

Háskólinn á Akureyri
Hug- og félagsvísindasvið
Kennaradeild
2013

Outdoor learning in the early years

The benefits of outdoor learning in a natural environment

Rachel Wilkinson
Lokaverkefni

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Lokaverkefni til 180 eininga B.Ed.-prófs

Ég lýsi því hér með yfir að ég ein er höfundur þessa verkefnis og að það er ágóði
eigin rannsókna

Rachel Wilkinson

Það staðfestist hér með að lokaverkefni þetta fullnægir að mínum dómi kröfum
til B.Ed.-prófs í kennaraskor hug- og félagsvísindadeildar

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Abstract

This thesis was completed in the spring of 2013 towards a B.Ed.-degree in teaching from the University of Akureyri. It discusses the concept and benefits of outdoor learning in a natural environment during early childhood. A variety of natural environments and the learning opportunities they provide are explored. Teaching activities for use during outdoor learning sessions in a variety of natural environments, including how to create a natural area within a preschool, are put forth.

In today's society an increasing number of children have become detached from nature and spend less time exploring the world around them. As a result, children are growing up not knowing how to interact with or respect nature. Spending less time outdoors means children are not able to develop their gross motor skills, or get the exercise they need. Outdoor learning allows children to learn in ways that cannot be applied indoors. Outdoor learning provides children with first-hand experience, and an environment where they are free to discover and explore in their own way. Research indicates that learning outdoors benefits many aspects of children's lives, including their health and wellbeing.

Preschools can provide children with the opportunity to learn in and from nature. This can be achieved in a variety of ways, from the Swedish concept of a forest school, to the Czech Republic idea of bringing nature to children. Even a small vegetable garden in an urban preschool provides children with many learning opportunities. Research suggests that children, who learn about nature from a young age, are more likely to respect it during their adult years. This is one of the reasons why it is important for preschools to allow children to interact with nature in various ways.

To experience outdoor learning in action and as preparation for the webpage created to coincide with this paper, observations of preschool children during a weekly visit to a forest were made. Observations included how the teachers used the outdoor environment to teach the children, and how the children used the environment to play, interact and learn. Photographs of the children were taken for use in this thesis. Finally a website was created as a teaching resource for outdoor learning. The observations made during the forest sessions supported the findings of other research on outdoor learning. It is clear that young children benefit from outdoor learning in many ways: being outdoors increases a child's wellbeing, provides them with learning opportunities that are not available indoors, and encourages them to explore the world around them.

Útdráttur

Þetta lokaverkefni til B.Ed prófs í kennarafræðum við Háskólann á Akureyri var gert vorið 2013. Í því er fjallað um hugtakið útinám og ávinning af slíku námi í náttúrulegu umhverfi fyrir börn á leikskólastigi. Í verkefninu er leitast við að skoða mismunandi náttúrulegt umhverfi og möguleika sem slíkt gefur í starfi með börnum. Einnig eru í verkefninu skoðaðar kennsluaðferðir við mismunandi aðstæður í náttúrulegu umhverfi sem og hvernig hægt er að útbúa náttúruleg svæði í og við leikskóla.

Í daglegu umhverfi nútímans hafa mörg börn fjarlægst náttúruna og verja minni tíma í að kynnast umhverfinu. Þess vegna alast sífellt upp fleiri börn sem ekki kunna að virða eða njóta náttúrunnar í kring um sig. Með því að minni tíma er til útileikja ná þau síður að þjálfu upp grófhreyfingar sínar, né að fá þá hreyfingu sem þau þarfnast. Í útinám eru möguleikar til lærdóms sem ekki gefast innan dýra. Í útinám upplifa þau eitthvað sem þau annars bara heyrðu um, þau eru frjálst til að uppgötva margt í náttúrunni og kynnast því á sinn eigin hátt. Rannsóknir sýna einnig, að útinám hefur jákvæð áhrif á fleiri þætti eins og heilsu þeirra og lífsgleði.

Leikskólar geta veitt börnum kennslu bæði í og um náttúruna. Þetta er hægt að gera á ýmsan máta, allt frá sænsku hugmyndinni um skógar skóla til tékknesku hugmyndarinnar um að færa náttúruna inn í leikskólann. Jafnvel lítill matjurtargarður við leikskóla í þéttbýli veitir börnunum ótal náms og þroskamöguleika. Rannsóknir benda til að börn sem komast í snertingu við náttúruna á unga aldri, séu líklegri til að bera virðingu fyrir henni er þau vaxa upp. Það er bara ein af mörgum ástæðum fyrir því að leikskólar ættu að reyna að láta börnin njóta náttúrunnar á ýmsan hátt.

