landscapes traveled to with some frequency. These observations did not aim to present a comparative study of their environment's perceptions, instead to observe these environments as a way of exploring how these children understand and use their places and natural elements.

I visited the children in the school and observed their activities outdoors and occasionally indoors. My observation focus was their relation to outdoor environments as they became meaningful. My focus was on children's embodiment use and movement in the environments and attention to the emotional and affectual use of places. To understand children's communication of places, many authors, as Cele (2006) and Bartos (2013) have argued that the researcher needs to be attentive to children's body signs. During my observations, I had in hand the concepts of *Sense of place* (Relph, 1976) and *Affordances* (Heft, 1988) to focus my observations.

Guest et al. (2013) highlight the importance of defining the degree and balance between observation and participation when doing participant research – as different kinds of data to be achieved relate to different roles of the researcher in the field. In the initial days and the initial moments in different environments, my observation focused on observing all children's movement from a far-away perspective. The strategy was to watch when the children were playing freely outdoors, without my interference. This means that I took notes about how they moved into the environment, where they stayed the most, what they used if they played together or alone. These observations aimed to gather an overall understanding of place and the different environments.

After I had had some initial time to observe in the following days of observations, I continued observing from far but also had a new strategy. The second strategy of observation was highly participative, making my role more visible. During the observations, I asked children to explain what they were doing and tell me about places while they are in certain environments, being guided by them. I was careful to pose questions with an open character occasionally, as "*What are you doing?*", "*What are you playing with?*", "*What is that?*", "*What is this place?*". I aimed to engage the children to explain what they are doing while still in place, hopefully engaging them to express their place-expression processes.

On one occasion, I asked two boys who wanted to play with me if they could show me the nice places in the schoolyard. They accepted the task and took me around in a child-led walk, a research method where children guide the researcher (Evans and Jones, 2011). This method of speaking with children is advantageous because it can decrease the risk of influencing the results by the perception of adults, as movement involves the children more naturally concerning their everyday lives and use of environments. The boys guided me to series of small outdoors elements, showing me how they used these environments, and telling me why they were excellent.

On one occasion, indoors, I observed and registered material from an activity that the children's pedagogues had proposed. This was a project where children took photographs of the outdoors themselves and chosen pictures on the wall. I took notes of the content of these pictures, which I used in my analysis.

On some days, I brought a camera to take pictures of the environments when children were not present. The photos were stored as digital files from each date on my personal computer.

3.3.2.1 Fieldnotes

Katrine Fangen (2005) argues that fieldnotes need to be open and editable to grow during the analysis because participant observation is an untidy method that mixes subjective perceptions to objective observations that can be developed after observation. I created a routine to write fieldnotes from the observations. I had a notebook in the field and took down the narratives while observing. After the visits, I register the same texts on my computer and further developed what I have observed digitally, to distance from the field and calmly write and remember.

My fieldnotes aimed to have overall descriptions in most days, and some furtherly described situations that I find connected to my aim. That means that sometimes I registered some situations with greater detail and description, while other times I kept a more general description of what happened. In these notes, I wrote down what I must remember to ask others or do later. My

fieldnotes aimed to be descriptive and avoid interpretative words, as naming emotions. For instance, rather than writing that children are "happy" or "angry," I described what they expressed and how having an overall description of what takes place.

Sometimes teachers ended up having informal conversations with me about the role of outdoor environments for children's agency to play, these children relation to environments, or explaining to me about observed facts with information from situations when I was not in the school. I also took fieldnotes about these informal conversations. Because I did not want to mix the information from pedagogues with the ones from children, I created a fieldnotes section called *Information from teachers*, where I daily registered all of the information gathered.

I created space for a summary for each day in the template for my fieldnotes. The goal was to summarize the key points. The summarized samples contained the following sections: Date and weather; overall observed place; places observed; interaction with the children, actions in the environment and a summarising comment.

3.3.3 Workshops – drawing favorite places

Drawings were used in many studies investigating children places-experiences, positively supporting children's communication of their abstract experiences (Cele, 2006, Derr et al., 2018). These activities in here were inspired by the ideas in the book *Placemaking with Children and youth* (Derr et al., 2018).

I designed two activities to allow children to express their understandings of places. The first activity aimed at finding children's best places in their pre-school outdoor spaces. The second activity allowed children to express about one adequate outdoor space for their use and activities. Due to GDPR restrictions and corona restrictions, I was not able to perform these activities myself.

I created instructions about introducing the activities, how they should be introduced, and how the pedagogues should ask open questions during their drawing and right down the utterances expressed. The instructions can be found in the Appendix D.

The two activities were done indoors during a week, on occasions on different days. On one of the days, the activity was lead by one pedagogue and one substitute. Children were divided into three small groups. Pedagogues started with an introduction as planned, telling the children that the drawings were going to be shown to me and that the goal was for them to express themselves about outdoor places unique to them. Pedagogues showed pictures of different places in the school garden because otherwise, children would not understand. In the second activity, no pictures were shown. They asked the planned questions, and the children started drawing. Some children did not understand the activity, which the pedagogues think has to do with language barriers. Teachers wrote comments about what children told in the activities in the drawings. We had a video call, me and the pedagogues, some days after, where they told me about the activities.

3.3.4 Focus group interview with the pedagogues

Focus group interviewing (DePoy and Gitlin, 2016) is a methodology in qualitative studies. This method can give complex insights about a topic through a group discussion and unfolding of the interaction between the interviewed group members and their understanding of daily tasks' key-issues.

After the fieldwork had been completed, I had a focus group interview with two of the pedagogues. The main aim was to increase intersubjectivity in this research and support my interpretations. In these, I explored how the pedagogues understood the children's use of environments around them and which role they saw that places had in their everyday practices for children's learning.

3.4 Data analysis and the narrative map

3.4.1 First phase: familiarization with the data, coding, and initial analysis

The fieldnotes and the other material gathered were re-visited and read a couple of times to obtain a comprehensive view of the whole material. Insights and thoughts about patterns, ideas, and connections within the material were noted down in a document. This familiarization process during the fieldwork was fruitful because it gave me a good understanding of the fieldwork, which helped me prepare for further observations.

I sorted out my fieldnotes into three categories: *observation fieldnotes*, *theoretical fieldnotes*, and *methodological fieldnotes*, as recommended by Fangen (2005). *Observation fieldnotes* were notes about the actions observed in the interactions between who, what, where, and how, without much interpretation of what has happened.

Theoretical fieldnotes were reflected and controlled attempts to find the meaning behind one or more observations. Initial interpretative hints were registered, with open interpretation, some conclusions, and new hypotheses and guesses. I also noted theoretical background related to what was observed. *Methodological fieldnotes* were daily reflections to me as a researcher, with thoughts and instructions to myself, a critical reflection on my fieldnotes' validity, and how I would go about the task during the next session, for example, focusing on specific places. In these, I also reflected over my position in the field, thoughts, and own emotions.

The procedures of analysis entailed a strategy of reduction and sensemaking of data that was successive and dynamic. Coding generates labels from raw data to identity concepts, topics, and relationships within the texts (Braun and Clarke, 2006). From all of the phases of analysis, I created open codes across all data. When fieldworks added new data, the new patterns were observed against the older data units. This was a continuous and repetitive process. The dominating theories of *Place* and *Development* literature were noted in the open coding process analysis as

sensitized concepts, not *definitive*. The analysis brought other aspects that modified the analysis perspective according to discoveries in my investigation. In that way, new literature was added to the background. This provided an inductive and open coding process– started from the beginning, notes of themes, ideas, questions, discussion of the method. Repetitions and patterns were noted as concepts that could become a theme in the future of the analysis, to check for confirmation or disparity. When the fieldwork was completed, the themes found were re-check against the whole data to see if they represented the data's wholeness while maintaining a clear distinction between the found themes. The same process was used to observe the meaningful environments for these children.

Additional background research, gray literature, informal interviews with teachers, and interviews were noted and saved in a separate file for later analysis.

3.4.2 Second phase: Narrative maps

The narrative results explore the everyday use of outdoor environments, the excursions to nearby environments, and excursions to SLU Landscape Laboratory in Alnarp and these children's positive experiences of places. These children's place experiences were explored based on field observations, informal conversations with the children, drawing activities with the children, and confirmed through informal conversations and a focus group interview with the pedagogues.

The *narrative method* was chosen to illustrate the observations' richness and make the qualitative work clear throughout the many narratives. Narrative inquiries are commonly used in social research due to their functional capacity to understand underlying aspects of the complex human experience (Sharp et al., 2019). This analysis phase was guided by a method called *Narrative maps*, created in a study that explored relations of pre-school children and place by the researcher Ann-Karin Jørgensen (Jørgensen, 2014). This method provides an overview of children's relationships to place, thorough the visual presentation of significant places, represented by drawings on a map. The map proposed by Jørgensen:

"goes beyond the abstract and mathematical image of a landscape, the distances are not accurate, and the elements that are marked are elements of importance are in the narratives (2014, p. 57)."

I aimed to identify places and commonalities between different outdoor environments, and by that, evaluate senses of place for these children. To identify meaningful places, environments were paid attention to according to the definition of Place by Relph (Relph, 1976): the physical settings, the activities, situations and events taking place there, and the meaning these have for individuals and the group. These children's relationships with certain places were visible through their repetitive use in various creative and long-lasting play engagements. Specific places in their everyday activities were collectively important.

Two Narrative Maps for these children are presented in the results and narratives representative of these places. The drawings of the two sketches are certainly not accurate and not of artistical quality, the distances are not correct, but they represent essential elements for these

places' narratives. The narratives resulted are structured as classical linear stories. They have a linear structure and an expression of a meaning that is explored in theoretical comments for the narratives. Most of the text narratives presented are constructed from the plot of similar episodes in the same environments.

3.4.3 Third phase: Thematic analysis

The final phase of systematization was to compile the full understanding of the data and categorize them into patterns found, as themes related to children's relations to outdoor environments and how they related to children's learning opportunities. Analyzing the content of the narratives supported me to determine meaningful moments of experience. Through this process of coding, grouping codes, and comparing to the Narrative map results, the *Socio-Ecological Perspective* (Bronfenbrenner, 1994, Stokols, 1992) emerged as a logical unit of themes found.

I compared my thematic results with the framework, seeing how the results related or did not relate to them. When this process was saturated, and I felt that the themes could no longer be developed, the material from the pedagogues, annotated in separate files, was compared against the analysis, relating them to confirm or contest my qualitative analysis and gain a deeper understanding. Firstly, the pedagogues material was analyzed through a thematic analysis. Then, the result of the thematic analysis was compared against the collected data from the children. If there were disagreements in the focus group discussion, I would list this in the results, but that was not the case. Instead, pedagogues added some practical information that enriched the results. These could be examples of activities that happened when I was not present, and the background of specific behavior children had.

3.5 Method discussion

3.5.1 Qualitative parameters

In reflecting on this study's methodology, I need to evaluate quality factors. In that way, I guided myself by the two main factors proposed by Fangen (2005) for the quality of participant observation: *Validity and reliability*.

Validity: this measure concerns the following question: Does the research answers the questions and measure what should be measured? According to Fangen, participatory observation generates a high degree of validity because it is closer to the objects studied in their natural environment and has a low degree of effect on behavior. To guarantee the naturalness of the observed environment, I was attempting not to lead the children to use different environments. My questions to the children would be open and non-conclusive: *What? How? Tell me more?* - without any affirmations. In the exception of the episode where I asked the two boys to show me around

their schoolyard, I did not guide the children or asked them to show me environments or do something. I was instead led by them when they approached me.

Another aspect of *validity* defined by Fangen is *Communicative validity* is to control the validity of the interpretation and observations by having discussions with other people in the field. The pedagogues working with the children contributed to such information during informal conversations in the fieldwork and during the *Focus group interview*. For instance, during the fieldwork, I asked the pedagogues on one occasion: "Children told me that they collected all of those stones themselves. Do you know something about this?". Pedagogues answered, telling me how they saw children digging and finding their stone for weeks, collecting them all in that one place, by themselves. They told me about a project that they had with the children, with stones, inspired by children's behavior outdoors. In that way, they confirmed to me what the children had told me and added background information.

The pedagogues sometimes approached me. They, on these occasions, explained to me their thoughts about play and the environments while observing. This information was about knowledge of previous school projects, previous excursions to the Landscape Laboratory, or knowledge about previous and repeated play experiences children had in the schoolyard. I saved all of these notes in a separate file and revisited them after analyzing the children's material felt saturated.

Reliability: it concerns the question: would another researcher arrive at the same result if they had observed the same facts? Martín Sánchez-Jankowski (2002) indicates that reliability can be measured by an accurate representation of the population studied, which means that the group studied should represent other populations aimed to be understood in this research. This, according to the authors, can be achieved by having a well-selected group, places, and times studies related to the background. The selection of pre-school and their visited environments relates to the aim of this thesis.

3.5.2 Discussion of the method

While some researchers seem to use small children's methods that include interviews indoors, games with puppets and other adult-initiated interviewing methods (Chawla, 2020), this study argued that there is a need to interview children in their everyday experiences, because the understandings of place happen with the context of everyday life (Cele, 2006). Studying children with participative methods was very crucial for this study's aim. Participant observation was a research tool that gave space for children to communicate in their own terms, verbally and physically, by playing, showing places, moving, and showing their thoughts in their ways. The excitement of children was evident, for instance, when children showed me things or environments.

Sometimes we had language issues, but communication was still effective. Most children were younger than five, and some did not speak English or Swedish. In these situations, children still approached me to tell me about things they have found or done and showed me places. I needed to be available and attentive for their dramatization of events, where sometimes they explained to me a game or a situation by theatrically moving their arms and bodies. In a situation, for instance, a small boy without common language skills with me directly approached and told me about an

excellent location to find exciting worms by pointing, moving and representing, laughing. It was my function to be aware and open to children's different ways to communicate.

Participant observation is a method of interpretative roots, which means that the results are always judged by previous experience, where an observed action can be interpreted by personal assimilation and comparison, both related to perception. Qualitative methods' richness allows for multiple interpretations and new conclusions if new researchers evaluate the results (Wyver, 2017). My observations are my own perspectives: they represent my own experience as a researcher in the field and represent my lived reality. However, I did co-experienced the lived facts, having many opportunities present in the children's use of environments and hearing explanations from the children themselves.

The quantity of fieldwork, even if short, showed to be rich and complex to gain a series of understandings in this qualitative investigation. The groundwork of preparation and the attention to present me for the children, in the beginning, showed to be crucial for children to feel comfortable and to facilitate the observations. The visits to different environments, in their everyday contexts, improved the possibility to understand how these children experienced different settings. Something interesting was to observe how children repeated some behaviors in different environments, created group activities that lasted for weeks in different places, and compared a place with another. This was possible due to the observations in different settings.

I have backgrounds that influence my understandings. This includes my professional experience working as a pedagogue. Another aspect is my cultural background: I am now a local of Sweden, with a background in São Paulo, Brazil, that also lived in France. In ethnographic studies, that might be both an advantage or a disadvantage. According to Fangen (2005), on one side, my cultural background of being an immigrant that had to adapt to different realities in the world could have facilitated my understanding of children's behaviors. On another side, they also affected my understandings and interpretations, and therefore this is important to be considered. Bourdieu (1977) argues that it is impossible to avoid observed individuals' objectification, but this can be remedied by a constant reflection of the researcher's position in the field. In order to tackle that, at the end of every observation, in my fieldnotes, I reflected on my behavior in the field with questions such as: "how did I act?", "Where did I stand?", "How much did I interact?", "What kind of questions have I asked? Reflections sometimes led to critical remarks that became changes in the next few days. If I noted that I had done something that could be changed, I would change that the next day. One example is that, in one of my reflections in the initial days, I noted that many of my notes were about girls because they often approached me. In my next visit, I tried to pose myself closer to boys and sometimes approach them, asking friendly what they were doing. After that, the boys started telling me about their games and places.

I did not perform the workshops. I designed them, but the pedagogues did them without my presence. This was related to social-contact recommendations to the pandemic and the school's refusal to allow a digital conversation with the children. This has some negative impact, as pedagogues could have influenced children in their activity and I missed the opportunity to ask questions while they made the drawings.

Cele (2006) argues that a great advantage of participant observation is that it actively seeks to address the power relations between generations and hierarchies at institutions, leaving outside

the power position teacher-pupil. She recognizes the adult researcher's hierarchical role as the children's detached observer while proposing an approach position that assumes the generational differences without the hierarchical power relations of adults and children. That means that the researcher is not an authoritarian adult but does not attempt to behave like a child or another friend; the researcher is not invisible and still not a pedagogue. The researcher assumes, therefore, the open position of an observer.

I addressed this issue by introducing myself to all the children in one introductory meeting and explaining my role as a researcher, and my interest in their relationship and views of outdoor places. I was careful not to mention that I was research at SLU or that I was interested in nature's role because I did not want to lead the children. On that occasion, children did not know what a researcher did. So I explained that while their teachers were there to support their learning, I was there to investigate and learn from them. When I later visited the school, sometimes I said hello and asked the children if they remembered what I did. They answered many times was that I was a researcher, interested in learning about what they found was useful or fun to do in the outdoor environments. At any moment, I mentioned that I was looking into their relation to nature or their places. This was positive also because children showed me places, included me in their play or invited me to access certain places to crawl under some bushes. Having outdoor clothes was crucial in that sense.

Children's and personal behavior might have been affected by my presence. I noticed that, in the same ways that children would bring particular objects to the pedagogues to use in activities indoors, they sometimes showed something to me and appeared to expect for some reward, as of a compliment or that I would take the object indoors, for later. I did not react in the same way as pedagogues, but I looked at the elements and engaged in dialogues with open questions: "could you tell me more about this?". In the beginning of the fieldwork, I observed a constant interference of pedagogues in children's play. This was not the school's typical behavior, as I later learned, from the pedagogues themselves, that they could be perceived as incompetent when allowing children to play freely outdoors - even if they were aware of their positive effects. In this sense, understanding the whole organization was essential not wrongly interpreting the observed facts.