Sem hluti af verkefninu var fylgst með leikskólabörnum í sínum vikulegu skógarheimsóknnum. Fylgst var með hvernig kennararnir nýttu sér umhverfið í skóginum til að fræða börnin og hvernig þau, nýttu sér umhverfið til að leika sér í, læra hvert af öðru og gera uppgötvanir. Myndir voru teknar af börnunum til að nota í þetta lokaverkefni. Að lokum var sett upp vefsíða með ýmsum handhægum upplýsingum fyrir kennara um útinám.

Heimsóknirnar í skógar skólann fyrir þetta lokaverkefni endurspeglar aðrar rannsóknir um útikennslu. Það er augljóst að ung börn læra og njóta útiverunnar á margan hátt, það eykur vellíðan þeirra, gefur þeim aðra möguleika til að læra sem þau hafa ekki innan dýra, og hvetur þau til að kynnast betur heiminum í kringum þau.

Acknowledgements

I would firstly like to thank the preschool teachers and children at Hólmasól for inviting me to join them during their forest sessions. Secondly, I would like to thank the parents who gave me permission to photograph their children for use in this project.

“Must we always teach our children with books? Let them look at the mountains and the stars up above. Let them look at the beauty of the waters and the trees and flowers on earth. They will then begin to think, and to think is the beginning of a real education.” David Polis

Prologue

Imagine the day of a typical preschool child. She wakes in the morning and gets ready for preschool. She walks or may even be carried to the car that is waiting outside the home. After being driven to preschool, she walks the few steps it takes to reach the entrance. She spends the majority of her day at preschool. Her day is filled with songs, stories, play activities and opportunities to learn. It is likely that she will spend some time outside. Within the fenced area she is able to run on the grass, play on the swings or dig in the sand pit. However this outside time is short, only likely to last from thirty minutes up to one hour. After spending four to eight hours within the preschool setting, the child will be driven home again.

Now imagine the day of a child who attends a preschool that promotes outdoor learning. Rather than spending the majority of the day inside the preschool, here the child will devote most the day outside. The child will have the opportunity to climb trees, jump off rocks, roll down hills, she will be free to touch, listen, taste and explore the nature around her. Every time a child runs up a hill or jumps from a tree their gross motor skills are developing. When they are asked to look for various leaves or listen to the birds their observational skills are improved. Each season will bring a new opportunity and learning experience. Instead of learning about flowers, wildlife, and trees from a book, the child will learn from the experience of watching them grow in nature. The value of these outdoor experiences on a children’s development, health and general well-being cannot be underestimated.

Table of Contents

1. Introduction	2
2. Outdoor learning	4
2.1 Outdoor learning in natural environments	4
2.2 Creating a natural area for outdoor learning	7
2.3 Outdoor learning and children	8
2.4 Outdoor learning and the curriculum	9
3. The benefits of outdoor learning	10
3.1 Learning opportunities	10
3.2 Nature	12
3.3 Health and Wellbeing	13
3.4 Risky play	14
4. Outdoor activities	17
4.1 Woodland activities	17
4.2 Coastline	20
4.3 Preschool grounds	22
5. Outdoor learning in action	24
6. Discussion	30
7. Conclusion	33
Bibliography	34
Analytical sources	34
Academic sources	34

1. Introduction

Across much of the world, many of today's children do not have easy access to open spaces, natural environments or nature. This is also the case for many Icelandic children who are growing up in urban areas. The days when adolescents spent their summers working on farms have gone. Instead children spend more of their free time indoors, watching television, or on a computer. Many children's first experience with nature is through the television or books. Young children spend a large part of their day at preschool; where they are indoors, only devoting a relatively short time to outdoor activities. It is possible, however, for preschools to introduce nature and the outdoors to young children. As more children are in danger of becoming detached from natural outdoor environments, it is important that preschools provide children with the opportunity to experience nature first hand. Even preschool's in urban areas can achieve this by creating a garden or pond area, a nature area for the children to explore, or by taking the children on frequent day trips to natural environments, such as forests or the coastline.

This thesis explores the concept and the benefits of outdoor learning in a natural environment during the early years of childhood. A number of outdoor learning activities for a variety of locations are presented. Finally, a resource website for teachers was created with ideas and information about outdoor learning in the early years. The following questions were taken into account throughout the project: *What is outdoor learning? How do children benefit from outdoor learning and learning in a natural environment in particular? How can preschool's create a natural environment within their setting?* Studies on the benefits of outdoor learning were taken into account, as well as the ideas of scholars such as, Jean-Jacques Rousseau, John Dewey, and John Locke. Observations of preschool children during a weekly visit to a forest were recorded in March 2013 in Akureyri, Iceland. The purpose of this was to observe outdoor learning first hand. The observations recorded connected the theory of outdoor learning with the practical side of learning outdoors.

In chapter 2 the concept of outdoor learning is discussed, focusing on natural environments, creating a natural area, outdoor learning and children and finally connecting outdoor learning to the Icelandic preschool curriculum. Chapter 3 looks at the benefits of outdoor learning regarding, learning opportunities, the benefits of nature, the impact it has on health and wellbeing and the opportunities it presents for risky play. In chapter 4 a variety of activities

for children in woodland, on the coastline and within a preschool setting are put forth. Chapter 5 takes a closer look at actual outdoor learning sessions. The observations made during these sessions are discussed, with reference to other outdoor learning research, in chapter 6. Finally, chapter 7 concludes the paper.

2. Outdoor learning

When people imagine a child learning they usually picture the child in a classroom, however learning can take place anywhere, outdoors as well as indoors, and in all weathers (Fabian, 2005, pg. 4). There are many ways to define outdoor learning; Phyllis Ford (1986) defined it as education in, about and for the outdoors; in 2006 it was defined as a “method of teaching and learning that emphasizes direct, multisensory experiences; takes place in the outdoor environment; and uses an integrated approach to learning by involving the natural, community, and individual environments” (Gilbertson, Bates, McLaughlin & Ewert, 2006, pg. 5). It is the combination of learning in and through natural environments, which defines what outdoor learning is for the purpose of this paper.

Outdoor learning can take place in various locations. For urban children outdoor learning could involve walking around a town looking at the shapes of buildings or the numbers on houses. An outdoor learning experience could take place in a school yard when the teacher takes the children outside to learn about light and shadow. However, this paper focuses on outdoor learning in natural environments, such as in a forest, on the coastline, or in a field. Such outdoor learning aims to teach children about nature and natural environments around them, thus helping them to discover, understand and respect them. Outdoor learning teaches children in a way that indoor learning and books cannot, as well as improving their health both physically and mentally (Helgadóttir, 2013, pg. 47). The following sub-chapters will focus on, outdoor learning in natural environments, creating a natural environment for outdoor learning, how outdoor learning can be suitable for all children, and connect outdoor learning to the Icelandic preschool curriculum.

2.1 Outdoor learning in natural environments

In recent years the idea of taking children out of tradition classrooms and into outdoor environments has become popular. In 2006 the *Learning outside the classroom manifesto* was created in England. This was based on the policy that all children should have the opportunity to experience life and learning in an outdoor environment. The Department for Education (DfES, 2006, pgs. 2 & 4) claim that young people are naturally curious and should be allowed to learn by exploring the world around them. An outdoor education program was set up in

Scotland in 2005 by the Minister for Education and Young People. Their vision was to see children taught not just in classrooms, but also outdoors in farms, parks, zoos, woodland, rivers, mountains, the coastline, gardens and moorland (Learning and Teaching Scotland, 2007, pgs. 3 & 5). In the United Kingdom there are a growing number of so called forest schools. These schools were developed in the 1990's and based on the Scandinavian belief that children should have close contact to nature. The belief is that forest education provides a hands-on learning experience in a natural environment that cannot be experienced elsewhere (O'Brien & Murray, 2006, pgs. 4 & 7).

In 1957 a Swedish man named Gösta Frohm, created a character called Mulle. Mulle was responsible for teaching the children how to love and care for nature. Frohm told the children stories about Mulle that enabled them to learn about the natural world. Frohm was also the founder of Skogsmulle, a concept that teaches about nature, natural environments and how to preserve them. Based on Frohm's concepts the first forest school was set up in Sweden in 1985. These preschools and schools give children aged from one to fourteen the opportunity to explore, climb, jump, touch and experience life in a natural environment. There are similar outdoor preschools and schools throughout Europe (Robertson, 2008a, pgs. 3 – 5; Knight, 2009, pg. 4).

In Icelandic schools the concept of outdoor education has become popular in recent years. These outdoor lessons involve children learning in and through an outdoor environment, enabling the children to use all of their senses to experience real life and nature (Jónsdóttir, 2010). Schools such as Þelamerkur in North Iceland have taken advantage of a nearby river and woodland to teach the children about nature and for outdoor lessons in mathematics (Þelamerkurskóli, n.d.). In 2013 Bláskógaskóla were given money to fund their outdoor school project to take six to seven year olds to a local forest one day a week (Kvenfélag Laugdæla, 2013, pg. 12).