Gathering information from the pedagogues was essential to contribute additional information. Most of the pedagogues had great familiarity with these children's way of play, narratives, and behaviors. In that sense, I see that interviewing the parents would have contributed to this fieldwork. Having an open dialogue with them also supported this study. From the beginning of the study, I learned that the pedagogues wanted to tell the children that I came from Alnarp and that I was interested in nature. They were afraid that children would only tell me about built playgrounds and parks if I just said that I was interested in the outdoors. I explained to them that it was ok if children just spoke about these environments. In that way, I convinced the pedagogues to omit this information and mention that I was a researcher interested in outdoor environments for children.

The qualitative material's continuous analysis while performing participant observation entailed a lengthy literature review and a systematic structure of parallel analysis. The literature searches revolved around the wide range of literature concerning the already interdisciplinary field of environmental psychology, children's geographies, and the fields of development, education, and sociology of childhood. Finding the balance for this literature review, the theoretical, observative

(inductive) and methodological analysis was challenging. It involved a constant work of reflection far from the field. Nevertheless, in that same way, it contributed to more focused and detailed fieldwork. Furthermore, it was also an opportunity for me to develop my analytical skills in being a researcher. By continually coding the fieldnotes, I believe that I learned about the method, updating it according to my field conditions, and continually improving.

The narrative maps and the narrative results were an exciting tool to visually represent children's constructions of identities for places. The inclusion of the narratives was crucial to represent the experiences in place. These maps are one example: because places are ever-evolving, they represent a construction of their meaningful-places during that specific time. If I was to continue this research, different maps could represent these change on meanings regarding environments. The thematic analysis supplemented the narrative maps with considerations about how places related to children's learning and development. These results are useful for exploring how children negotiate and understand their places and lived experiences. This could be useful to gather insights for environmental planning and for teachers to gain knowledge on how to implement the use of environments for education.

The pandemics did not allow me to discuss the final maps with the children, which was the original plan. If I had the opportunity to show them the places, they could support me to put more elements or change some. However, as I observed them interacting with their environments, I had opportunities to speak with the children about places, to ask them about the objects of importance, and to confirm their collective identities to environments. As I found significant places during the fieldwork, I tried to confirm their significance by observing in the next visits. These were environments that children showed to me themselves at some point. Because children knew that I was looking after “roliga och bra platser”, they spontaneously approached me to explain and show me place's qualities.

4 Ethical considerations

This project's ethical considerations followed recommendations by the *Human subject protection*, a set of three primary ethical principles that should be followed by all investigations regardless of the scope of their research. These are *full disclosure*, *confidentiality*, and *voluntary participation* (DePoy and Gitlin, 2016). To legally address the issue of *voluntary participation* in this research involving children, this study followed the recommendations by the *Conditions of Effective Projects for Children's Participation* (Chawla, 2001). This research also followed the recommendations for the Swedish Research Council's ethical considerations (Hermerén, 2011). This is a following description of the measured followed and how they were attended:

Full disclosure: I provided information from the study during groundwork and was available to provide more information during the full length of the work. Informative letters can be found in Appendix A. The informative letter addressed to the parents was given to the school board at the beginning of summer. However, on my first day of fieldwork, I learned they had not yet been delivered. I asked the school personal to put the letter, with a picture of me, on a shared board to facilitate identification when parents saw me at school. The school had an agreement that allowed researchers to observe in the school, but I still judged that it was the parents' moral right to know about my presence. So I rapidly did a new version of the letter with the new date and adapted my method. I eliminated the planned individual interviews because I was advised that there was a risk that the parents would not answer the letters on time.

Confidentiality: Fieldnotes were kept on my personal computer with no access to others - these were only shared with my supervisors. My personal computer has a password to access. I use a proxy service to hide my VPN and my location on the internet to keep my files' security and privacy. References from the statistics and the school were omitted to preserve anonymity. Fictitious names for the children were used in the fieldnotes. No real names were recorded. No pictures of the children or the pedagogues were taken. Pictures of the environments were also filed privately on my personal computer. Pictures did not include elements that could make the school identifiable.

Conditions of Effective Projects for Children's Participation (Chawla, 2001) proposed a series of ethical questions to be taken into considerations. These were selected and performed concerning this study:

Conditions of the project established: (1) *The project was built on the already established conditions in the pre-school*. The participant fieldwork happened within the context of the children's everyday activities: in the schoolyard and their excursions, and my visits occasionally occurred. On some occasions, the schools decided to have indoor excursions somewhere at the last minute, so I re-scheduled my visits.

(2) *The project is built on children's interests*. From the beginning of the study, if the children invited me to participate, I agreed. Sometimes children themselves approached me to show me some aspects of the environment they found useful or told me about.

The original workshop should have been done in person or zoom. When the time to do the workshop arrived, the Swedish government had recommendations to avoid maximum physical meetings due to the covid-pandemics. I was advised at university that it would be unethical to visit the school with the government's advice. Together with the pedagogues, I decided it was best not to have a physical meeting for these activities. So I created the workshops and decided that we would do the activities digitally together, through Zoom. The school contacted me a week before the workshops, telling me that, due to the GDPR restrictions, children were not allowed to be digitally involved. We came to the final solution: the pedagogues did the workshops without me, sent me the results via e-mail, and then described what happened in a video call. Was this decision in the best interest of the children? Did not these children had the right to personally tell me about their favorite places, in the activity, online?

The children became familiar with me during the fieldwork. Some children were very eager to approach and tell me facts or want to have contact; other children were shy and avoided me. To observe and get material from all children, I had to be patient and sometimes distance myself from some children, approaching or observing the shy ones. Because the pedagogues did the workshops, I am unsure how much of the contributions came from these more shy children. Did all children communicate their place preferences equally?

Conditions of entry: (1) *Children were free to choose to participate or decline:* I found that the group accepted me very fast, with many children spontaneously approaching and telling me about their favorite places or activities. Some children approached me with hugs and physical closeness. Due to the pandemics, children were advised to keep their distance, and I avoided approaching them indoors. However, they approached me many times to play or sit close in some moments. Sometimes I was invited to join in games together with the children, sometimes they approached to hug me, and I felt overall accepted in their group. If the children did not want to speak with me, by verbally or bodily avoiding my presence, I moved away.

Conditions of social support: (1) *Children are respected as human beings with essential worth and dignity:* the workshops of drawing followed the principles suggested for the child-friendly planning process in (Berglund and Nordin, 2007): *the research involving children needs to be meaningful to use; the research should not offend the child's integrity and self-esteem; Interviews with children should be short (15-20 minutes).*

Conditions of competence: (1) *Children understand and have a part in defining the activities.* Giving voice to children in a world where adults have hierarchical power is complicated (Harker, 2005). Because of that, research regarding children's perspective must draw from innovative participatory methods in order to facilitate children's communication (Cunningham et al., 2003, Dockrell et al., 2000). I had a introductory meeting of myself to children indoors, and I was open for questions. Sometimes I followed them indoors, where they guided me. The suggestion to have activities with drawings came from two girls, asking me if they could draw me their favorite environments.

(2) *Children were helped construct and express their views, provided with the information to make informed decisions:* I was attentive to children's bodily expression besides their conversations. Sometimes I would raise open questions for them to explain. I created the workshops with drawings to give one more way for children to communicate. In these, instructions about using the

environment related to the senses were repeated by the pedagogues to provide information supporting children to relate to their favorite environments.

(3) *The project results in tangible outcomes:* one of the parts of the results that were previously introduced, the *Narrative map*, is a choice accessible for children and tangible to their understanding.

5 Children's development and senses of place

5.1 A Socioecological framework

Development can be explained by a variety of theories and perspectives that focus on different aspects that influence and form the way that children grow up. This thesis explains childhood development with a theoretical background considering social, emotional, cognitive and aspects of identity formation.

The socioecological framework for human development (Bronfenbrenner, 1994, Stokols, 1992) acknowledges that children's learning and cognitive development occurs in many different contexts from the lived experience. The model is grounded on the original *Ecological framework for Human Development* proposed by Urie Bronfenbrenner (1994). In this theory, the child's development is the outcome of the entire ecological system's dynamic interaction among many different factors at different levels. The child's original biological and psychological grounds are affected and modified by the physical, social, and organizational environments. This takes place in multiple contexts, within the social environment of family, school, and neighborhood, within the community environment with its social, political, and economic conditions, and the general beliefs and attitudes in society at large. *The sociological framework* by Stokols (1992) adds the notion that the person is a part of the environment and thus acts in a dynamic interplay, in which these contexts are mutually and dynamically influencing and being influenced by one another. These influences continually happen, being interdependent and inter-related, meaning that they can also change and influence the other unities while they exist in their unities.

For children to have positive experiences that will support their development in these different spheres, pedagogy needs to play a crucial role. The *Vygotsky theory of cognitive development* (Vygotsky, 1978) states that community, cultural and social experiences, with an emphasis on the role of play and the role of adult mediation, have central importance for the cognitive development of children, such as overall thinking, memory, attention, problem-solving and self-regulation. This model states that the development of cognitive abilities is essentially linked to activity that is socially mediated. The support of the caregivers, parents, and the overall society and culture are crucial for developing children's cognitive capacities. The central notion is that learning happens within activity concerning the child's cultural and social contexts (Berk, 1994). The Vygotskian development theory is strongly supported by contemporary studies about children's development (Karpov, 2020).

John Dewey (1958, 1938) is another scholar pointing out the need for educational approaches, including developing children's everyday experiences. Dewey also points at education as essentially a social process, whereas the educator should facilitate experiences in the social process that we are all included. Dewey's central argument is that learning can take place through experiences in everyday meaning-making. The everyday learning experiences are different from the

scientific meaning created by the persons relating things in educational sets. Traditional education is the transmission of information and standards, with the enforcement of rules of conduct. It is an imposition of adult standards that require minimal active participation from the pupil. Learning through experience can provoke active and appealing acquisition of skills, expression of individuality, and growth, in which they become involved in learning about our changing world. Dewey suggested that not all experiences are educational, but just the ones that promote further experience, gain new knowledge or reorganizing facts, knowledge of facts, or the arrangement of facts. Therefore, there is a need to investigate the quality experiences related to creativity and growth in pupil's subsequent experiences.

In addition to these scholars in education, we have approaches for the empirical investigation of people's experiences which is well-tuned to such ambitions: an overview about the empirical studies of children experience's of everyday environments and places.

5.2 Children's experience of place

The philosopher Merleau-Ponty (1982) introduced the phenomenological notion of perception that overcomes the polarities between the traditional cartesian dualism body-mind – that is, the idea that consciousness is a purely mental process. According to Merleau Ponty, perception is a movement of the living dialectics of a subject participating in the world's whole structure, in a complicated relationship between emotional, cognitive, and imaginative engagement within our body. In his work, the world's perception is, or the body-subject, the embodied succession of daily life, made of the sensuous experiences in the physical reality. In the *Phenomenology of perception* (1982) the child is depicted as having a more open and broader sensory engagement than the adult. The adult has a more objective, intellectual, and crystallized perception of the environment.

Developing the ideas of the embodied relations with the world concerning place perception, Tuan (1977) argues constructions we have about places come from the continuous and daily experiences of environments in our sensuous bodies. Because of the lack of sensuous attention to environments, adults tend to depend on memories and idealizations of place that are created over time. For some adults, memories of their childhood environments are necessary to understand their experiences and relations with place in the present (Hester, 2014, Morgan, 2010). On the other hand, Tuan states that children's imagination and knowledge is tied to movement in the present moment.

For most adults, a significant way we recognize the world is through vision rather than with the other senses (Rodaway, 1994). Rodaway suggested that the perception of children is not dominated by the vision but with the great importance of other senses in the experience of place. Children understand and use place with excitement with the novelties of the everyday experiences, paying attention to place and exploring their environment with all of their senses (Laaksoharju, 2020). Further, Fleet and Britt (2011), investigated children's perceptions of their remembered preschools and found that children revealed memories tied to more informal play, actions, and interactions in particular environments, rather than recalling their sitting environments where they had lessons.,

Because the body is ground to our perceptions, and the sense of place is deeply connected to our perceptions, a focus on the body helps explore place-making processes. Later in this study, narratives of children's perceptions of place are also presented by focusing on how children's bodies use and experience place with senses.

In order to explore children place relations considering the embodied lived experience, many studies have used the concept of *affordances* (Fjørtoft, 2001, Fjørtoft, 2004, Kyttä, 2004, Jørgensen, 2014, Niklasson and Sandberg, 2010, Änggård, 2011). Gibson's (1977) Theory of Affordances is an ecological approach developed to consider an embodied understanding of perception. An affordance is a specific property of an environment perceived by an individual for their effective use. Harry Heft (1988) develops a *Theory of affordance of children's environments*. Heft argues that adults perceive environments by their features, while children experience their environments by their possibilities. For example, an adult entering a forest might perceive a tree, shrub, stream of water, while a child is more likely to perceive what they can do in the environment: climbable, hiding place, jumpable. Heft acknowledges that the observer cannot anticipate affordances, even if an observer can know what affordances can provide. Observing the behavior of people in a setting is the only way to understand which are the affordances of one environment for a group or individuals.

The Theory of Loose Parts (Nicholson, 1972) refers to children's attraction to moveable components in their play, offering many opportunities for open-ended play. According to Nicholson, children are keen to interact with variables in the environments, such as different materials and shapes, physical phenomena that stimulate the senses (e.g., smell, taste, touching, moving), soundscapes, and sounds. Added to the physical concepts of the environment, children also like to interact with concepts, ideas, animals, and people, which are all "loose parts."

The cultural contexts and the family restrictions affect the affordances for children. That is, as a result of adult's fears, even if a specific child might perceive the affordance of something, they might stop acting because of rules. These include parents' conventions, gender-related expectations, cultural orientations, and adults' judgments about the children's degree of competence (Korpela et al., 2002, Waters). For instance, if a child sees a puddle of water, they might perceive it as "jumpable," but if adults have set rules that they must not get themselves dirty, children are likely not to jump. Similarly, girls might not be allowed to explore, as for expectations of femininity. Because of that, Waters argues (Waters, 2017) that, in order to understand affordances, it is necessary to investigate the social construct of children by learning about the cultural context of children and their set of rules in school or at home.

Marketta Kyttä (2004) created the concept of *actualized affordances*, which refers to the process, whereas affordances are perceived, used, and reshaped into new affordances, revealing the individual's actions. An actualized affordance in one environment can be recognized through the setting's appearance or through self-reports by an individual. The presence of many actualized affordances in one environment suggests that children have engaged in continuous and changeable relationships with that place.

In summary, children's understanding of environments is different from the adults: they experience settings with many senses, continuous curiosity, and movement in the present moment. The affordance and loose parts theories support understandings of the relationship between the settings and the children's uses and activities in the outdoors and nature. Actualized affordances are

suggestions that children have positively interacted with a setting. Based on children's experiences, the next chapter discusses children's relationships with places and the meaning-making processes of place.

5.3 Children's senses of place

Places, where children expend their everyday lives affect their present, leaving effects long after childhood is over (Manzo, 2005). Many socially valued places in cities and communities during adulthood have predictable origins for individuals from their childhood (Hester, 2014). Some adults' childhood place experiences lay a supportive and robust feeling of belonging to a place, more substantial than those later in life (Morgan, 2010).

Researchers on the experience of place agree that the interpretation of what *place* entails is a complex relation between the perceptual, the cognitive, and affective responses (Manzo and Devine-Wright, 2013). Phenomenologically, significant places, according to the definition by Edward Relph (1997), are not the physical environments and objective spaces but the resulting phenomenon of lived experiences characterized by meanings and attributes, as the center of intentions and actions. As a perceptual-physical construct, places are living concepts in a continuous transformation and creation process (Seamon, 2013), existing in the ecologic and socio-economic relationships across a specific geographical space and time (Larsen and Johnson, 2012).

Children's direct experiences of places over a long time can develop as attachments (Chawla, 1992, Tuan, 1977, Relph, 1976), which are related to the creation of self-identity (Childress, 1996). Place attachment describes the bonds people have with their environments for the sake of the value of that objects' presence and the satisfaction of the child needs (Chawla, 1992, Scannell and Gifford, 2014). *The model of development of children's understanding of large-scale environments* (Hart and Moore, 1973) describes that children have outgoing place preferences according to their ages. From the initial phases of their lives until preschool, children create specific landmarks in the environment to create a coordinated frame of understanding of the physical environments.

Louise Chawla (1992) explains that *place attachment* in childhood is a balance between the internal hold of the child's familiar social center with the external hold of the world's places. Growing up, children are always coordinating and negotiating internal and external inputs of social and environmental quality, depending on the quality of their social relations, their places, and their sense of identity. Attachments developed with a place of childhood will last until the adult ages – as positive resources for adults psychological needs or as negative, ambivalent burdens.

A place's meanings can also become a *place friendship* relation, as described by Sudeshna Chatterjee (2005), a mutual relationship with an environment. Both are important for young children's learning: attachment relationships contribute to developing coping skills, and friendship relationships are necessary for gradually learning about our interdependence in a shared world.

Attachment figures and places can support children to use and explore environments. Paul Morgan (2010) developed *A Developmental model of the interactions and integrations of human attachment with place attachment in childhood*, a cyclical model about the importance of an

attachment figure (a person) for children to use and relate to outdoor environments. The model describes that when a child's need for connection to an attachment figure is satisfied, environmental cues will stimulate the child's exploration motivational system. If there is an outdoor environment that can provide the feelings of fascination and excitement, children will explore and play, generating senses of mastery, adventure, freedom, and sensory pleasure. Suppose the interaction with the outdoor environment elicits distress (through lack of perceived security, threats, or too long distance of the attachment figure). In that case, the child will seek comfort and proximity from the attachment figure, resulting in emotional arousal regulation and a sense of connection.