Outdoor learning has also extended to a number of Icelandic preschools. The preschool Hólmasól developed a program called *Skógarskóla* (forest school), which involves going with the five and six year old children to a nearby forest one morning a week throughout the year. Here the children learn about the seasons, nature, animals, and develop their self-confidence (Hólmasól Curriculum, n.d. pg. 21). In 2008 the Icelandic preschool Tjarnarsel began a program to utilise outdoor environments as a platform to develop reading and writing skills. At the same time allowing the children to become aware of their environment, learn to respect

it and enjoying nature in all weather (Verkefni Tjarnarsels, n.d.). These programs suggest that many educators recognise the value of outdoor learning for children of all ages.

As previously mentioned many preschools are adopting the idea of forest schools. Forest areas are popular for outdoor learning as they provide a variety of opportunities: seeing the leaves changing colour throughout the year, using sticks, rocks and other natural materials to play and create, jumping from rocks, climbing trees, and walking on various terrain (Norðdahl, 2005).

Outdoor learning can take place in a variety of environments here the most common:

Woods: According to Sara Knight (2009, pg. 72), the ideal forest location for outdoor learning should include: wood for activities and construction, trunks and trees for balancing and climbing, rotting wood for searching for insects, an open space for exploration, a variety of plants for investigating, a central area for base camp and security from roads.

Coastline: The coastline is a popular place to take preschool children. On the coast children can dig in the sand, jump in the ocean, look at shells and sea life, watch the waves, and learn about life on the coast first hand (Jónsdóttir, 2010). Many preschools in Iceland take advantage of the ocean and fjords around the island by going with the children on visits to the coastline.

Fields: A walk through fields in the countryside will introduce children to various plants and wildlife, edible berries and mushrooms, and allow them to explore freely in an open space. The countryside offers children the chance to visit a farm and learn about various animals. Icelandic preschools often take children on a farm visit during the spring, where if they are lucky enough they can witness the birth of a lamb (Hugrún Ósk Hermannsdóttir, personal communication, May 2012).

To be able read nature a person has to be able to see it, experience it and therefore understand it. Denying people the opportunity to explore nature could potentially be life threatening for various wildlife and plants. For a person to want to protect nature they must first want to get to know it (Helgadóttir, 2013, pg. 21). For some preschools it may not be possible for the children to leave the preschool and experience nature and natural environments. Urban schools or a lack of funds could be an issue when considering outdoor learning. It is however,

possible for children attending these preschool to have access to nature and more natural surroundings within the preschool setting by bringing nature to them.

2.2 Creating a natural area for outdoor learning

In urban areas especially, it can be difficult for schools to have access to nature in the way of open fields, woodlands or coastlines (Rop, 2004, pg. 3). There are however ways to ensure children have the opportunity to experience outdoor learning. Within the school grounds, a nature area can be created; such an area could include a garden or pond to encourage wildlife, and plants to grow. One such preschool that has brought nature to the children is in Czech Republic. Here the children assist with gardening and planting vegetables. They have themed weeks related to nature, and the school grounds have been transformed into a natural wonderland for learning and play (Robertson, 2011). When creating a children's garden within a preschool, it should include various native and non-native plants, flowers, bushes, vegetables, habitats for birds and other animals, a playhouse, digging areas, children's tools, watering cans and hiding places (Frost, Wortham & Reifel, 2005, pg. 325). It is important that suitable tools are provided for use during outdoor learning activities. A plastic spade is likely to snap when used for digging in mud but is perfect for digging in sand (Knight, 2011, pg. 15).

According to some, many designers are failing the needs of children when creating play areas. Instead of wild adventure playgrounds that use natural elements and encourage children's minds to wonder, they are using metal and plastic to create traditional swings and roundabouts (Frost, Wortham & Reifel, 2005, pgs. 319 – 320). Creating a play area that moves away from traditional ideas, and instead uses rocks, trees, hills, and various materials such as tree bark, sand, mud and grass, are all ways in which a more natural environment can be brought into a preschool setting (Wilson, 1997, pgs. 192 – 193). The preschool playground should be an important learning environment which encourages children to play, explore, move and express themselves in various ways. For this to be possible, diversity is necessary, for example, the landscape, soil, vegetation, and other materials, should be used to encourage children to create, explore and discover.

2.3 Outdoor learning and children

Outdoor learning should be available to all children no matter their age or ability. Even very young children benefit from the experiences that outdoor learning provides. Knight (2009, pg. 1) suggests that hands-on experiences with nature should begin at an early age. Studies have shown that younger children are significantly more enthusiastic about outdoor learning than adolescents (Ballantyne & Packer, 2002, pg. 221). If outdoor learning was more common during the early years, then perhaps such studies on adolescents would find different results. Some forest schools around Europe cater for children as young as one year old (Robertson, 2008a, pg. 8). By doing so, very young children are introduced to the natural world, and a foundation is formed for their relationship with nature in the future.