Places that children are attached to can also work as a *safe haven* for children to retreat from threats and achieve emotional relief: as more attached and secure a child is with an environment, the more confidence there will be for exploration of another environment (Korpela et al., 2009, Scannell and Gifford, 2014). These environment-attachment opportunities in early childhood related to helping the child deal with their distress and support self-regulation related to the development of social competencies (Barrett et al., 2013, Korpela, 2002). Children sometimes use environments quietly to address emotional conflicts as a safe base used to return to before exploring the world (Hart, 1992). Many of these environments are green spaces or treehouses (Chawla, 1992).

Positive childhood relations with the place will happen in environments where children feel secure, happy, and satisfied with the possibility of exploration and creation (Chatterjee, 2005, Chawla, 1992). Negative attachments can result from the opposite of these characteristics: the feeling of danger, uncomfortableness, and disinterest in the environments (Chawla, 1992, Korpela, 2002). Regarding memories of childhood attachments for adults, Chawla (1986) concluded that through the analyses of randomly selected autobiographies, there are three types of early childhood attachment present in adults' discourses: *Affection*, *Transcendence* and *Ambivalence*. *Affection* refers to a sense of fondness; *Transcendence* refers to sense of connection with their childhood environment, the outer world and nature. The third type, *ambivalence*, refers to when affection is confused with shadow-frightening feelings of feeling vulnerable and imprisoned. An ambivalent attachment is characterized by identifying with one's place of origin complicated by emotional injustice measures, which could be the weight of social injustice, ethnic stigma, or family weakness.

Many studies in low-social economic environments, being many places with a culturally-diverse population and suburban communities, suggests that it is common to develop an ambivalent or hostile type of attachment to place. A study about adults, remembering their childhood being children of Chinese immigrants who grew up in Canada, found that their sense of place and belonging was always being the other and in-between their parent's culture and citizenship (Kobayashi and Preston, 2014). A study about residents in marginalized neighborhoods across different European cities found that place-meaning was frequently built on shared memories and the living memory of their families' immigrant past's cultural traditions, rather than on the local environments (Corcoran, 2002). In the study about meanings for a multiethnic group of American children chronically ill, children valued their peers and special adults first and second their natural environments. For these children, what they most disliked in the physical environments was excessive noise, the absence of natural environments, the long distances, and physical restraints in the environments that diffculted access (Holaday et al., 1997). A study about 12-years old living in different areas in Sweden found that children in a heterogeneous-culturally and suburban community valued safety as the most important place-dimension. The children of the homogenous communities rarely named negative aspects of

the place. The discussion presents a study (Forsell, cited in Nordström, 2010) that found that being a child of immigrants in Sweden is especially difficult and perceived as unsafe when the child lacks the support of the parents in helping them to navigate the conflicts between their original culture and the values in Swedish society (Nordström, 2010).

How do environments gain meanings and become places, that might develop into attachments and friendship relations? To have a “sense of place” is about the transformation of a space, an environment in their physical settings, into a place, with sensory features and emotional bonds (Ayvazian and Moslemi, 2014). Edward Relph describes (1976) the three components of place identity to describe senses of place : (1) the physical setting of the place; (2) activities, situations, and events in the place; and (3) the meanings, for every individual and groups, regarding that environment. These meanings are created through people’s experiences and intentions towards that environment. The identity of a place is both individual and collective. Places have a collective image made by the symbols and the shared experiences in the environment. At the same time, each individual has a personal identity of a place, a product of their own experiences and memories, which will be influenced and affect the collective image of a place. Places are nonstatic: they are ever-changing, being created, and disappearing. Several ideas emerged in the literature regarding these three components and the outdoor environments and nature for children. Central ideas from the literature review about children’s relations with place are presented with the three components of place identity (Relph, 1997):

The physical settings: Environments that satisfy some basic needs will be preferable by children (Rasmussen, 2004). Evidence shows that one key factor of outdoor environments is nature and natural environments (Chawla, 2015, Kytta, 2003). According to Sudeshna Charterjee (2005) a *Child-friendly place* is an inclusive and non-discriminating environment, where children do not feel inhibited by rules, that the environment affords many favorite activities and that there are possibilities for free exploration. A child-friendly environment allows children to freely shape and control the place characteristics through children’s continuous, repeated, and reciprocal use of the territory. This use happens both in play and in the care and maintenance, promoting environmental learning and competence. Moreover, a friendly environment safeguards children’s secrets, creations, and activities from harm, thus allowing children to produce identifiable territories.

A place that supports playfulness should have good quality play experiences and provide affordances for varied forms of free play that incorporate challenge, stimulation, personal preferences, and fun (Lynch et al., 2018). The presence of many loose parts is known to be preferable for children and to provide opportunities for open-free play (Nicholson, 1972). There is much evidence that children use loose objects as natural features - as, e.g., trees, different terrains, shrubs, stones, leaves, tree branches - to add flexibility in play and facilitate conflict resolution (Chawla, 2015, Lim and Barton, 2010). A central reason is that the variety of the natural elements, that are non-determined, giving options for children to have a multisensorial and varied play that they create themselves (Lerstrup and Konijnendijk van den Bosch, 2017, Luchs, 2017, Niklasson and Sandberg, 2010, Waters, 2017, Woolley and Lowe, 2013). On the other end of the spectrum, traditional playgrounds with fixed equipment promote a defined and finite way to play, which was found in previous research to cause competition and conflicts rather than cooperative play (Barbour, 1999, Malone and Tranter, 2003).

Activities, situations, and events: children's knowledge about environments is sensuously tied to activity and movement in the present moments (Tuan, 1977). Added to the physical characteristics of the environments, social possibilities in the environment essential for how children will use and understand the places (E. Anderson, 2002). Unsupervised secrecy places, where children are allowed to construct and influence the environment, are essential in childhood to provide opportunities for creative playing experiences (Chawla, 1992, Dovey, 1990, Korpela et al., 2002, Kylin, 2004, Kytta, 2003, Sturm, 2008), something that leads to self-directed learning activities (Korpela, 1989). Places that children can create and manipulate are often those most positively and affectionally remembered for adults recalling childhood (Scannell and Gifford, 2014). Studies have found that varied and repeated direct experiences with environments make an excellent contribution for senses of place (Chawla, 1992, Manzo, 2005).

Chawla describes the following four important aspects of environments for early-childhood: (1) A limited environment that is near caretakers; (2) Secure nurturance with the world, providing a sense of oneness with the world and the world's goodness; (3) Freedom to have environmental exploration, with reliable care; (4) The possibility to appropriate and possess things, related to the beginning of self-control and the sense of self (Chawla, 1992).

The meanings, for every individual and groups: refer to the symbolic values that people ascribe to environments through their intentions and experiences (Relph, 1997). The meaning of a place could be defined by questions such as “What kind of place is this?”, “What is the meaning of this place to you?” (Smaldone et al., 2005). The attribution of meanings of a place, for children, is unselfconscious and activity-linked (Tuan, 1977). Children have a solid natural environmental understanding, with defined views of places that are affected by feelings, emotions and what the environment provides or not (Matthews, 1992), creating narratives of the places, as the internal representational level where places involve the relation of a person and a specific place, through experience (Lewicka, 2011). Children are known to anthropomorphize a favorite place, that is, to ascribe human characteristics into *place-naming*, which serves to ascribe familiarization to the environment, reinforcing positive feelings towards that environment (Korpela et al., 2002). Specific physical and social environments' experiences influence other environments' place meanings (Cuba and Hummon, 1993).

This study presents the meaningful places for the children in the Rainbow school during the observed time through this theoretical frame of reference of Relph's dimensions of sense of place. As the background, *The Socio-Ecological framework for human development* (Bronfenbrenner, 1994, Stokols, 1992), the importance of experiential learning (Dewey, 1958), and Vygotsky's Cognitive Development Theory (Vygotsky, 1978) lay the grounds of the importance of the outdoor environments children's learning experiences. The next section, with the results, firstly explores the meaning-making process of places, presented visually, through the Narrative Map, and through narratives in places illustrating the way these children experience everyday environments. Lately, the results focus on the learning experiences in the places, through the results of the thematic analysis.

6 Results

6.1 Overview

The results presented here concern the role of outdoor environment and nature in preschool children's learning and development of senses of place within the context-specific circumstances of the Rainbow pre-school¹, a low-social economic area likely to contain challenges to the children's development. The analysis has explored outdoor places gaining collective meanings for children in their everyday activities and how these environments, with focus on the elements of nature, enabled children's activity, experiences and meaning-making. The socio-ecological framework for human development (Bronfenbrenner, 1994, Stokols, 1992), and other literature from environmental psychology related to place experiences, accompany the presentations.

The results have been grouped into two sections: the first one presenting a *narrative map* (Jørgensen, 2014), and the second one presenting the result of a *thematic analysis* on the material. The *narrative map* represents children's collective meaning-making for places essential to them. The map contains a series of narratives that represent significant events for each place. The *thematic analysis* relates to how these meaningful places supported children's learning.

6.1.1 The outdoor stay and environments

The Rainbow pre-school is located in the suburbs of an urban environment in the south of Sweden. The pre-school building is located near a bustling road, making the traffic sounds part of outdoor stay in the surroundings. The surroundings are typical for Swedish suburbs with housing in multiple-dwelling units mostly built in the 1970s, surrounding a series of small built playgrounds. Nearby the school, there are also some services as groceries shop, pharmacy, and a health clinic. In various areas around the school, some very close, some in a couple of blocks away, there are walking paths and bicycle roads isolated from traffic, openly surrounded by grass fields, leading to more extensive playgrounds.

The preschool has a single building with different halls and classes assigned to different children by age. The school uses an outdoor patio belonging to a neighbor-building because its owned outdoor area is minimal. The schoolyard consists primarily of two fenced areas: the first schoolyard, the original owned, is a very small courtyard only used by the youngest children in the

¹ Fictitious-name to provide anonymity. See introduction for more information about the place.

school. The second yard used by the children and pedagogues is a larger area with open grass fields and a small area with natural elements, trees and bushes. This area does not belong to the children's schoolyard, but it is used daily, and it will be later referred to in the narrative map as “The chestnut woods”.

The whole schoolyard is fenced with the typical wiremesh metal fences that are used in Swedish pre-schools. After arriving at the pre-school, from the indoor building, children need to go through an entrance in the fences, opened by adults, to get to this second larger area. Sometimes children need to wait in queues to enter until a pedagogue can open, get into to play area, or go back to the building to go to the toilet.

In the larger patio, “The chestnut woods” is a small hill area with many trees, mainly chestnuts, and various bushes that leave a series of loss materials lying around as berries, leaves, twigs and branches. Various of the bushes are large enough for children to crown into. There is no traditional play equipment in the schoolyard. The more open areas are covered in grass. In two places in the open area, there are simple obstacle courses made of logs. The open schoolyard is always full of balls, hula hoops, boxes to collect insects, larger plastic boxes, collecting boxes, and magnifying glasses brought out every morning by the pedagogues and re-collected at the end of the day.

All of the observations of this study happened in the second larger schoolyard. I focused my observations on a single group of children – following them in their schoolyard times, in walks, and in excursions. This selection of group happened because they had been in excursions in forest environments since the previous years. However, I had opportunities to observe and interact with the other groups of younger children when groups arrived and left the school patio while I observed.

There is a ground school for older children just nearby the school, which is visible from their schoolyard's backside, inside “The Chestnut woods”. On some occasions, at least once every Friday, children have walking excursions around their local neighborhood to a local playground. I followed some of these walks from the side. The destinations of the walks vary. The pedagogues mostly chose one place between the many available playgrounds. Children were organized in a line by a pedagogue to walk around together to their destination, but also enjoying the way. In these walks, they stop at places to talk with the children about something: some examples are talking about elements found on the way, discussing what workers from the city are doing, or discussing city-skills as how to walk on the sidewalk or cycle on the street. On some occasions, children asked to stop themselves from starting the discussions or for picking something interesting they found. In that case, children take their found objects back to the school, to the “ateljé,” to maybe use in some later activity or to raise a discussion.

The Alnarp Landscape laboratory, used for excursions, is also referred to as “the forest (skogen)” or as “the meadow”. The place is a large area containing different types of natural environments, as highstand forest areas, planted windbreaks, open meadows, wetlands, and water areas with a creak and a damn. Some areas have organized planted trees in rows or patterns; others have trees disorderly growing. The vegetation is varied according to the different environments. Paths are going through the whole area, forming different loops. When visiting the site, they follow a schedule. They arrive by bus and the children have a gathering. After that, the children are divided into two different groups that go to two different settings. While walking, they are allowed to play, but they are instructed to have respectful behavior and treatment for nature and their friends., to

not step or torture animals or insects, not purposefully break a part of a living tree. They are also instructed always to stay close enough to an adult. Around midday, the two groups meet again, and they have lunch together. After some hours, it is time to travel back to school. Older children in the class are quite familiar with the place, while the youngest ones have just been there once.

6.2 Narrative maps

In the following section the overall result of the drawing activity is presented, followed by the narratives for each landscape presented in two maps. These are stories about the Rainbow pre-school children and how they explore their surroundings. It is about how these children play in particular environments and how these places serve them possibilities to make meaning and develop senses of place. Firstly, the schoolyard and nearby areas will be presented and then The Alnarp Landscape Lab. The numbers beside the place names are the chapters where the narratives of places and presented.

6.2.1 The schoolyard and the neighborhood

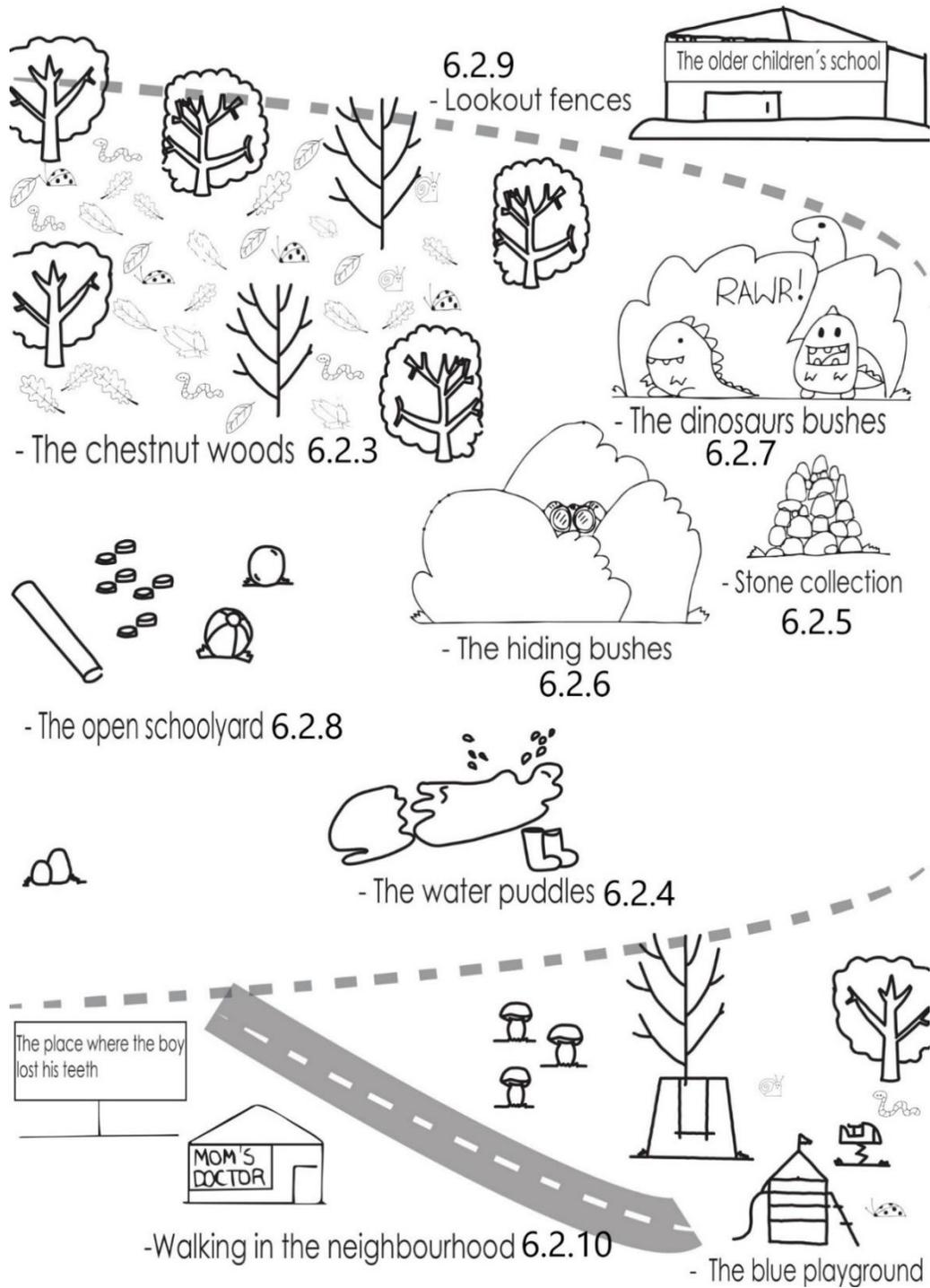


Figure 2: narrative map 1, the schoolyard in fences and local environments.

6.2.2 Drawings of favorite places

All environments depicted in the children's drawings of favorite places were places that had been visited during preschool days. No places depicted showed environments visited during their lives outside of pre-school. Natural elements were present in 86% of the children's drawings of favorite places. The kinds of places depicted were trees, forests, grasslands, and playgrounds. Elements in common were trees, bushes, mushrooms, flowers, water, the sky, or play equipment in playgrounds (slides and swings). A description of every drawing can be found in Appendix E.

In the schoolyard, the most popular place depicted had 61% of the children's drawings: the trees in the garden and "The chestnut woods.", which most of the children called "the forest (skogen)."

23% of the drawings depicted "The open schoolyard," including elements as grass, rain, rainbows, the sun, and their friends, as well as the wooden benches.

15% of the drawings depicted the bushes as central elements.

When asked to draw their favorite places, 81% of the children drew natural environments, while 27% drew playgrounds (one located in a forest).

The fact that children chose many places with nature and some playgrounds, depicting the play equipment, is in line with other studies showing children's recurring preference for outdoor environments with natural elements (Chawla, 2007, Hart and Moore, 1973, Luchs, 2017, Titman, 1994).

6.2.3 The Chestnut woods

6.2.3.1 Attention to novelty in *The Chestnut woods*

On one autumn day, two boys guided me on a tour of the "funniest things (roligaste grejer)" in their schoolyard. They were all located in *The chestnut woods*. They do not seem to find the question hard to answer: they take me straight to a slightly bent tree, in the chore of the many chestnuts in the area. They explain, while demonstrating, that it is an excellent place to sit, and that they are the only ones that sit there. Next, they show me something white and strange in the ground, maybe a fungus, by a tree. "It is strange; look at it!" (Det är konstigt, titta!). They keep moving and guiding me inside one of the bushes, an open space offering the possibility to hide, where they can sit and watch their pedagogues for far. After that, they take me to see the lookout fences, where they can stand and watch people passing by. Finally, they take me to a small and thin tree, which they start shaking energetically: "We shake this tree a lot, it has never fallen; take a picture of it, Amanda." (Vi skakar på det här trädet mycket, det har aldrig trillat, ta en bild på det Amanda!). They stay there and shake the tree for a while, apparently forgetting that I am there for some minutes.

These two boys showed the best places in their schoolyard by their very own landmarks: a slightly bend tree to sit, a strangely-looking element to look at, a stuck to sit, a shakable tree. Because children are more sensuous than adults (Tuan, 1977), they find qualities in their favorite elements in their environment through the tactile, visual, physical characteristics of these elements. Their chosen favorite elements are “receptive, absorbing and experiential ” (Macpherson, 2005: 98Bartos, 2013). Such embodied affordances (Heft, 1988) open up possibilities for children. Interestingly, these children, among these banal natural elements in adults' perspectives, paid attention to unique characteristics that made them special to them. Children are known to find novelty and excitement through their constant attention to detail in the environment (Laaksoharju, 2020).

One of the main ways children use and experience places is through their physical engagement with natural elements. Playing with the different elements allows children to engage with their environments in many ways. *The chestnut trees* is an environment that continually changes according to the seasons. In autumn, trees offer leaves and chestnuts, worms in the soil, and mushrooms, all of which become significant affordances for play during the observed period. In many situations, children became aware of environmental changes concerning seasons through the environment's details. Places are non-static constructions (Seamon, 2013), and the careful attention these children had to the changes in landscapes also gave them genuine knowledge of how the seasons unveil, learning that environments are ever-evolving and changing. This is a type of bodily engagement with place can enable a sense of rootedness to place (Tuan, 1977).



Figure 3: chestnut trees in the called "Chestnut woods," in early autumn, are favorite environments in their schoolyard. In the second picture, most of the children's as their favorite place in the schoolyard, in one of the created drawings, with many elements around: bushes, flowers and trees.

6.2.3.1.1 Multisensorial engagement with worms

Attention to small creatures was the primary interest for all children, even in areas with play equipment. Most of the multisensorial attention to specific details to the environments happened in these interactions with worms, snails, and insects: touching, smelling, observing, in which children

seem to get a sense of fascination and excitement. This environment's richness in bushes and trees was the key to these possibilities. These creatures were later used by the pedagogues indoors to create thematic pedagogical activities.

The fall soil in *The Chestnut woods* is very humid. Digging in the mushy and wet soil to find worms and snails is a favorite activity. One boy, after sitting for a while with his group of peers, all quietly digging with small twigs, walks carefully but excitedly towards one pedagogue with a worm in his open hand, saying out loud: "I found a worm, I found a worm! (Jag hittade en mask, jag hittade en mask)". While the other boys in the group arrive to watch the animal moving in his hands another child brings a big yellow ball to the group and puts the worm on it. Many children join the area with curiosity, and all can easily watch and observe, in a circle around this yellow ball. Some children pet the worm carefully, feeling the texture of the animal. A boy remarks: "we must be quiet because the worm is sleeping (vi måste vara tysta, därför att masken sover)."

After some minutes observing, children divide themselves into groups and run all to different areas in the chestnut forest. Finding worms becomes the collective activity of all children, where small groups sit in circles, with small twigs, digging in the soil and looking for worms, to be later brought to the pedagogues with the "yellow ball-table" and to insect-collecting boxes, to create a "homes for the worms in the boxes (originally said in English)." They examine the insects with their hands, watch, feel them with their fingers, and are proud to bring them to the pedagogues or tell us about these worms unique qualities – their sizes, smells, or appearances.

For the following week, children continue interacting with worms everyday with joy and excitement. Not only in school but also when they are in Alnarp or when they go to the playgrounds.

There is a behavior mapping coding set proposed by Cox (Cox et al., 2018) to examine children's interaction with wildlife. It offers codes of interaction with wildlife that were almost all observed by these children: observing, handling, searching for, rescuing/caring for, talking about wildlife. The only non-observed code was that children would try to harm or kill an insect. In general, children were observed carefully engaging with the environment. Children knew where to find the worms, dig them, and engage and closely explore their senses, finding ways to have fun themselves.

Children have an innate interest in multi-sensorial interactions with the world around them (Merleau-Ponty, 1982). Humans seem to have a specific fascination with wild animals, and while studies have shown that there might be psychological benefits from interaction and connection with wildlife in childhood, this is a topic that has rarely been researched (Cox et al., 2018). A complex system of many sensorial stimulations lays the root of memory (Mather, 2006). This type of experience, of being present in the body, can attach the child to the present, making possible the collection of memories forming their developing sense of place (Relph, 1976, Tuan, 1977).

6.2.3.2 Affordances for creative play and learning in The chestnut woods

In *The Chestnut woods*, children simultaneously create various play situations, social situations with their peers, or alone. Even if relatively simple, the natural and somehow varied environment, with trees, bushes, and grass, provided various materials giving many possibilities of use and play simultaneously, alone or in groups.

On sunny autumn chilly days, I observed the children from far. The leaves are falling from the trees in the ground with the wind. As soon as the school day begins, straight after arriving in school, most children go outdoors. Many children go straight to this natural and less-managed wooded area with chestnut trees. The place, day after day, offers many possibilities for activities and new ways to play. Here children can find many natural objects – branches and twigs are prevalent artifacts for play. Some use them to represent their fantasies: pens to write in the soil, guns to shot at war trees, brooms to clean their house. A boy, holding a twig made into a cane, preaches a set of rules to a sitting group of around five listeners.

I walk around and watch a boy playing by himself, picking many materials around stones, sticks, chestnuts. He puts them all in his little plastic box. He carries his box to a place where he can sit alone, undisturbed. He takes all of the collected materials out, one by one, and uses his box to try to fit all of these stones and sticks perfectly inside, concentrating on finding the perfect combination of elements to fit in such a way that there was no space inside the box. In a case of trial and error, the boy gets closer to complete his puzzle. He tries and holds the stones and objects until they fit in, patiently and alone.

A girl has been throwing twigs up and away by herself for two days, at least. She always stands by herself, between the trees, taking twigs from the ground and throwing them back and forth. This day, as I observe, she approaches me with her twigs to talk. She throws a tree twig up and tells me to look how it comes down. She shows me that when she throws it horizontally, it falls horizontally. She explains, demonstrating at the same time, that the twig falls in a U shape both if she throws up and forward and if throwing from her back. The place where the twigs fall is different, but the shape is the same – she tells me. She continues; when she jumps, she also comes back down, just as the twig falls. Moreover, when she jumps and holds the tree, sometimes she can make twigs fall from the tree. She tells me that sometimes they fall by themselves, but she has learned these days that she could cause twigs to fall. She uses this method to show me that leaves fall “like a helicopter,” in a movement back-and-forth, which is different from the movement of a thrown twig.

These various activities are likely to create a healthy place meaning for these children. Here they have a variety of creative and complex play situations. They are attentive to the possible artifacts that can be used to play in representing something else; they engage with mechanical and sensorial games with these found objects; they test possibilities. In many examples, through continuous, repetitive, and alone engagement in play, children had experiences where they seemed

to develop learning. In one of the situations described here, a boy used a series of natural materials similar to puzzles or building toys, where he holds and tries objects until they fit in, testing proportions and sizes, solving the problem to fill them inside the box. In the second example, with twigs found in the ground, a girl could test particular possibilities and arrive at certain logical conclusions. By comparing the new ways of throwing twigs to the ways before, this girl builds understandings that she could demonstrate to me herself.

Natural elements of the environment, as the twigs, branches, and stones in these examples, defined as loose parts (Nicholson, 1972), offer various opportunities for creative, self-directed play for children. Access to loose natural materials is vital for children's agency to play in a varied manner. Environments that offer many possibilities to creative expression that loose parts can achieve are preferable to children because they allow these opportunities for self-directed play and learning (Chawla, 1992). This is in line with Korpela (1989), that presented that self-directed learning can be observed if children play freely.

6.2.3.3 Adventurous leaf blowing in The chestnut woods

In this session, we see how children take the leaves in self-organized groups, expressing proudness for being able to support the work of cleaning the leaves from the schoolyard.

During some days, a man, "the leafblower", works at the schoolyard to clean away the autumn leaves. On the first day, children engage with him playfully, playing with their bodies with leaves' support, engaging with their bodies in a series of movements adventurously. Children engage in a series of ways with the leaves: they jump, throw leaves up and at each other; "Swim", bury a child, roll and crawl around the leaves. They also play together with the adults: they run from the leafblower, playing war and hiding between trees. From the side, a group of two children take leaves in a walk and use them to mark their way to another place.

On another day, they happily work together with the leafblower, supporting cleaning. They all hug considerable amounts of leaves and fill the shovel together until the leaf blower's lorry is filled. The leafblower walks around to the other side of the fences and goes inside his open lorry, and presses the leaves by walking on them, providing a little show to the children. Almost all the children stay by the fences, some hanging and climbing, some supporting their bodies in the metal fences, watching with interest. When he leaves with his car, the children all scream goodbye, waving.

These interactions go beyond the children themselves. Purposefully, children support the worker tasks while also creating different play situations, moving in various and new ways through the leaves. The task to clean the school becomes the group adventure and challenge of all. A sense of mastery and adventure is significant for children to have experiences that will make places meaningful (Morgan, 2010). Children's opportunities to explore and actualize, learn about the environment by their competence to shape the physical characteristics, and participate in care and

maintenance of the special places are vital aspects for children to develop a friendship with places (Chatterjee, 2005).

6.2.4 The water puddles

6.2.4.1 Learning to co-exist in *The water puddles*

Water puddles, which occasionally appeared in the open schoolyard paths after it rained, were recognized by the children and re-used on many occasions when playing outdoors. Children told me and showed me various times that these important places for children to play with. On many days, whenever puddles were available, they were used vastly by children. Sometimes children jumped, freely or in games with rules, as the one described. Sometimes they found stones or sand, which they played building structures. Sometimes they hid their objects in the puddles.

One morning, a group of five children starts jumping on newly formed water puddles by a path in the open schoolyard. They discussed which of the five now available puddles is the best to play. The criteria to decide is the degree of splashability: the loudness of the sound of “splash” when children jump on it. Deciding upon a water puddle, the children form a circle and decide the children who will jump in the puddle. A girl starts jumping, while children scream together: “higher! (högre!)”. She jumps again: “more! (mera). The jumping game, that starts simple, soon changes. Two children soon establish rules to be followed by all, as off: follow the line, jump as hard as you can, and change the way to jump! !). All children take turns jumping, one by one, waiting for their own time to go. Some children jump diagonally, or in hopscotch, or around the puddle, avoiding the water. Others count the jumps out loud, clapping, comparing their performances with children that went before. Children laugh, applaud, and try to find a novel way to move around in their turns, different than their previous colleagues. They find new patterns, new ways to move, involving a combination of jumps in different ways, crawling, dancing. Upon a time, there are too many children in the same puddle. It has crowded, and there is no longer space for children to see and stay around in their circle. They divide themselves into two new groups, continuing their games, each in their own puddle.

This is an ephemeral environment available when raining. Still, this was an important landmark for these children. Children were aware of these puddles' existence even when they were not present, understanding the environments' changes. The phenomenon of place is not static, as places always change and evolve (Seamon, 2013). An environment that permitted that water puddles appeared was a physical characteristic that afforded the interesting interactions to happen in this place. Through reciprocal and continuous interactions with everyday environments, children can develop environmental competence (Chawla and Heft, 2002) and learn to co-exist in a shared world (Chatterjee, 2005).

The children organized games that started with “a splash” and were developed in more complex ways of playing. During these games, children interacted with their peers creating rules that defined turns and order, enabling everyone to participate equally. These characteristics, interesting open affordances (Heft, 1988, Waters, 2017) and social possibilities (Moore, 2017), are essential for children to create place relations positively.



Figure 4: a place where the most popular water pond was located, with many stones brought in by the children.

6.2.5 The stone collection

6.2.5.1 Actualized affordances in *The stone collection*

This narrative is about children’s collection of stones. This is one example of children personalizing their environment with natural materials they found around and making it their own play elements with manufactured tools.

A group of boys, coming from all around the schoolyard, sum up in a group in this bush-protected area, carrying stones. Recognizing that I was watching them, the boys invite me to join and tell me about their stone collection.

Showing the collection to me, a boy looks between the stones, moving them with both hands, takes one up and say: “Look, I have found THIS stone! (Titta, jag har hittat det HÄR stenen.)” He points to where he found the stone on his hand. One after another, the other boys point to all of these different specific areas in the schoolyard. They explain to me how the collection is the product of arduous work. This considerable pile of stones has been

collected by the children around. They were not easy to get because the schoolyard did not have many stones lying around. Children collected these digging in the ground with fragile twigs for an extended time of days, maybe months – according to the children themselves and their pedagogues. There are many stones, various colors, materials, sizes, and even smells – a child even shows me the smelliest one.

The boys play with these stones in a series of ways. They play in groups or alone, using the stones in various and creative ways that involve observation, breaking, creating games of different nature. They organize schemes to break stones in half with other stones. They observe and examine the stones in many manners. A boy explains to me that two stones are unique because they smell funny. Their interest in stones has even started a learning project indoors with the pedagogues, where children got to observe the broken structures of stones with a microscope's help. These boys might have created this collection, but all children benefit from this well-known pile that stays somehow hidden. When I arrive one morning two girls are proud to show me figure of stones they have created here (Figure 5).

Free play, with opportunities for children to create and interfere in the environment without adult interference, resulted in an exciting exercise. Available time and freedom of activity are known from the literature to be essential for children to play with creativity (Kylin, 2004, Sturm, 2008). Places that children can create themselves have been found in research to be the ones that adults will recollect from their childhood (Scannell and Gifford, 2014). Children's need to find and create their unique places is well documented in the literature (Cele, 2006, Kylin, 2004, Hart, 1979). 2009).

Furthermore, the stones collected became available for other children to play with, as in the other children's examples that created the human shape with stones. This collection of stones could be understood in the concept of *Actualized affordances* (Kytta, 2006), that is, when children can have their creations somewhere, protected from harm, these will be used by other children, that will be able to create new games and play. As pointed by many authors from the literature of place relationships, making their impact in environments and territorial changes is critical to fostering place meanings (Chatterjee, 2005, Chawla, 1992, Scannell and Gifford, 2010).



Figure 5: a human figure created with stones by the children during play.

6.2.6 The hiding bushes

6.2.6.1 Safe havens in The hiding bushes

The many different bushes around the schoolyard afford children many different activities. The bushes give children fruits and flowers to pick, count, observe, manage, throw, and look at. These provide many play opportunities, like using the rose berries as the ingredients to bake a cake or feed the imaginary city birds sustained by some children.

The *hiding bush*, is an environment used by many children in many situations, in groups or individually. The hiding quality of these bushes is something that many children have introduced to me as one of the most remarkable qualities of their schoolyard. Children repeatedly show me that the bushes are an adult-proof tunnel, a right environment because only children can crawl inside and play. Here is a place where I observe many children playing quietly, alone, or in small groups. One child, in a drawing, even said that this bush was “another child’s support home(“Det är x stodhem)”. This is the only place where I see children speaking with their peers in their mother tongue. Some children only speak with their friends when inside these bushes, where they all can talk, laugh and look around; while still grabbing things from the ground. Here is also the place where some children recur after conflicts when they do not run to pedagogues for support. I see children crying for some minutes, alone, before returning to play with their peers.

Places that children use frequently and nurture affection will likely foster attachment (Chawla, 1992). The hiding qualities of environments are known from the literature to be essential for children to feel creative (Kylin, 2004, Kytta, 2003, Sturm, 2008). Opportunities to stay away from adults, through happy memories of the promotion of calm and stability, is something positively remembered by adults from their childhood (Chawla, 1992). Hiding spaces is a physical setting that is known to be preferable in childhood (Kytta, 2004).

On another point, the presence of adults from far, in this case, the pedagogues, is also essential. In the bushes, children can still see the pedagogues' presence, where they feel unseen. The presence of a secure adult figure is significant to provide opportunities for children to feel safe, to recur in case of distress, and then, feeling better again, to explore environments (Morgan, 2010). The feeling of safety is vital for positive contributions to place-meaning (Manzo, 2005), which significantly relate to positive attachments to place (Chawla, 1992) and reciprocal relationship of friendship with place (Chatterjee, 2005).

These bushes could also be used as one security support, where some children go when in distress situations. Children sometimes used environments quietly to address emotional conflicts as a safe base used to return to before exploring the world (Hart, 1992). A resourceful positive childhood attachment is suggested to happen in places where children feel secure, satisfied, and happy in the environments (Chawla, 1992). Unique places are known to work for children as *safe-havens* to achieve emotional relief (Korpela et al., 2009, Scannell and Gifford, 2014).