Children with additional needs can benefit immensely from outdoor learning. Creating a sensory garden within a preschool setting or outdoor learning area, is one way to provide these children with the experience to explore and learn outdoors. A garden that includes various colours, textures and sounds, as well as ramps and hiding places provides a perfect outdoor learning area for children with a variety of needs (Hussein, 2010, pg. 27). Research suggests that nature and natural environments can have a positive influence on the attention and behaviour of children with Attention Deficit Hyperactivity Disorder (Taylor & Kuo, 2008, pg. 5; Van Den Berg & Van Den Berg, 2010, pg. 437). This suggests that children with additional needs should be given the opportunity for more outdoor play and learning.

Outdoor learning is beneficial to all children; therefore it is important that the activities are suited to each child's ability. In Swedish forest schools children are grouped together with other children of the same or similar age, and activities are selected based on the ability of each group. The youngest children explore in the woodland closest to the preschool building, while older children are taken further into the forest (Robertson, 2008a, pg. 7). Routines and boundaries must be established early. Plenty of time must be taken at the beginning of each day to ensure that the children understand these boundaries, and that they are able to follow them (Robertson, 2008b, pg. 2).

2.4 Outdoor learning and the curriculum

There are a number of factors in the Icelandic preschool curriculum (Ministry of Education, Science and Culture, 2011, pgs. 18 – 44) that support the concept of outdoor learning and play. The curriculum states that children should “know, understand and respect nature” and activities that promote respect for nature should be encouraged. Preschool teachers should support children’s natural curiosity for their environment, and use this to teach them about the world around them. They should also keep in mind that nature offers a variety of materials and opportunities for exploration and discovery. Many of which can be found in the preschool setting. Daily activities must encourage health promotion and improve the children’s overall well-being. The curriculum states that these activities should include daily exercise that improves motor skills, and builds the foundation for lifelong physical, mental and social wellbeing. Creativity is important for preschool children. According to the curriculum, creativity involves curiosity, a challenge and excitement. The role of the preschool teacher is to provide a diverse environment for children to examine, create and solve problems, enough space for play and development, support for spontaneous activities and interests, and opportunities for outdoor and indoor play.

Preschool teachers should work with the curriculum when organising outdoor learning activities or outdoor learning areas. The following chapter will discuss the benefits of outdoor learning with the preschool curriculum in mind as well as the findings of researchers.

3. The benefits of outdoor learning

This chapter will look further at the benefits of outdoor learning. The learning opportunities that can be experienced in an outdoor environment, the benefits of spending time in nature, the benefits spending time outdoors has on health and overall wellbeing, and finally the risky play factor often associated with natural environments are all taken into account.

3.1 Learning opportunities

As many children spend most of their day at preschool, teachers play an important role in teaching children about nature and the environment. It is important that children learn how to respect the environment from a young age. Researchers agree that children who spend time in nature and are free to explore natural environments, are able to relate to nature, and therefore respect it. Teaching children to not leave litter on the ground or damage plants, and to replace insects in the area they were found, helps build the foundation for preserving and respecting nature now and in the future. Planting trees, vegetables and plants, and allowing the children to touch, smell and tend to them, encourages children to respect and understand nature. Creating a preschool garden also provides children with opportunities to dig, explore, and learn about the natural world (White, 2004a; White, 2004b; Wilson, 1996; Norðdahl, 2005; Wilson, 1997, pg. 193).

Learning through outdoor play and activities during the preschool years should be based on the joy and wonder of discovery (Wilson, 1996). Even very young children can learn vital skills in an outdoor environment. Activities that are usually confined to indoor areas often provide more learning opportunities when done in the outdoors. Huggins and Wickett (2011, pg. 23) point out that picking up objects and putting them into a bucket is a much more interesting and unpredictable experience when done outdoors using stones of various shape, size and colour. The outdoors also proves children with a more stimulating environment in which to learn; the sound of the wind in the trees is contrasted with an airplane flying overhead; the roughness of tree bark is contrasted with the soft, stickiness of wet mud. This wide range of sensory experiences can only be found outdoors and creates a diverse learning environment.

The materials found in a natural environment are tools that can help develop children's skills. Sand, grass, mud and branches provide children with everything needed to create, build and play with. Mud and soil provide areas for digging, exploring and imaginary play. Earth when wet turns to thick, sticky mud, this can be used as clay and moulded into shapes and pictures, and words can be drawn into the mud with fingers or sticks. When the earth is dry it provides a surface for pictures and art work. Rather than discouraging children to pick up mud, they should be encouraged to experience its texture. Young children especially, enjoy squishing it through their fingers (Knight, 2011, pgs. 11 – 15). This is a sensory experience that children should not miss just because it is messy or dirty. Learning how to clean hands after an outdoor session is an important task for young children to learn (Huggins and Wickett, 2011, pg. 23).