Figure 6: a picture of the hiding bushes. Note how an opening forms a gate where children can enter. On the right, a drawing depicting "The chestnut woods" as a very large hill, with trees on the top. At the left side bottom there's a bush. A child, while drawing, said it was "a child's support home (xxxx stödhem)".

6.2.7 The Dinosaur Bushes

6.2.7.1 The in-between space in the *Dinosaur bushes*

Between the many bushes in the schoolyard, all located in near The Chestnut woods, there is a bush that is called by the children as the "Dinosaur bushes." Sometimes, the whole group plays together a dinosaur game in this tall bush near the fences. There they meet, in groups, screaming: "ahhhhhh!!!! Raaaaawww!!!!". Some put their arms back, like a T-rex would do, and move from a side to the other. Sometimes they are there in smaller groups, and sometimes narratives are created around the individual dinosaurs. Most of the talk during this game is in English, where children scream, "I am going to catch you!". I "am going to destroy it."

Bushes in the schoolyard became significant environments for these children according to their possibilities for action and play and the many previous situations that created collective meaning. There were many fantasy narratives created and lived through repetitive dinosaur play in the area. English was a language often used during play, even if the language was not spoken at home for most of these children. This kind of play is considered a discursive agent from children's play cultures, where children reproduce media activities (Corsaro and Eder, 1990), including routines

thematic plays connected to a general idea of how to play based on references for the children (Änggård, 2016). Many studies found that when children play in nature, fantasy and symbolic play are more common than in playgrounds with defined content (Fasting, 2012, Fjørtoft, 2004, Fjørtoft and Sageie, 2000, Mårtensson, 2004a, Waller et al., 2010, Änggård, 2017). This is related to the meaning-making aspect of the places, which is a central characteristic of place meanings (Relph, 1976). Creating narratives for environments supports children's understandings of environments and positive feelings about places (Korpela, 1989).

The dinosaur bushes are, in their natural context, simple bushes. This environment gains the collective meaning of dinosaur territory by the children's meaning-making. These called "in-between" and "on-the-go" areas have been found in the previous research to be the most attractive for children to play in a creative matter because they have no defined function (Luchs, 2017).

6.2.8 The open schoolyard

6.2.8.1 Movement and freedom of choice in *the open schoolyard*

The school's open environment is a large area that enables children to be in many different spaces, doing many different activities simultaneously, with many possibilities to join other groups when they feel like it. During free play in this area, children expend hours of self-directed activity, important for the emergence of discovery and free play moments. Children did run around all of the open areas in The Open Schoolyard.

Children play tag, run and laugh. They use wooden benches and the stubs (Figure 7) as obstacles to jump over and try their balance over the stocks and benches. Movement is also afforded by the many toys brought in by pedagogues: the children walk with the hula hoops around their bodies, hold up the hula hoop for another boy to jump. Some sit at giant balls, falling and coming up again. Many play football around the center. A boy, running by himself, looks at his shadow at the sun. He laughed and then went in front of an adult, forming a larger shadow than before. He plays with the teacher and his shadow by simulating to have wings with his arms. He looks at the shadow and laughs.

One day, after balancing with the benches, a girl goes away to *The chestnut tree* area and brings out a sizeable wooden branch to the open grass. Then she tries her balance on this branch, holding on to the metal fences as a support to not fall.

There were some adult-initiated activities. Sometimes pedagogues would give instructions for children to have a project outdoors: collecting something from the forest and organizing in a certain way; running in a particular manner; photographing outdoors; collecting a specific element to look at the microscope, are some examples. In some days of my observations, some parents were outside with the children, mostly mothers, following children and pedagogues during play for some hours.

Children are known to use and understand the environment through activity and movement (Tuan, 1977). The size of preschools is a crucial physical setting that is very important for children's ability to play and move (Mårtensson et al., 2009). Children are known to be more active in preschools with a large outdoor environment rich in trees, bushes, biological variation, and different topographical levels (Boldemann et al., 2006, Grahn et al., 1997, Mårtensson, 2004b, Wells et al., 2018). Because these were all loose parts (Nicholson, 1972) that become tremendous and various affordances for these children, this enabled freedom of choice of activity and the possibility of moving them away, alone or in groups. I did not observe a single child twirling with a hula hoop; instead, I observed a series of creative uses. Pre-school children happily create bonds with their environments if they find secure nurturance to explore and find attractive elements to play with: children's self-affirming and enticing own world (Chawla, 1992).



Figure 7: The open schoolyard with sitting logs.

6.2.9 The lookout fences

6.2.9.1 Connecting with local environments through *The lookout fences*

Children spend much time by the fences that surround the schoolyard. They stand by, looking towards the out world. Sometimes they see their parents or other friends' parents or siblings and interact with short and friendly chit-chat people. Some of these people seem to pass every day, becoming a part of the children's routine.

There is the other school across these fences, where some children go when they get older. Sometimes, during playtime, they can see their older colleagues playing and wave hello. Three boys tell me that the other school's looking point is, indeed, one of the most fun places in the school. They can see old peers from the years before, sometimes even say hello and hear their response.

The fences, created to separate the schoolyard from the local area, offer a safe way for children to access the neighborhood around them. This place offers many events by the passers that are important for these children to connect and understand their locations. There they can keep some contact with their peers from previous years and also interact with people around their neighborhood, creating, in that way, a narrative understanding of the world around the school. This seems to be a very positive understanding of the social context around their school area, which is provided by the feeling of safety that children have by being inside the school and the many positive experiences they have the passers – which are characteristics associated with the creation of positive relations with place (Manzo, 2005).

6.2.10 The local neighborhood and the Friday playground

6.2.10.1 Understanding the world while walking to The Friday playground

Walks around the neighborhood were a very positive event in the week of these children. Many of the places visited in their local neighborhood and in the excursions that turned out to be the places cited by the children as their favorite recognized environments were visited with the schoolyard as a starting point. During the walk through the neighborhood, children recognized their local environments amicably and positively through a series of landmarks defined by events in those settings. Another way of recognizing environments was through familiar association, representations of their parents, for instance.

Children look happy when a pedagogue says they are going for a walk. “Friday playground! (Fredaglekplats!)” they recognize. In my observations, the pedagogues typically decide which nearby place they would go into their weekly walking excursion, but this time they were democratic. Children got to vote to their destination. They all chose “the blue playground (det blåa lekplatsen)”. Children seem to enjoy these excursions and one of them is a favorite environment in the drawings (Figure 8).

We take a long walk to the playground across the neighborhood. In the way, children point and tell about many elements in the way: the supermarket, “mummy’s doctor”; “my sibling’s school”; “the place where a doctor brushed my teeth and said I had not brushed my teeth well,” “the place where I lost a tooth some times ago,” “the place where I saw a fluffy dog one time.” There is the sound of a machine working behind some bushes; children say that it is probably the leafblower from the Chestnut woods.

At a point, we meet a group of firemen and their car; some children ask what they were doing. We all stop to look, and the men tell the teacher that they are training in the

area. On the way from there, some children talk about the clothes that the firemen had. “They also had an overall, like us, but theirs was red (De hade också en overall, som oss, men det var röd. Men de hade också en hjälm)”.

We spend some time at The blue playground, where children play with the equipment. After some short rounds in the other equipment, all children move to an area with climbing material. A pedagogue sets rules and a line for climbing because there is a conflict between children who want to be there. A child hangs upside down, but the pedagogue says they are not supposed to do that because it will take too long and there will not be time for all. Not everyone can climb; some have difficulty and quickly give up. After a while, most children leave the area to other play equipment or to play with the natural materials, but some girls stay. They do many different kinds of acrobatics, trying new ones.

In the playground, children had some play opportunities in the equipment, according to the designed play experiences for each piece of equipment. Some of the drawings depicted this playground as an environment to play and meet with friends at. The schoolyard made up the starting point for the children to experience their surroundings, offering a series of specific environments around.



Figure 8: Some children have chosen to draw a playground as their favorite outdoor place.

6.2.11 Alnarp – The forest

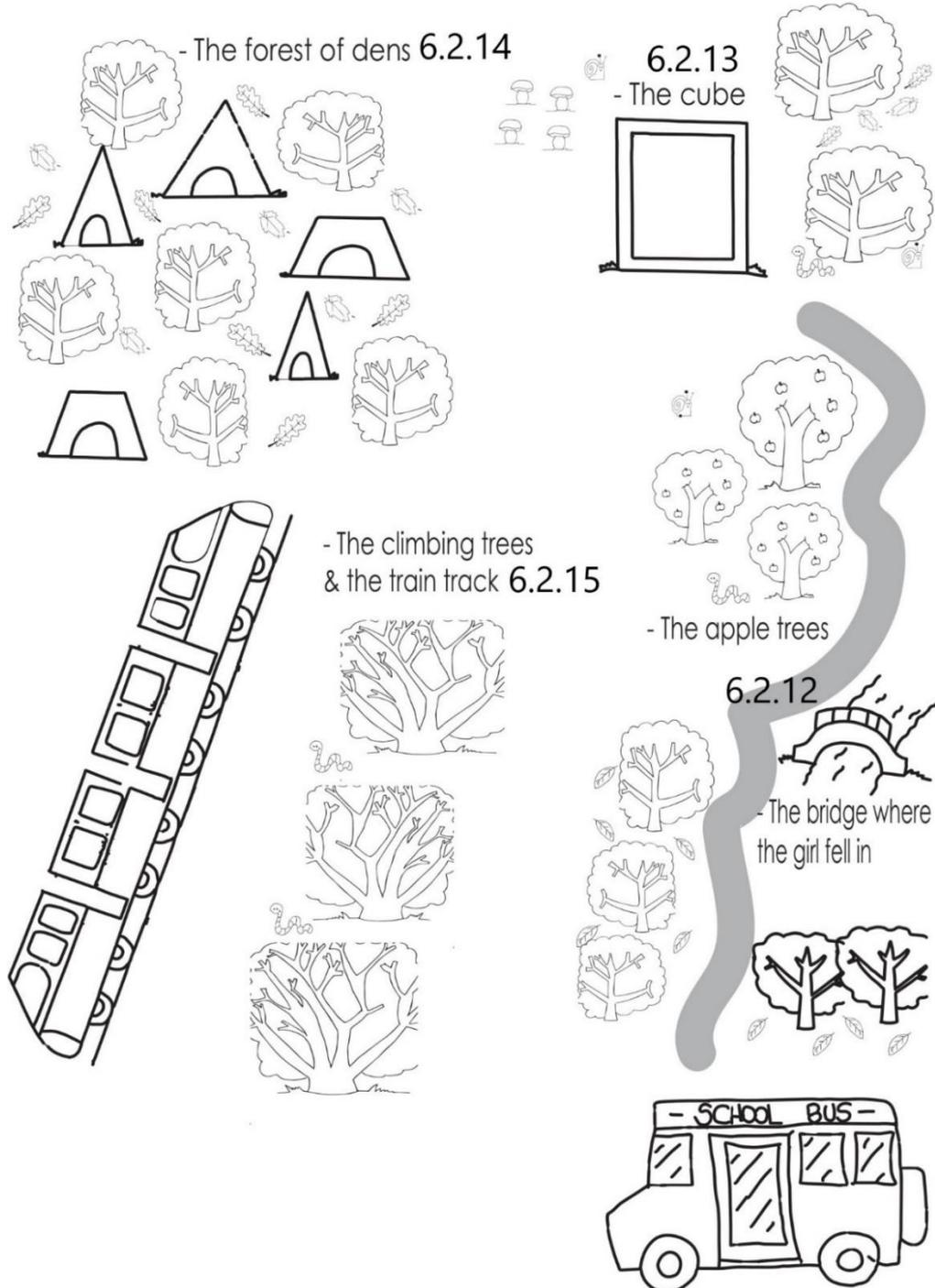


Figure 9: the narrative map 2, the Landscape Laboratory in SLU Alnarp

There is a mural, shown in Figure 10, where there are some occasional pictures from their visits, most that the children took themselves. Always a day or two before going to the Landscape Laboratory at SLU, the pedagogues prepare the children for the excursion by having a short meeting. They start by asking about Alnarp, but children do not recognize the name. Teachers ask the children which animals they can find there. They answer and guess: “Elephants? Monkeys? Wild boors?” They then project pictures from their previous visit. At first, children look at the landscape pictures with the forests and trees but do not recognize the place, and look quietly, almost bored. When they see a picture of a den, a boy screams: “the forest! (skogen)” and one girl says, snails (sniglar)! Two children jump on the floor and says, a frog (en padda)!

Children continue to add comments and details. Pictures of animals, a train passing and a climbing tree, cause the most engagement. “I have eaten an apple (Jag har ätit ett apple),” “I have hidden myself there (Jag har gömt mig där)”; “I have found a snail there (Jag har hittat en snigel där)”. One girl tells about where she fell from a tree.

The visual and sensory material from the different visits reminds them about their many embodied experiences from the landscape. Looking at the photographs brought up the meanings of place through children’s memories of experiences and events that occurred before. As Relph (1976) phenomenologically mentions, places become meaningful through the layers of experience that create memories.



Figure 10: A mural about Alnarp in the preschool. The second picture has Alnarp, represented as a favorite environment for one of the children, with flowers, mushrooms, water, and trees.

6.2.12 Walking and sensuous engagement in nature

Children had many small interactions and small play activities while walking around in Alnarp together with the pedagogues.

Following the children in a walk during an excursion in Alnarp is a very dynamic movement. Some children go fast, walking, running, and jumping. Some children go much slower than the others, carefully interacting with many findings in the way. Many children pick small artifacts that they examine, observe, and sometimes use for something. A girl picks many twigs to make a fire - she shows, scrubbing a stick against another. A boy cares a

stick for some time. He sees this giant mushroom, so he sits and makes holes around, forming a pattern of circles. A pedagogue has a microscope camera, and the children can take small objects and take pictures of them. These children go between the areas, looking at different grounds, to find snails, small stones, or other objects to look at with this magnifying camera.

In their first visits to Alnarp, children's uses of affordances were limited because of feelings of fear and insecurity. That changed after some visits, where children became interested and curious; instead, when children gain security feelings in environments, they can explore. One of the smallest girls was on this occasion in Alnarp for the first time. She holds the arms of one pedagogue during the whole time walking, holding herself closer and closer when spotting spiders. The pedagogue explained that children were generally like that in their first visits to Alnarp, scared of the environments' small details. Nevertheless, as I could observe by the other children around, they got used to these previously scary details. They became even curious about them after some repeated visits there.

During the visits walking around with no specific goal offered the children many opportunities for engagement and environmental learning. Walking in landscapes turns them dynamic: "the landscape ceases to be understood as static and becomes instead interconnectivity of eye, body, and land, a continuously emergent perceptual and material milieu (Rodaway, 1994pg. 177). The walks around allowed children the freedom to move through different landscapes, engaging with various elements in different manners. The senses of adventure and freedom of outdoor environments and nature are crucial for childhood places becoming important for adults (Chawla, 1992). There is a process of place identification going on during the visit where children, identified places, the place where they ate apples, the place where a girl fell from a bridge, the place where they could climb, and the dens' place. These elements of experience that identified environments, worked as a landmark in this space for the children to identify their environments and create a develop environmental knowledge about the Landscape laboratory. Children are known to create internal narratives, through events that happened before, to support their environmental knowledge (Lewicka, 2011).

6.2.13 The cube

6.2.13.1 Creating narratives in *the cube*

The cube is a large black structure of wood, standing in the center of an open grass field. Surrounding, there are many different landscapes: a field, areas with trees, water, in this relatively large area.

When arriving at this area, children run directly to the wooden structure. On one occasion, I observe that while children play and run in circles around the cube, teachers sit from far and watch. Some boys sit inside the wood structure and speak to each other, far

from the adults. They move in varied ways on the structure, marching around and jumping. Some of the children play classic outdoor games such as the Swedish child game “dunka”, hide and seek and tag.

Some children explore the area, running around the many small environments. Some boys disappear into one area with bushes and trees for some minutes, where the pedagogues still they can see them, but not what they are doing. They return with apples around their hands. They look at the apples together and say out loud: “this is green...this is yellow (det är grönt...det är...yellow.)” They taste the fruits after saying the color. A boy tastes a fruit and says that it is not an apple. A teacher asks: but what is this fruit? The boy tries again and thinks. He moves the fruit around his mouth, touching his face, and says: “this is a pear, (det är päron!)”.

A girl is walking around by herself in one area and looking at the ground. I approach her, and she tells me that the water that was there before had dried. She tells me that she remembers when they were there the time before. She then explains to me why the water dried: “Maybe have animals come around here and drunk all of the water.” Kanske har djuren just kommit här och druckit allt vatten.” She continues, after staying in silence: ”When it rains, do you think that the water will be back? (När regnet kommer, tror du att vattnet kommer tillbaka?)”.

In this situation, pedagogues were able to allow children to play freely while observing from a distance. The block structure served as a landmark that children used as place to sit and talk, draw or read, play, or find others after being around in the other environments. Children did not run far or disappeared into different environments, but they all interacted with different activities and explored in a visible distance from the pedagogues. Children were able to choose themselves their activities around the area. Interested, children examined elements from the ground and from the trees, found insects and worms, and looked at the environment around them. They observed these elements and sometimes started discussions about them, learning more about what they were, creating a hypothesis about what they were related to, connecting them to other elements they have found in the schoolyard.