From her research on outdoor learning, Norðdahl (2005) found that children's vocabulary increases when given the opportunity to learn in an outdoor environment. The children in her study were able to learn, and became more interested in learning, the names of the flowers, trees and animals around them. By allowing the children to spend extended periods of time outdoors, they felt free to explore and discover. The children noticed the changes taking place around them during each season, such as, the new flowers in the spring and the leaves changing colour in the autumn. All of these observations prompted the children to involve themselves in activities and learn about why these changes occur. Other researchers (Dowdell, Gray & Malone, 2011, pg. 23) have also found natural environments support and increase children's imaginative play, and their interest in the world around them.

Spending time outdoors teaches children how to deal with various weather conditions (Knight, 2009, pg. 16). Children should experience the outdoors in all seasons. The children in Swedish forest schools only go indoors if the temperature falls below -10°C, and spend 80% of their time outdoors throughout the year (Robertson, 2008, pg. 9). Spending time outdoors in all weathers teaches children not only about the different seasons, weathers and effects of weather but also how to dress appropriately. On her visits to Swedish forest schools, Robertson (2008c, pg. 8) found that all the children were suitably dressed for the weather conditions. A study (Hatcher & Squibb, 2011, pgs. 343) on teachers working in traditional preschools, found that teachers find it challenging to dress children for outdoor play in winter months, therefore try to rush the process. The children on the other hand, found it interesting and often wanted to learn about the clothes they were putting on. It appears from this study that children would benefit from the forest school approach. Spending more time teaching

children about clothing, and allowing children to ask questions freely about the clothes they have to wear in various weather conditions.

Outdoor learning provides children with hands-on experiences that can often not be replicated in an indoor environment. Both John Dewey and Johann Pestalozzi believed that children learn by doing. Dewey suggested that education should be based on a child's own interests, activities and instincts (Pioneers in our Field, 2000). Hands-on experiences that children gain from nature and outdoor activities are therefore essential to their education. Many outdoor learning opportunities arise from children's interest in what they see and experience.

3.2 Nature

The benefits of spending time in nature have been a talking point throughout the centuries. Jean-Jacques Rousseau believed that living in nature would lead to a virtuous life. Nature also had a strong influence on Rousseau's theories of education (Doyle & Smith, 2007). Similarly, John Locke believed that curiosity is what motivates children to learn, and through nature children are able to ask questions and find answers. Locke believed that a happy child was one that was assisted in exploring the world (Gianoutsos, 2006, pg. 3). Today, nature and the benefits of using it for educational purposes are still at the forefront of many theorist's and researcher's minds.

When children have access to nature they are not only playing in it but also playing with it (Erickson & Ernst, 2011, pg. 97). In other words they are experiencing everything that nature offers, and awakening all the senses, as well as their imaginations. A study on the benefits of engaging with nature (Hansen-Ketchum, Marck, Reutter & Halpenny, 2011, pg. 567), found that when people spend time in a natural environment they feel a sense of peace, comfort and wellbeing, and such environments provide them with opportunities for physical and imaginative free play. Evidence was also found to support the idea that spending time in nature as a child encourages them to take care of it, and learn more about it as an adult. However, according to Sobel (2008, pg. 11 & 20), school children who are expected to learn about natural environments, and nature without ever leaving the classroom, are likely to become discouraged from wanting to learn more in the future. Sobel argues that schools need

to provide children with opportunities to experience nature first-hand and by doing so are providing them with a rich learning experience.

When learning indoors, children are usually expected to concentrate on one task at a time. In nature however, they are free to let their minds wander. According to Erickson and Ernst (2011, pg. 98) this allows parts of the brain time to rest and recover. Researchers have found that children with ADHD and other additional needs can benefit greatly from spending time in nature. These benefits were presented in section 1.3. There have been many studies on the benefits of spending time outdoors; some of which will be discussed in the next section.

3.3 Health and Wellbeing

There are many problems with obesity in the world today, with childhood obesity on the increase. In 2010 there were over 40 million overweight children in the world (WHO, 2012). Being overweight in childhood often leads to more problems in adulthood. The main causes for childhood obesity are an increase in energy intake i.e. food, and a decrease in physical activity (Deckelbaum & Williams, 2001, pg. 242). Today children spend more time watching television and playing indoors than they do being physically active outdoors (McCurdy, Winterbottom, Mehta & Roberts, 2010, pg. 103).