The combination of the open landscape and the cube's reference seemed to support children to play many traditional games. Some children played together, transforming the cube into the central element of their game. In hiding and seek, the cube was used for a place to keep the found children, and the landscapes around, with the many trees, became places to hide. In the tag game, the open place allowed children to be fast, while the open environments allowed them to crawl rapidly away from their seekers. This area has characteristics of preferable environments for children, according to the characteristics of preferable environments for childhood attachment by Chawla (Chawla, 1992). The environment provided security to the proximity to pedagogues. Besides, we could suggest that the environment provided belonging by the possibility of all children being able to play freely and participate in the activities around the cube. This environment also gave enough possibility of exploration, provided by enough variation in the landscape and places to explore, which children could access freely.

6.2.14 The forest of dens

6.2.14.1 Self-directed learning in *The forests of dens*

In some wooden areas in the Landscape Laboratory, there are many dens, in various sizes, built by logs. Some are small, and some are large enough to fit two adults inside. These forest areas have deciduous trees, and there are many laying logs and twigs around. The children always request to go to these two areas, where they build, climb, collect twigs and logs, compare log sizes, and play police-bandit with the dens as prisons (many times where all adults would be put in prison, including me).

Two girls walk around with a log larger than the two of them and test the log against trees to find a place to hang it. They find a spot between two trees – where they put the log horizontally. They try with their weight to see if it stays in a place when they hang with their arms. It is not that stable at first, so they move the log a couple of times to different locations. When they finally find the right spot, a girl holds herself on the log to do some acrobatics around the log, rolling around. After some minutes, there are many children around; some looking, some engaging. The girl then takes the log down herself and tries to put it in another way in the same tree. She does this a couple of times, with the support of four children, creating new challenges, harder or different than the first ones, using this log as an acrobatic tool.

I stand there observing from a distance and take my fieldnotes from these scenes, drawing the children in the dens, and a girl approaches me. She asks me to explain what I am doing, and I explain that I am taking my research notes as a drawing. She asks me if she could draw it to me. So I lend her my book and ask her to draw what she sees in place. I explain to her that I will use the picture to remember what happened. She drew trees and the dens, some children climbing, telling me the whole group's name while drawing, which you can see in Figure 11. On the trees' side, she draws a human figure with a heart in the dress, larger than the trees. She tells me that figure is her pedagogue.

This environment has a physical setting excellent for children: many loose materials (logs and leaves), plenty of actualized affordances (the already built dens), and much space. There are also enough dens for all children to hide in secret places, which are essential for creative play experience (Sturm, 2008), as already discussed. Secret places supported social experiences between all children by providing places for children to sit inside and speak without being watched.

Using the tools available, children created opportunities to develop play equipment. In that activity, they tested their physical abilities in the ground: how much could the trees hold? How could they move in new ways? They tested how they could build their playing tool, improving the structure and changing the way, forming a piece of new acrobatic equipment that also forced them to adapt their movements, increasing the degree of challenge in the activity. These natural tools, all loose materials around, afforded children to built this complex and exciting play experience.

The social and physical is intertwined in environmental experience (See Figure 11). In this case, we can understand the pedagogue as an essential characteristic of meaning-making, represented in large size compared to the trees, and emphasized with a heart in the center. This could be connected to the importance of the pedagogues for these children's agency to explore and play freely in this environment. Exploring childhood places is intrinsically connected to attachment to a secure adult figure (Morgan, 2010).



Figure 11: a den in one of two areas called "the forest of dens" by the children. The drawing shows the same place represented by one of the children. She described that she had, in the drawing, some dens, by trees, some of her colleagues, logs, and one of the pedagogues, watching the children playing.

6.2.15 The climbing trees and the train-track

6.2.15.1 The preference of environments

This area has many "climbing trees," hardwood trees with serpentine branches low to the ground accessible to children to go up to. There is also a parallel train track.

"We have been in here many times," a girl told me upon arrival. "This is the place to climb and to look at the train. (Det här är platsen att klättra och titta på tåget.)". When in this area, children climb in groups in trees, three to five children per tree, and climb. When climbing, they speak with each other far from adults and observing the adults. They test their balances, using different legs and arms, and testing different ways to go up. Some stay lower and balance themselves in different ways; some keep climbing and try to reach higher.

All children jump off the trees all at the same time when they hear the massive train of transport that comes along time to time. When a train pass, horizontally aligned, children

watch the train pass. Some children cover their ears with their hands. When the train passes, a child takes a picture, and some children scream!

Another week, some children found a new “climbing tree” in the chestnut wood area after examining and testing around in the school. Inspired by the visit to Alnarp, children observed their school trees and experimented in different ways. They found that they could climb in two trees, which they told me proudly.

The climbing trees, as affordances, are inviting to the action of climbing: children can easily see the possibility through their branches low to the ground. These attractive characteristics of the environment in Alnarp, which make it simple and easy for children to climb, seem to engage children in re-evaluating their school environment by examining their trees and finding new trees that can also climb on. The experience of watching the train, which is also a symbol of how the bigger world works, is exceptional for these children. This experience supports them in building up the narrative and meanings of these environments and society's greater environment.

6.2.15.2 Social opportunities in the running competition

After climbing for some time in the climbing trees, some boys start running in the open path, back and forth. A group of five other children joins them. The children start to argue about who will run in the area, which is now slightly overcrowded. A boy arrives at a solution: “we can do a competition! (vi kan göra en tävling!)”. He becomes the official “judge,” and the children together selected small groups to decide how the competition will run. The first two groups start, they stay each aside, and the other children scream: “Ready, set, go! (Klara, färdiga, gå!),” and they run all of the ways to the end of the path and come back. A group wins, and everyone celebrates. They repeat the competition a couple of times, varying the groups.

When the day was over, children needed to go to the bus to leave the area. Before leaving, One boy stands behind all children to hug and kiss a tree. He tells me: “I want to thank the tree, bye tree! (Jag vill tacka trädet, hejdä trädet!)”.

This was an example of how an environment's physical characteristics enabled children to play together with their friends, creating a game with rules, which are essential aspects of place-meaning. The elongated characteristic of the landscape worked as an affordance to run.

6.3 Children's learning outdoors

6.3.1 Meaningful places and children's learning

The children at this preschool had many learning opportunities in their interactions with the outdoors during the school days. In the material, there were many examples of self-initiated, informal self-learning during sessions of free-play and explorations of place. In the same way, learning activities and discussions were also initiated by the pedagogues. Since the beginning of the year, the group has spent much more time outside due to the municipality's recommendations to be outdoors for more time due to the covid-19 pandemics. This resulted in more time for the children outdoors to play freely. Free play in outdoor environments is known to support children's development of their cognitive capacity (Wyver, 2017) and overall healthy development (Ginsburg, 2007, Isenberg and Quisenberry, 2002, Wells et al., 2018, Wyver, 2017).

The learning approach is explored through a theoretical approach of experience in place and community. First-hand experiences in play are emphasized by the pedagogical theories of learning and development of Dewey (Dewey and Authentic, 1938) and Vygotsky (Vygotsky, 1978). Learning is not the outcome of all experiences, but they need to be meaningful for learning. According to the socio-ecological framework for human development, the environments where children create a sense of place depend on the whole ecological systems *around the child* (Bronfenbrenner, 1994, Stokols, 1992). In this perspective, the development of a child is the outcome of their lived experiences in their physical, social and organizational environments. The different ways that places supported children's learning during the preschool time are explored in the next section. Subjects explored are the importance of good quality outdoor environments for children to use and experience their places and children's complexity of self-directed activities leading to learning outcomes. Themes emerged related to how experience in these outdoor environments, as they were created as places by children, related to the learning outcomes about children's own bodies, about the social environments, about the world around them and about nature.

In the material, we find a whole set of particular places to which the children had developed meaningful place relations. The children showed many examples of creative and constructive play activities with complex negotiations in between each other and place. In these everyday places, children could learn while exploring and socializing. Visits to the Landscape Laboratory in Alnarp also resulted in more complex play behavior when the children were back at the preschool yard.

6.3.2 Learning about their bodies

The child's original grounds are the center of the *Socio-Ecological framework for human development*. These children explored the different environments with a great physical agency. They climbed, jumped, crawled, moved around in many different ways, learning motorial and balancing skills. According to Tuan (1977), children are naturally engaged in activity and movement. In many of these examples, a combination of openness and challenging obstacles with many places to go to, supported children to move considerably in a joyful way. Details in their tellings and drawings

illustrated this. In the narrative in *The forest of dens*, for instance, some children created a developed challenge to climb. Children tested how high they could climb, going higher and higher, and when they felt satisfied with their capabilities to perform, they updated the log's position, increasing the degree of challenge of their game. The learned body knowledge gained from such experience could improve their physical abilities to use environments and venture them to take more risks.

These children had opportunities to play in both more traditional play equipment and nature, where they seemed to have more options to move. The physical design of the environments was an essential aspect that allowed children to interact physically. The openness of settings, as in grass fields, provided ways for children to move freely and rapidly. On the other hand, the closeness of environments, such as in areas with trees or bushes, afforded obstacles for moving in a varied way, finding obstacles, and hiding. Trees and bushes allowed children to climb. There were some less obvious examples of physical usages, such as the two boys that found strangely shaped trees that allowed them to sit, and bushes to hold their bodies against. The many stumps in the schoolyard allowed children to jump over and try their balances. Many of these environments with varied physical usage were natural elements, such as trees, bushes, and loose natural materials. One of the more critical aspects of outdoor play is that children often test their limits, pushing play boundaries and taking risks (Sandseter, 2009, Tovey and Waller, 2014). In this way, natural environments can promote physical skills development (Fjørtoft, 2001, Fjørtoft, 2004, Grahn et al., 1997). According to Brussoni et al., risky play, which was offered by the engagement with the natural environments in these examples, offers the best possibilities to support children's physical development. When children play in planned playgrounds that are too safe with adults' constant interference, their possibility to engage in free play related to children's development is diminished (Brussoni et al., 2012).

In the playground example, a group of children was allowed to stay in the climbing play equipment and calmly test it out, while other children had to leave the area due to crowding. The children that stayed managed to perform more acrobatics. Traditional, more dense playgrounds can cause competition and conflicts rather than cooperative play, affecting children's possibilities to develop their physical competence (Barbour, 1999, Malone and Tranter, 2003). While the playground also promoted children's opportunities to develop physical abilities, this play was more repetitive under the equipment's original function. Playgrounds rely heavily on fixed play equipment associated with insufficient stimulation of children's experiences and sensorial usage, providing opportunities for a social and physical place and less creative play and motor development (Woolley and Lowe, 2013).

6.3.3 Learning about the social environment

The social environment is another dimension of the Socio-Ecological framework for Human Development. Social interaction related to place is very important for developing place-meanings during childhood (Moore, 2017). In this case, the outdoor environment was rich in possibilities, where children could develop social contacts with peers, pedagogues, and with adults from their neighborhood, sometimes with parents that came at times. In their interactions during free play,

they had social and group play situations. They had opportunities to have friendly conversations, learn about others, organize games, negotiate conflicts, and create solutions.

Children were conscious about their power to create places together and the tools to play. With the natural elements, they found they took ownership of their environment, creating common places and stories connected to the environment's openness. In the example of the stones' collection, children were proud to share their narrative, claiming the agency themselves when digging and collecting stones particular to them. These children were careful with their creations in environments. In their collective spaces, they understood and agreed that many children would use and share the environments. The forest of dens is one example. Some children could interact and play with the dens, democratically re-constructing and changing these environments. Many of the places were cared for with a sense of stewardship, preservation, and collective ownership and sharing with their friends, contributing to the environment being child-friendly (Chatterjee, 2005). By having a friendship with spaces, these children also seemed to create notions about our social presence in the world. Kyttä (Kyttä, 2004) describes that when children can actualize their affordances freely, creating *actualized affordances*, these are enjoyed and further explored by other children.

In the ponds and in the running competition, we see two examples of entirely self-organized group play activities, where children created a collaborative play with a set of rules to be followed by all. They used the elements available, as the ponds, stones and the dinosaur bushes, and the long path in Alnarp, as central characteristics in their games. Observing the children, I saw that groups were organized, with collective rules to be followed. When there was conflict, children often found solutions themselves, sometimes by creating new rules. When too many children joined the game, the groups re-organized themselves, others parallelly playing at the same time or waiting for their turns. Play themes in groups were repeated on several occasions, on different days, with different children in different groups.

Children were attentive to each other's behaviors in the group games, giving suggestions about behaving or acting if something was perceived as incorrect. One example is how they organized groups to find worms for days. Together, all children organized the tasks to find worms in the schoolyard, in Alnarp, and the neighborhood, with sticks and twigs as tools to dig. Sometimes children would call out to another child not being careful to a worm. I observed how they helped other children to do the tasks. Groups were formed each day, and children sat together, working in a common task to find worms in the ground. Findings worms often created dialogues between children.

Sometimes children had disagreements. Some children recurred to the pedagogue, while others went to the hiding bushes; before going back to play or joining another group. The literature describes that the presence of places for children to hide and reflect can support their emotional development and their self-regulation by allowing enough space and time for children to recover from a stressful situation, which is vital for developing social competencies that will allow children to gain emotional well-being (Barrett et al., 2013).

In my observations, I noticed how there were mutual group activities always happening in the schoolyard. In this way, children actively moved between groups and activities, fastly, where they could be integrated into a new group or create a new activity. Since the schoolyard had a series of

environments to go to, children found new opportunities to play and move around quickly. This resulted in a series of possibilities for group activities simultaneously, where different groups played in different ways. The democratic aspect of enough space in the environments, also provided by the presence of many trees and bushes, gave the possibility to mitigate overcrowding, allowing children to use and play in different ways all at the same time. The size of environments is vital for children's agency to move and play freely (Mårtensson, 2004a).

Opportunities for children to have social interactions freely is directly connected to their development of the most important cognitive factor in preschool age. Shirley Wyver, in the article "Outdoor play and cognitive development" (Wyver, 2017), explained that one of the most essential cognitive maturing that occurs in preschool age is the development of *Executive function* - the set of cognitive processes that are necessary for the cognitive control and adaptation of their behavior in response to others. For example, a child with advanced executive function waits for their turn to play rather than taking another child's toy. Executive function is broadly recognized to be impacted by environmental factors that support social experiences between children, physical activities, and wellbeing - making outdoor places the ideal environments (Mårtensson et al., 2009, Wyver, 2017).

Hidden environments allowed children to be comfortable to use and also speak with some peers. Sometimes in their mother tongue, some shy children engaged in talking and playing in areas that provided secrecy from the adults. Duarte and Freeman (2017) presented a review supporting that outdoor play and interaction with nature provide excellent opportunities for children to have a second language learning and maintenance. Most of the world's population uses more than a language, which should be encouraged because it is linked to the development of cognitive abilities such as problem-solving, memory, and creativity (Duarte and Freeman, 2017).

6.3.4 Learning about the world

During their everyday interactions in these environments, children have hands-on experiences to learn about society, urban organizations, and the world around them. These all relate to the *Socio-ecological framework*, which is the broader social, political, and economic spheres of our organized society.

In these everyday encounters, children created narratives related to the people they met and with the support of elements they find in the outdoors. Children in this preschool encountered representatives of society and the world in general through the workers they met, and also researchers from the university, as myself. These interactions were all met by the children with curiosity and engagement, sometimes raising comments trying to understand those elements: *what were these? Where did they live?*. During these encounters, children initiated dialogues that set the hypothesis of those met: who was the firemen? Alternatively, they compare themselves with them: "look, he has the same clothes as us, but red.". When meeting a leafblower, they instantly remembered the episode described in *The Chestnut Woods*. Pedagogues also promoted some activities outdoors supporting children. In some occasions, parents were present, following children in their free play outdoors. According to Louise Chawla (Chawla, 1992), children in pre-school balance their inward worlds of the familiar and intimate with the outward worlds. The author explains that proximity to caretakers and a sense of oneness with the world will create a sense of world's

goodness, which are essential factors for positive childhood place attachments. With this in mind, the welcoming presence of the local social environment and the parents in the pre-school could support a positive sense of the world

In that way, children seemed to learn about the organizational elements of society and social structures. Experiential learning within the social environments that promotes growth and learning has been defended by Dewey (Dewey, 1958) and is the central concept of *The Vygotsky theory of cognitive development* (Vygotsky, 1978). Direct and repeated encounters with the different environments in everyday life could add various perspectives to children's experiences opportunities connected to their learning. Through these experiences, children gained new knowledge. As in this latest example, they also discussed and re-arrangement their knowledge about the met elements by raising questions and comparing them with previous understandings.

Children demonstrated very positive senses of places in their small world around them and about nature. In their visits, they had opportunities to have many positive experiences with different places, creating their activities and environments. In these narratives, they explained to me about their nearby school, their parents that passed, about people who passed by every day and said hello. According to the model of development of children's understanding of large-scale environments (Hart and Moore, 1973), there is an outward pull in children's relation to place, and they create landmarks as reference points as they explore the surroundings. These landmarks are essential as a spatial notion of places around. Walking around, children cited places with joy, remembering positive memories of events that happened. It looked like children had specific senses of place of environments around their schoolyards. In their local neighborhood, children recognized aspects of their local environment with friendliness.

Standing by the lookout fences and interacting with local passers seemed to support children to feel included in the local social environment. The same feeling seemed to be present in the walking excursions in the local neighborhood. Previous studies have realized that varied and repeated direct experiences with environments, combined with the feeling of safety, make an excellent contribution to positive senses of place (Manzo, 2005), for the attachment to places (Chawla, 1992, Scannell and Gifford, 2014) and for friendship with places (Chatterjee, 2005).

Similarly, the positive interactions with happy moments under safe conditions in the neighborhood are central for children's creation of senses of place in their childhood environment. Even if these children lived in a low-social economic neighborhood, no predominantly negative social experiences, narratives, or behaviors were observed in this particular material during this particular period of their outdoor life. The outdoor environments available to the children seemed to combine into a set of supportive and child-friendly places supporting their relationship to society as represented by the local neighborhood. A positive understanding of places where children live is critical because they leave identity effects into adulthood (Chawla, 1992), sometimes laying a sense of belonging stronger than the places later in life (Morgan, 2010). Experiences during everyday lives are significant for children to develop competence in society's different spheres (Chawla, 1992, Chawla and Heft, 2002, Kahn Jr and Kellert, 2002, Manzo, 2005).