Research suggests that the policies, programs and the environment of preschools have the potential to influence the activity levels of young children (Pate, Pfeiffer, Trost, Ziegler & Dowda, 2004, pg. 1261). A number of preschools in Iceland have a health promoting policy, which encourages the children to explore movement through various methods. In 2011 the preschool Álfasteinn began working with this policy. The children are encouraged to become more active through movement and dance, and they take regular walks in the woodland next to the preschool (Hugrún Ósk Hermannsdóttir, personal communication, February 2013).

There are other ways preschools can encourage children to become more physically active. Providing a natural environment within school grounds is one way to promote outdoor activities (McCurdy et al., 2010, pg. 108). If children are more active during their preschool years they are less likely to suffer from obesity later in life. Therefore, it is important to establish an active lifestyle during these early years (Moore, Gao, Bradlee et al., 2003, pg. 16).

Spending time in a natural environment has other benefits, such as improving the development of children's gross motor skills. A study carried out by Fjørtoft (2001, pg. 115), found that children playing in a forest environment performed better in a motor fitness test than children playing in a traditional playground. By the age of three most children are capable of jumping, running and hopping. A four year old has developed their gross motor skills further, allowing them to becoming more adventurous in their physical actions. Once a child has reached the age of five, they often have no fear of climbing high and racing with their peers (Santrock, 2008, pg. 241). Natural environments provide children with a rich and dynamic environment in which to develop these motor skills. Slopes and rocks give children obstacles that they can climb up and jump from, vegetation provides areas for shelter and trees for climbing, and open spaces give children the opportunity to run and tumble (Fjørtoft, 2001, pg. 111).

According to some preschool teachers many young children find it difficult to walk on uneven surfaces, such as slopes and rocky ground. By providing young children with a variety of surfaces to walk on their abilities are able to develop (Hugrún Dögg Harðardóttir, personal communication, February, 2013). Knight (2011, pg. 16) agrees that outdoor environments provide challenges for children. When confronted with a slope children have to ask themselves how they will get down the slope, and if it is safe for them to do so. Small slopes are ideal for young children, whilst older children will search for steeper and longer slopes. Such challenges found in nature teach children how to deal with various situations and give them the confidence to face similar challenges in the future.

The Icelandic preschool curriculum (2011, pg. 21), states that preschools activities should encourage: health and wellbeing, and an environment should be created that contributes to a healthy lifestyle and improves motor skills. As research suggests, outdoor learning provides children with exercise that improves their motor skills, in an environment that is beneficial to their overall wellbeing. Taking the time to get to know nature and local environments encourages people to take of it and ultimately enjoy it more than before (Hansen-Ketchum, Marck, Reutter & Halpenny, 2011; Helgadóttir, 2013, pg. 24).

3.4 Risky play

Risky play is often defined as play that provides opportunities for challenge, testing limits,

exploring boundaries and learning about injury risk (Little & Wyver, 2008). According to Knight (2009, pgs. 1 & 6; 2011, pg. 35), outdoor learning provides children with the opportunity to engage in a riskier experience, where they can seek out challenges. It also provides both risk and responsibility, which lead to children becoming more self-confident and independent.

In today's society there are an ever increasing number of rules and regulations in play areas, such as, no ball games and no climbing. According to an article by Little and Wyver (2008), social and environmental factors are impacting children's opportunities for outdoor play. Parents are often too concerned about increased traffic and other dangers to allow their children to ride bicycles, play games and explore outdoor areas. Instead children are limited to playing in their back gardens or local parks. Knight (2009, pg. 34) believes this has a negative impact on children's wellbeing and behaviour. Due to this over-regulation of play areas, children are unable to engage in risky play and are therefore unable to learn about dangers and risk taking.

Furthermore, researchers argue that current outdoor areas in schools, as well as traditional play areas, do not offer enough risk taking opportunities for children (Little, Wyver & Gibson, 2011 pg. 129). Sandseter (2009) however disagrees, suggesting that natural play areas only offer a higher level of risk, not more opportunities for risk-taking play. In her study comparing the opportunities for risky play in both a traditional and natural playground, she found that children will search for risky play opportunities in any play environment. Sandseter does however agree that a natural play environment offers children "more intense, exhilarating, and thrilling play" experiences than a traditional playground.

Children enjoy taking risks and finding ways to cope with challenges. Schools should provide children with outdoor areas where they can engage in positive risk-taking situations, challenges and excitement. A failure to provide children with these experiences could cause problems with their health, wellbeing, and development at a later stage (Little & Wyver, 2008). The excitement of mastering a new challenge that is risky, yet within the child's limits, is often the driving force behind risky behaviour (Stephenson, 2003). Coster and Gleeve's (2008) found that the feelings associated with risky play such as fun, enjoyment, excitement, thrill, pride, achievement and good self-esteem were reasons children often give for engaging in risky play.