6.3.5 Learning about nature

One of the most evident manners that children related to place in natural environments were their interest in interacting with wildlife and natural elements. Observing, searching, and holding insects, snails and worms allowed children to engage with their environment with care and attention. When photographing the outdoors' environments, children showed attention to small natural elements, such as the leaves, a worm, the foot in the grass, the sky. In their drawings of favorite environments, children showed many natural spaces, with trees, mushrooms, and the sky as essential aspects.

Places with natural affordances and wildlife offered many exciting experiences for these children. The trees and soil provided many variations. In the autumn landscape, mushrooms, leaves, and wildlife were highlights of interest that regularly engaged children. Interactions with wildlife provided a theme for children to play around continuously for several weeks. They also provided material which the pedagogues used for activities indoors. These activities further increased children's interests in wildlife and nature, making them play even more with these elements. Interest and concern for small insects were significant in the children's interaction with the outdoor environments and the memories from places.

Children seemed very attentive to changes concerning seasons. The wildlife interactions were especially attractive to the children, providing many experiences with fun and playfulness. Children told about environments relating to such experiences. Many of these were related to physical and sensorial engagement. When talking about the Landscape laboratory, for instance, the taste of the apples, the small animals manipulated, the climbing trees were the most remembered aspects of the environment. Guiding me through the most interesting places in their schoolyard, the boys showed me a series of physical aspects that provided physical experiences: sitting in a certain way, standing in a certain manner, looking strangely, shaking hardly. Because children are more experiential and tactile than adults, their engagement with environments is multisensorial (Merleau-Ponty, 1982) and tied to movement and activities (Tuan, 1977).

In many situations, children compare the size, the weight, and the shapes of natural materials lying around, such as logs, twigs, stones. They also tried to see how materials behaved when these were broken. They climbed on trees and asked adults to stand close to be able to investigate height. On one occasion, children put stones around a child lying down, which allowed them to understand shape and size. In another situation, a boy, playing by himself, used natural materials from the forest to fit correctly inside the box. By calmly playing by herself with a twig, a girl arrives at conclusions, which she can explain to me while reflecting by herself. Research has some examples of children, when allowed to construct and influence their environments without adult interference, playing in a very creative matter (Kylin, 2004, Kytta, 2003, Sturm, 2008), leading to self-directed learning activities (Korpela, 1989).

When I arrived at the school, children told me about the activities I missed, taking me to environments and telling me a narrative of what had happened, with a beginning, a middle, and an end, using the elements and tools involved in their activities. In the situation with the girl throwing a twig, we see an example of a child elaborating on her knowledge gained with the support of the natural tool's affordance, that is, the functionality of artifacts in environments (Heft, 1988).

As explained by Wyver(2017), this supports the development of their situated cognition in which they use contextual information to create internal representations, as explored by Heersmink:

Why create an expensive internal representation of the world, when you can use the world itself as a model?... Why create an expensive external representation of the world, when you can use the world itself to interact with and use it to facilitate your cognitive tasks? (Heersmink, p.479).

Children seemed to become more curious about nature and explore their schoolyard since they started having visits to the Landscape Laboratory and other natural environments. Some of the physical settings had characteristics that facilitated a type of play, which seemed to support children to use their schoolyard differently. In the climbing trees area, the trees gave cues to make children climb. In the den forest, the environment suggested children to build dens and hide. Access to these places in *The Landscape Laboratory* with many environmental cues provided children's new ways to use the schoolyard. When they had played in Alnarp with all of the available logs, stones, and twigs, children found new and more creative ways to use the same natural materials in the schoolyard.

During my observations, I noticed how children compared natural environments and how they always seemed to be looking for the same natural experiences in every visit. Sometimes, children would themselves organize an activity that lasted for days, as the example of looking for worms in different environments. Some organized activities were picking mushrooms, taking pictures, collecting stones. When visiting a new environment, children would search for these same elements, engaging in their groups, finding, in these visits, some familiarity with the activities they had previously done in their schoolyard. In group conversations between themselves and the pedagogues, children related characteristics of their experiences with other places. This could be in their schoolyard, where children compared the trees, for instance, with the climbing trees in Alnarp. Experiences of specific social and physical environments are likely to influence other environments' place meanings by association (Cuba and Hummon, 1993). In this manner, the understanding they create about the Landscape Laboratory might facilitate children's relations to other natural environments. Related to that, children sometimes told me about their visits to other natural environments that I did not follow by naming the presence of "forest," "the worms," and "mushrooms," often elements that children also tried to find in their schoolyard and in other places they explored.

Being in nature brought up conversations about caring for nature, as well as caring behaviors. Children had an innate careful behavior towards wildlife. They were often careful about their found animals, handling them with their hands, examining in different ways. At their first time in Alnarp, some children were scared of the small insects, but other children calmly explained nothing to be afraid. They sometimes even raised discussions themselves about the need to be attentive and kind-hearted with the found creatures. Children understood these animals with a consciousness about the value of wildlife in nature, with carefulness and respect. Children learned, in these excursions, about certain behaviors, such as not throwing garbage or damaging trees and care for the found insects and worms. Bodily experiences connecting children to natural elements could contribute to a greater sense of care for nature and the natural environments (Bartos, 2013).

Concerning the goal for children to develop a connection with nature, Kahn and Weiss (2017) recommend that children have wilderness experiences, as untamed nature, as the only way to foster a real connection. They say that urban children usually define nature with urban elements – like fountains, birds in the city trees, city squirrels – not the real natural elements, such as wild trees, water, unorganized nature. This study, however, found that children always compared natural elements in the various areas, finding the wildlife and same aspects in their neighborhood, after exploring Alnarp. Children examined worms from here and there, mushrooms from different areas, comparing natural water environments to Alnarp with the elements they found around their urban environment. We can suggest that practices to increase children's access to natural environments are important, and excursions to this planned natural environment also seemed to be a way that could foster a connection between them and the green spaces.

The pedagogues, mostly following children's ideas, utilized the materials from nature, as stones, insects, and leaves, brought inside by the children to start educational projects. Some examples were looking at apples at the microscope, creating clay versions of mushrooms found outside. The pedagogues noted that children, through the projects, became more interested in natural themes. Pedagogues specially cited the project where children took photographs of the outdoors. They noted that, when children started, their pictures were diffused and portrayed large areas. With time, children became more focused on their photographs with details in the environments. Pedagogues saw that children became even more attentive to details in the environment.

7 Discussion and conclusion

This qualitative study aimed to obtain information about the role of the different spheres of everyday outdoor environments to support the development of children living in a low-social economic area by exploring their senses of place. This focus was important because children living in low-social economic areas are at higher risk of being exposed to a series of stressors that will impact their development and understanding of their local environments and the world. This knowledge is relevant for children's education and planning of just societies by supporting the evidence of the lived experiences that could counteract the negative impact linked to children's development. Nevertheless, the role of nature in pre-school days for children's development is relevant for children in all socio-economic situations. Providing support directly linked to everyday lives could be a meaningful strategic way to achieve social sustainability in societies and communities (Stoltz et al., 2016, Mitchell et al., 2018).

Through fieldwork with different participative methods, this study found that spending time outdoors in places with specific physical characteristics gave many opportunities to have positive experiences, play and move; have social interactions; and connect with the local areas and nature. These were associated with opportunities for children to learn and create positive understandings about the world around them. The participative observations and drawings highlighted that the school had the most significant value in these children's positive experiences and understandings of their local neighborhood and nature.

The results highlight the importance of positive, accommodating, and safe experiences in everyday outdoor environments and nature. In the observations, enabling children to have experiences in attractive environments seemed to support their learning experiences, which shed light on play possibilities in their schoolyard by taking new play initiatives, creating new tools, developing their game activities, and exploring their schoolyard in other ways. Overall, children in this preschool seemed to have a positive understanding of their local environments and their world. The literature review showed that children growing up in low-social economic environments are at risk of developing negative bonds to places of origin, which will impact their identities through the rest of their lives. Children's cultural background is associated with how they will behave and play outdoors, limiting the benefits they could get from free play in nature.

This discussion further specifies how access to outdoor environments through the pre-school supported children's development by affecting attributes of the physical, social, and organizational dimensions of their experiences. How did the access to the different outdoor environments support children to have rich and varied experiences? The results point at the importance of access to varied and permissive places for children's free play and manipulation. For children to have access to the positive experiences that will leave effects on their development, they must have access to outdoor environments with the qualities required for optimal experiences promoting learning. The results remind us that giving children opportunities to access proper outdoor environments can promote positive experiences and play (Wells et al., 2018).

This study highlighted the potentials of natural elements for children to use in play. Something evident in the analysis is that even if the schoolyard missed the classical qualities of children's environments –like playgrounds and play equipment - it was not challenging for children to find places to play and activities to do. When the outdoor environment invites children to play freely through the presence of various interesting and open possibilities to choose from, there is a higher chance that children will play creatively (Kyttä, 2006). From a phenomenological perspective (Merleau-Ponty, 1982, Rodaway, 1994, Tuan, 1977), children are more experiential and curious than adults, attentive to details in the environments, and involved with their senses in their everyday interactions. The results explore how children often interacted creatively with environments with great sensorial attention. In these environments, natural elements provided many elements for children to touch, smell, look at, and to balance on.

Children's agency to create seemed to depend significantly on having spaces they could manipulate themselves. The environments in these narratives remind us of what Chatterjee (Chatterjee) expresses about friendly environments in childhood: places that promote exploration and creativity can be achieved by having many possibilities to allow children to shape physical characteristics freely. These natural elements offered different ways of use, which is called affordance (Heft, 1988). *The chestnut woods*, in their schoolyard, is a favorite area providing examples of many affordances for play. Much of those were materials that children could manipulate and change, which can provide endless ways to play: sticks, stones, twigs, and similar. Small insects, worms, and snails also provided a lot of play with senses. Access to natural spaces seemed to provide exciting opportunities for children to experience the environments with their physical opportunities. Many researchers lift vegetation as something needed to offer more play opportunities for the children in pre-school play environments (Fjørtoft and Sageie, 2000, Mårtensson, 2004b, Woolley and Lowe, 2013). If children have experiences with outdoor environments with enough variation and varied natural elements to create and build, many prefer open environments rather than the built playgrounds, contrary to popular belief (Woolley and Lowe, 2013).

Children's places are not always physically visible. Their created places did not physically show children's actions: we could not say, by looking at bushes, pile of stones and trees, that these were environments that became places for children. The meanings of these places survived by children's repeated behaviors, their conversations and the narratives they told me. Children created their own places mostly in the *in-between spaces*, areas without defined play characteristics (Luchs, 2017). These areas, such as bushes, the path, and fences, became important places to the children. In their perspectives, they became, in experience and during play, a bush to hide; a path to play with water ponds; fences to interact with their neighborhood. *In-between spaces* have an intrinsic value to support children's use and should be recognized for their spatial value in play (Aminpour et al., 2020) and their place-meaning contributions.

The lack of ownership of the pre-schoolyard was an obstacle for children's agency to develop positive place experiences. The school did not own the used patio, which has a negative impact on children's experiences. Examples of negative experiences were when pedagogues cleaned the schoolyard every Monday morning, collecting the weekend visitors' trash. Sometimes, children's small creations disappeared over the weekends, and children were aware of the need to hide their creations and possessions. Environments with children's creations safe from harm are critical for developing positive place relationships (Chatterjee, 2005). Something not observed in the

schoolyard was that children built dens, even after their great interest in dens in Alnarp. This could be associated with a limited amount of natural materials for this type of activity – many of the twigs and logs were small and could probably not be built into a den. This all suggests that ownership of the pre-school area could further develop the setting by keeping children's creations permanently, by further improving the quantity of natural materials, having generous and varied natural spaces with possibilities of spontaneous interactions. The addition of more vegetation could afford children to develop their learning activities and experiences further.

Following these children in their walking excursions was important to observe how they had positive understandings of their local areas. The observations during this clearly demonstrated that children had a comprehensive and positive spatial understanding of their local environment. This is related to a healthy promotion of senses of place by nurturing positive understandings of their environments through experiences. Senses of places are only developed through time and depend on having many opportunities for visiting and creating experiences, memories, and place meanings (Relph, 1976). Concerning that, the results support the importance of the design of nearby environments. Children living in impoverished areas are often segregated from the city environments, with fewer opportunities to visit local places or nature (Cele, 2006). The area around provided many places to walk safely. Walking paths and bike lanes allowed preschool personal to easily and safely accompany children to walks around their neighborhood. Playgrounds, which also were cited as important by children, became places to provide a reason to take walking excursions.

Taking excursions to the Landscape Laboratory filled the purpose of supporting children's experiences. The landscape laboratory served children with several essential qualities that could promote their use and exploration. Many of the theoretical background aspects for the development of positive senses of place in childhood are present in Alnarp. Some examples are the variety in landscapes and terrains promoting exploration: places with different types of forests, water, open and close areas. There are identifiable territories produced by children, as the forest of dens. There are many affordances for various play experiences through the various open natural elements and the natural elements that facilitate play, such as the climbing trees. There are enough places where children can feel unsupervised playing, protected by natural features, such as the bushes and trees, but where the pedagogues can still observe them from far.

Children's contact with natural settings seemed to promote understandings of nature and careful relation to natural environments. Creating a relation to nature in childhood could influence how they, as adults, will act towards the environment. Researchers have argued that concrete experiences with nature in early childhood are essential to foster children's connections to nature, which is the ground for environmental awareness, that is an understanding that nature is a crucial part of our existence in all systems (Chawla, 2020). Environmental awareness is strongly associated with pro-environmental behaviors during adult life (Broom, 2017, Chawla, 2007, Ewert et al., 2005, Tanner, 1980, Ärlemalm-Hagser and Sandberg, 2017). With this fact in mind, the Landscape Laboratory excursions could have a significant impact to be taken into account.

Above all, pedagogues fulfilled a function to stimulate, observe and care for children's experiences. The combination of free play possibilities with pedagogical support seemed to be central for these children's experiences. There is a growing academic demand for preschool children's education, reducing their time outdoors during free play (Waller et al., 2017). This is problematic because free play is significant for children's learning moments, as explored in the

results. However, Dewey (1938) reminds us that not all experiences during play can lead to learning, but just the ones that promote growth, new skills, and gaining knowledge. The Reggio Emilia pedagogy's supported children to communicate in various ways, be curious, investigate, and reflect on found objects and experiences. This seemed to stimulate children to have constructive moments during play and to start conversations about different environments. Children's outdoor activities being taken indoors seemed important for these children, stimulating them to explore further and gain interest in the environment. Something that I observed is how children seemed excited to take objects from outside indoors, where pedagogues would create new activities or have discussions with children. This reminds us of what Vygotsk (1978) expresses: pedagogical support in early childhood has a crucial role in supporting children's learning experiences.

Can we suggest that, for children to create a positive overall image of their local environments and to have these positive experiences, especially in these marginalized areas, pre-schools should play a central role? Not all experiences with outdoor environments and nature are positive (Mårtensson et al., 2011). In the Nordic countries, there is an accepted understanding of the role of nature for children in preschools (Einarsdottir and Wagner, 2006, Mårtensson and Nordström, 2017). Because children in low-social economic environments have obstacles preventing them from having these experiences in the outdoors, likely to further contribute to the uneven realities. Educational programs could promote children's access to local environments and nature, without complications. These results support that goalless and flexible opportunities for play and unpretentious walks around their local areas with positive and safe experiences could be a resource for children.

Including place and nature in children's everyday lives, because of the benefits that can be offered for children living in low-social economic areas could inspire the efforts to promote better opportunities for equity and social justice. This study has shown that an interdisciplinary perspective is positive to provide impacts that could support children's development of senses of place and learning. In order to have the formative experiences observed, the existence of proper outdoor environments is essential. It is not enough to have well-designed environments for children to use if children do not have access to and experiences in these environments. Pre-schools could, in this way, play a central role in fostering positive experiences for children. It is not enough to have pedagogues recognizing the value of nature and local environments in theory. Children need to have access to free play experiences and stay in such settings, with enough visits to develop positive place experiences. Finally, these outdoor environments need to be accessible to allow children to stay and use them in their everyday lives. Such experiences need to be provided with access to both the local environments and proper natural places. The responsibility to create changes that will foster better opportunities for all children should be given to different social organizations, enhancing the positive experiences to support planning and pedagogical practices and address the social and power disparities in urban environments.

7.1 Future research

Improving outdoor environments' possibilities to support children's development could be supported by further studies to explore environmental planning and pedagogy characteristics.

Further studies could include other groups related to the layers of impact on children's development in the Socio-ecological framework for children's development (Bronfenbrenner, 1994, Stokols). These groups could be the parents, religious institutions, and other community organizations. How do these institutions affect children's understandings of places? Do the school initiatives affect place meanings for the parents?

Another interesting study could be investigating the environmental impacts for children's use and developments in excursions where children did not have the time to develop senses of place. For instance, the school had visits to other forests and planned initial visits to other natural environments in the future: the sea, a field, or another type of landscape. These questions would be interesting to investigate: how do children create meanings around a new place? How would these compare to children with developed senses of place? How would these children use the schoolyard without the visits to the Landscape laboratory?

An important aspect found in this research was how wildlife, like insects, snails, and worms, supported children's tactile and multisensorial experiences in the outdoor environments. Wildlife's role for children is a subject that has rarely been researched (Cox et al., 2018). What is the role of wildlife for play or the development of place experiences?

It would be interesting to study these pre-school's environmental memory with the same children, some years– do they still hold a positive environmental perspective? What are the place-memories that remain in the group? Which meaning will The Landscape laboratory, the neighborhood, and the schoolyard have for these children in the future?

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9 Appendices

9.1 Appendix A – Information letters

INFORMATION LETTERS SENT TO THE PARENTS – 08/2020²

Information om studie kring barns relation till utemiljön

Bäste Förälder/Vårdnadshavare!

Jag heter **Amanda Guimarães Gabriel** och är student vid Sveriges Lantbruksuniversitet (SLU) där jag skriver mitt examensarbete i landskapsarkitektur. Min studie handlar om barns relation till utomhusmiljöer och hur de upplever olika utemiljöer för lek och aktivitet i sin vardag. Under mitt examensarbete kommer jag att vistas på ditt barns förskola under ett antal dagar under höstterminen och följa med gruppen på ett par utflykter.

När jag är med förskolan kommer jag att dokumentera den fysiska miljön och barnens aktiviteter. Med några av barnen kommer jag att göra aktiviteter i förskolans sammanhang. Då får barnen berätta vad de tycker är roligt att göra utomhus och hur de använder olika utemiljöer i vardagen.

All information som delas av barnen under studiens gång kommer att behandlas konfidentiellt och inte delas med andra än mina handledare. Vid presentation av resultat där barn ingår kommer fiktiva namn att användas.

Om ni har frågor angående studien är ni välkomna att kontakta mig eller min handledare docent Fredrika Mårtensson.

Barnets deltagande i studien är helt frivilligt. Barnet kan själv avbryta sitt deltagande när som helst.

Bästa hälsningar, Amanda Gabriel

² Both letters contained originally a picture of myself that is not present in this thesis.

INFORMATION LETTER SENT TO THE PEDAGOGUES – 06/2020

Examensarbete rörande barnens erfarenheter av utemiljöer och naturen

Hej!

Jag heter Amanda Guimarães Gabriel och jag är student i Sveriges Lantbruksuniversitet (SLU) i Mastersprogrammet ”Utomhusmiljöer för hälsa och välbefinnande”. Jag kommer att skriva mitt examensarbete i höst om barnens erfarenheter av kontakt med utomhusmiljöer och naturen. Jag kommer att planera studien med målet att utreda barnens perspektiv med olika undersökningsmetoder, bland annat *intervjuer* och *observationer*. Det innebär att jag skulle vistas på förskolan under ett antal dagar under höstterminen.

Allt deltagande i studien är frivilligt. All information som delas av en respondent under studiens gång kommer att hållas konfidentiell. Ingen obehörig kommer att ha tillgång till insamlade data. Allt data kommer att anonymiseras och lagras säkert för att förhindra obehörig åtkomst.

Om ni har frågor angående studien är ni välkomna att kontakta mig. Ni kan också kontakta min handledare Fredrika Mårtensson.

9.2 Appendix B – A table with information about the fieldwork

Date of observation	Place	Children – how many ³	Weather	Notes
5/10	Preschool - outdoors	20-25	Sunny, +18C	-Many adults outside, including parents of children, stayed the whole morning. -Worker in the school garden, cleaning the leaves from autumn
6/10	Preschool - outdoors	10 - 14	Partially cloudy +10C, it rained the night before	-Just substitute personal out in the school, non of the regular pedagogues. -Worker again, cleaning the leaves
8/10	Preschool - outdoors	16-25-16	Cloudy, windy, +10C, very humid	
8/10	Preschool - indoors	16		-Group activity about Alnarp, where children were remembered about their excursion
8/10	Walking to the playground, playing in the playground 1	16	Cloudy, windy, +10C, very humid	- 5 minutes' walk from the school, a typical bikeway from the 1960s-1970s. Children did not recognize this space or the way. This was an area with villas and higher

³ The numbers varied from when I arrived at school until I left. When there are two numbers, they reflect that number of children when arrived and when I finished the observations.

				economic statuses than the school area.
9/10	SLU Landskapslabet	20	Cloudy and sunny (10C- 15C)	-6 adults, pedagogues and me -Children were divided into two groups. I followed the first one in half of the time and the other one after lunch
12/10	Preschool - outdoors	8	Children feel it is very cold, +4C, sunny	- 2 adults
12/10	Preschool, indoors	8		- Children have taken pictures of the outdoors. They chose places to have on the wall. I look at the Pictures chosen.
16/10	Preschool, outdoors	10	Sunny, +4C	- 2 adults
16/10	Walking to playground 2, Playing in the blue playground	13	Sunny, +6C	- We meet another preschool in the playground, children do not interact, but they look at each other. The children chose this playground themselves. They know the way to the playground. They recognize environments in the way.
27/10	Preschool, outdoors	9	Windy, rainy, cold, and dark, 6+C	
13/11	SLU Landskapslabet	16	Cloudy, +7C	Three adults, just one group with all the children during the whole day. Children in this visit had more time to be in every environment.

9.3 Appendix C – Interview guides

INTERVIEW GUIDE: INTERVIEW WITH FÖRSTELÄRARE – 29/09/2020

- The introductory interviews were not recorded (in order to keep informality and introductory level of talk).
- Semi-structured. Aim: to gather background information about the school; students, about their pedagogy; about their use of outdoor environments, and their aim with nature visits. To get past information about their visits to Alnarp.
- Themes to explore:

Who are the pupils?: languages spoken, where do they live, groups; Pedagogue: who? How many?; How much time outdoors? Weather? ; School time and schema; Rules of behavior; Children's previous experiences? ; Parental expectations and rules?; Pedagogical approach; The expectations of the outdoors? What is the benefit of the outdoors?; Why do they visit Alnarp?

FOCUS GROUP SEMI-STRUCTURED INTERVIEW – PEDAGOGUES - 08/12/2020

These were recorded in a video and audio and later thematically analyzed.

Mål

(1) Hur anser pedagogernas att barnens relation ut till omgivningar ut i stort; (2) Vilken roll har olika platser i vardagen – viktiga platser, användning och meningsskapande; (3) Hur pedagogerna anser att närområdet, utomhusmiljöer och naturen kan stödja barnens utveckling

Kvalitativdiskussion - guide

- 1) Hur genomförde de uppgifterna: Metoden; Resultat
- 2) Hur de upplever vardagen med mer utomhusvistelse?: Corona: hur har rutiner ändrats sedan pandemin började? Deras syn på utevistelse i förskolan och i utflykter; Deras syn på barnens upplevande; Hur ser de på utevistelsens roll i förskolans vardag?
- 3) Uppdatering: vad har hänt sist? Nya utflykter. På förskolan, Fredagsutflykter, Utflykter med buss

9.4 Appendix D – Workshop instructions

DRAWINGS - ACTIVITIES DESIGNED FOR THE PEDAGOGUES TO PERFORM

AKTIVITET 1 – EN ROLIG UTOMHUS PLATS I FÖRSKOLAN

Målet: att få en insikt om barnens upplevelser av platser i förskolegården.

Material: Papper, blyertspennor, plankor och klämmor

Plats: utomhus, på förskolegården

Tid: 20, 30 minuter

I introduktionen kan ni berätta att Amanda, forskaren, är intresserad av att veta vilka är barnens favoritplatser i förskolegården, utomhus.

Ni kan dela ut pappers- och tillbehör till barnen och be dem **att rita sin favoritplats i förskolegården utomhus**. Berätta att det kan vara en bra plats i förskolan för att leka, eller att springa, eller där man kan hitta en rolig snigel eller mask, till exemplet. Det är ok om barnen ritat utifrån egen fantasi, eller om upplevelser på platserna.

Ställa öppna frågor medan de ritat - VAD, VEM, VAR, HUR? Be dem, när de ritat, att tänka på:

Vad **de gör** när de är på platsen

Vad **de tar** med händerna

Vad de kan se och lukta på platsen

Vad de **hittar** på platsen

Vem är på platsen med dem.

När de är färdiga, be varje barn att berätta vad platsen heter. Skriv namnet på ritning.

När alla bilderna är färdiga, om barnen har fortfarande uppmärksamhet och intresse, sätt alla bilder framme. Tillsammans med barnen, organiserar bilderna på ett bord som om det vore en fantasi karta av förskolegården. Ni får välja en central punkt och berätta att punkten är det ni står. Distanserna på "kartan" behöver inte motsvara verkligheten; de får själva välja hur långt en "plats" ligger från en annan "plats". Ni får hjälpa med att visa vad varje bild heter. Om ni gör en karta, fotografera det i slutet. Ni kan även hänga kartan på vägen om ni vill.

AKTIVITET 2 – EN SPECIELL UTOMHUS PLATS

Målet: att få en insikt om barnens förståelse av bra utomhus plats

Material: Papper, blyertspennor

Plats: inomhus

Tid: 30 minuter

Introducerar aktiviteten med att berättar till barnen att de kommer att få rita en bild på **en speciell utomhus plats**. Varje barn kommer att få visa sin egen plats. Ni kan berätta att det är Amanda, forskaren, som är nyfiken på att veta mer om roliga och bra platser för barnen.

Be de att tänka på en utomhus plats som de gillar att vara på. Det kan vara en favoritplats, till exemplet. Eller en bra plats att gömma sig, att leka, att gräva, att hitta sniglar...en bra utomhus plats. Be dem att tänka lite på när de går till platsen...vad gör de där? vem är där tillsammans med dem? Vad finns det i platsen?

Dela ut papper och pennor och be varje barn att rita sin egen plats. Det är ok om barn väljer att rita en fantasiplats eller en riktigt plats. De får tid att rita sin plats.

Ni får gärna gå runt och titta, ställa öppna frågor:

vad ritas ni?

Vem är det?

Vad gör ni?

Noterar om vissa barn "kopierar" sin plats av andra – tex de tittar på ett annat barn bild innan de ritas.

Skriv på papperna namnet på platsen när barnen är färdiga. Om barnen har energi och intresse, ni kan sluta med en kort stund där de får berätta om sina platser. Ni kan sortera ut vilka platser ligger nära förskolan, och vilka platser ligger långtifrån.

9.5 Appendix E – Results of workshops

“MIN BÄSTA PLATS PÅ FÖRSKOLAN GÅRDEN – MY FAVORITE PLACE IN THE SCHOOLYARD - RESULTS”

Names in parentheses are translations of the names the children called the places, or comments children expressed while drawing. The same places are marked with the same colour

Favorite place in the schoolyard	Elements of the drawings
Trees – “The forest”	There are clouds and it’s raining. A block of lines in the center, with the text “trees”, forming an area without open spaces. Bushes at one of the sides, with many flowers. At the other side, many flowers growing.
The chestnut woods – “The forest”	At left, there is a single standing tree log, very large, without the tree top. In the centre of this log, there is a long plant, with the text “flowers”. At the right side, as large as the tree, there is a rainbow, standing upon some mushrooms in the ground.
The chestnut woods – “The forest”	Many solid standing tree-logs, without the tree tops, that occupy almost all space free in the page. There is a lot of soil in the bottom, and children asked to note they drew “the forest”, “the soil” and “trees”.
The chestnut woods – “The forest”	There are solid standing tree-logs going all up to the pages, without the tree tops. In the text, there are notes that say: “to spring there, in the forest”, “to play with x”.
The whole schoolyard, no building	This drawing is from a bird-eyes view of the whole schoolyard’s natural elements : many spots of grass, a couple of trees, and at the right upon top, the trees from “the forest”. There are also smaller elements, free-shaped circular forms, that could be the bushes, stones, or their peers.
The chestnut woods – tree areas	There is a large and wide tree occupying half of the page. By the side, there are two

	children standing side-by-side with their same-sided tree. The two “friends” smile.
Open area	There are clouds in the sky and it’s raining, children are all around, some with rain clothes. Some are up in one area, while others are down, near by the “stocks to balance upon – balans stocken”. Near one child, by the right side, there is the school building, called “house”, not much larger than the child.
The house	A very small building, rectangular, in the back of the latest drawing.
The chestnut woods – “The forest” – with a hill	A hill that occupied almost all of the page, filled with colour, lignes and small elements – could be stones? Mushrooms? Much is going on in that hills. There are trees in the top of the hill, with many leaves. The child explais that “these are the trees in the forest.” A very small bush by the side of the hill, that the child described as “that’s the support home of another child (det är xxxxxx stodhem” .
The chestnut woods – “The hill”	A hill with a solid black colour occupying all page. At the top of the large hill, there is grass covering all areas and a single wide tree, standing. “I have written the hill”, says a note.
Open area	The sun on the top, and many flowers around the page. The text says “flowers in the grasslawn”.
The chestnut woods – “The forest”	Two wide trees, with a single child, the drawer, in the centre. The child has a straight mouth, not glad, not sad. The notes say “trees in the forest”.
“Bushes by the net”	The whole page is occupied with many shapes, circles, and the text says “bushes by the net”, “we have digged worms in there”. Maybe there are two children drawed there, it’s hard to tell: it’s a very full drawing with a lot happening, many forms all around.

“MIN BÄSTA PLATS – MY FAVORITE PLACE”

My favorite outdoor place	Elements of the drawings
”Hela vår gård” ”All our schoolyard”	A large tree, with a wide log and a tree top occupying all of the page. The text says: “tree.All of our schoolyard.”
“The forest”	Large and wide trees, all around the area. There is grass in the bottom and many mushrooms all around. Some bushes between the trees.
A grasslawn	Grass growing by the left, forming a hill, two very large flowers. The notes says “it is grass.”
A playground that is located in a forest in the south of Sweden (they have had an excursion with the school in this place in this semester)	A very large shape, with large traces inside. “It’s slides”, the notes say. A slide occupying the whole page, in solid grafit colour, and a child by the side, with the note “it’s myself”.
A playground	Clouds occupying the whole sky, a tree by the left, very large, which something that looks like apples on the top and with a small door at the centre of the tree – maybe an animal lives there, I think? One child stands by this tree. The other child is climbing the latter of a very large slide, that occupies almost all of the page. The notes say: “it’s a playground.”
Alnarp	8 rectangular tree-logs, without the tops, occupying all page, very close together. The note says: “it’s the forest, Alnarp, I like Alnarp”
“The blue playground”	A bench in a area with very tall greass, a large slide on the right side, and three swings, two smaller, one larger, by the right. The text says: “This is the blueplayground, I like it best in the blue playground.”
“Grass and flowers”	Green grass covering all bottom, and blue form, maybe a river, upon the green grass.

	Standing upon everything, black and white flowers. Notes says: "grass and flowers".
"A playground"	There are two large oval forms by each side, they are marked as "grasslawns". In the centre, two large swings, and grass in the bottom. The notes say "a playground".
"The forest"	Green grass occupying the bottom, many mushrooms and flowers all around the drawing, between tall and wide trees. A river passes by the area, and the sun shines by the right side.
"Grass and the sky"	Green grass occupying all of the bottom, and a blue page depicting the sky.

9.6 Appendix F - Popular science press-release

Natur och förskolebarns utveckling



Hur kan barns erfarenheter av närområde och natur i förskola stödja deras utveckling? Detta har undersökts i ett examensarbete riktat mot en förskola i Sverige. Genom att ge barnen flera möjligheter att besöka och leka i närområdet och naturen fick de många kreativa erfarenheter. Den fysiska platsen kan spela en avgörande roll för barnens lärande, och det skulle kunna användas som en resurs i utsatta områden.

Miljöer där barn växer upp är viktiga för deras utveckling. Barn i låg-socioekonomiska områden är utsatta för olika upplevelser som kan påverka deras kognitiva, emotionella och sociala utveckling och lärande negativt. Under 2020-2021 har ett examensarbete utförts för att undersöka hur barn som växer upp i en lågsocial ekonomisk stadsmiljö förstår, använder och upplever olika utomhusplatser i deras vardag. Den här studien hade som mål att förbättra vår förmåga att ge barn möjlighet till lek i miljöer som bidrar till kognitiva, emotionella och social utveckling.

Barnens upplevelser av platser

Under höst 2020 följde studien en förskolegrupp i ett utsatt område i södra Sverige i deras vardag. Barnen fick möjlighet att besöka SLU Landskaps laboratorium, ett område med olika sorts

landskapen och natur som används för studier. Landskapslaboratorium är en stor park som är uppbyggd av flera olika naturliga miljöer som erbjuder barnen möjligheter till lek.

Studien byggde på en metod som lät barnen ge all central information själva. Både under utomhuslek och i deras inne miljö. Den huvudsakliga metoden var deltagande observation, och andra metoder var workshops, en barnledd promenadintervju, och intervjuer av pedagoger. Resultat presenterades i narrativ och tematisk form. Resultat har även en *narrativ karta*. Det är en visuell representation av hur barnen uppfattade olika platser. Den illustrerar hur dessa barn, även utan att ha lekredskap, kunde skapa egna platser och verktyg som hjälpte dem att leka på ett varierande och kreativt sätt.

Fri lek och naturen

Studien visade att fri lek utomhus på platser med varierad natur gav många möjligheter för barnen att få positiva upplevelser, som lek och rörelse, sociala interaktioner, och att ansluta till de lokala områdena och naturen. Resultatet belyste hur miljöer som barn kunde påverka gav möjlighet till informellt lärande och "sjävlärande" aktiviteter. Alltså, en möjlighet för barn att lära sig om och skapa en positiv förståelse av världen omkring dem.

Utflykter för barnens lärande

Förskolans besök på Landskaps laboratoriet i Alnarp verkade göra avtryck på barnens lek på skolgården. Aktiviteter som uppkommit naturligt i Alnarp kunde ibland fortsätta på skolgården. Vilket ledde till kreativare lek med det som fanns att tillgå.

Regelbundna promenader i kvarteret gav barnen positiva relationer till området. Studien visade att det skolan hade ett stort påverkan på barns upplevelser och förståelse av deras grannskap och natur.

Samarbete mellan stadsplanering och pedagogik

Som vi vet beror barns utveckling på deras miljö. Studien föreslår därför förbättringar av miljön i utsatta områden som kan gagna barns utveckling. Samt en pedagogisk praxis som ska hjälpa barn att göra det bästa av den miljö de har. Den här kunskapen kan appliceras i alla förskole sammanhang oavsett socioekonomisk status.