In light of the aforementioned research it seems appropriate that children should have the opportunity to engage in riskier outdoor activities. Nature provides children with a natural area and objects where they can engage in risky play, such as climbing, jumping and running. If such areas are not available, the children could benefit from a play area within the preschool that offers riskier experiences. There are many possible activities that can take place in various locations that provide children with a variety of learning opportunities.

4. Outdoor activities

The following chapter will look at a number of outdoor activities for young children. These activities have been collected over time by the author of this thesis. Many of the ideas came from observations of children in natural environments and others were games played by the author during her own childhood. The first section will focus on activities for a woodland environment, the second section will focus on activities for the coastline, and the third section will focus on activities within the preschool grounds. All the activities can be adapted to suit the age and abilities of the children. They can take as long or short a time as needed and should follow the interests of the children.

As part of this thesis a website was created as a teaching resource for outdoor learning. The website discusses the benefits of outdoor learning in a natural environment. The following activities are also included on the website, as are a number of photographs taken during a variety of outdoor learning sessions. The website is open for anyone who is interested in outdoor learning in general or those looking for outdoor activity ideas. The website will remain active with the hope of encourage more teachers, parents and children to explore and learn from the natural world around them. The website can be found at: <http://earlyyearsoutdooreducation.wordpress.com/>.

4.1 Woodland activities

Woodland areas provide a stimulating but relaxed environment with which to learn in. This is the ideal environment for children to learn through engaging with nature, the seasons, and the elements, as well as their own curiosity. The aims of the following activities are to:

- Create opportunities for children to learn and discover through nature, play and discovery.
- Develop an awareness and respect for nature, the changing seasons and rhythms of the year.
- Develop each child's sense of independence and self-confident.

Activity 1 – This activity should take place indoors before going to the outdoor area. It should be the first activity before beginning any outdoor session. Gather the children together and discuss how the weather is outside, and what clothes they should wear in that particular weather. The children should be encouraged to give reasons for why they wear a particular item in certain weather condition. The teachers should spend time explaining the importance of clothing, for staying cool, warm, dry and so on. Children should also be encouraged to dress themselves.

As previously mentioned, Hatcher & Squibb's study (2011) found that preschool children enjoy getting ready for outdoor activities, however many teachers rush this process and are not giving children the opportunity to learn about clothing and weather. By taking the time to making this an enjoyable daily activity, children have more time to dress themselves and teachers have the opportunity to talk to the children without feeling they have to rush to get outside.

Activity 2 – Children are curious about the world around them. This could be encouraged by giving the children magnifying glasses for a closer look at the forest. Allow the children time to explore with the magnifying glasses, interesting places to look are trees, fallen branches, leaves, insects and under rocks. After enough time to discover the forest closer, the children should gather in a circle and discuss what they found that interested them. They could also draw anything that interested them.

A magnifying glass allows children to get a closer look at the work around them. Looking at spider or a leaf through a magnifying glass gives a much more detailed image of the subject. To understand the changes in and importance of nature, children have to experience them and in doing so they become interested in the natural world. By becoming interested in nature they are more likely to want to learn how to preserve it (Ministry of Education, Science and Culture, 2011, pg. 18).

Activity 3 – This activity can be done with all aged children and varied slightly to appeal to all ages. The children lie down or sit against a tree facing various directions, then discuss what they can see from their view point. This activity will help to increase the children's vocabulary, attention and visual awareness. Older children can be asked to discuss not only the names of what they can see, but also the colours, amounts and shapes of the objects they can see.

Activity 4 – This activity is similar to the previous one, however focuses on listening skills, rather than visual skills. The children lay or sit down and close their eyes. They are asked to listen to the sounds around them. The teacher then gathers the children together, and they discuss the kind of noises they heard and what they think made the noise.

The previous two activities increase children's learnability through various skills: visual, listening, communicating and so forth. According to the Icelandic preschool curriculum (Ministry of Education, Science and Culture, 2011, pg. 23), children should learn through their own natural curiosity, their motivation and the belief in their own abilities. In order to acquire new skills children need opportunities to work on tasks that are connected to their everyday life and environment.

Activity 5 – This activity is designed for older children (4 years onwards), however with a few adjustments it can also be suitable for younger children. The activity involves the children walking blindfolded along a nature trail in the woodland. There are a number of methods to carry out this activity. The first method and the one that is more suitable for younger children, is to create a nature trail around the woodland using a rope. The children are blindfolded (young children or those that find it uncomfortable to be blindfolded, should be allowed to walk along the trail without the use of a blindfold), and they all hold on to the rope and walk slowly. The teacher calls out stop at various points, indicating for the children to reach out and touch, smell or listen to something of interest.

The second method more suitable for the older children, involves the children working together in pairs. The aim behind this activity is to encourage trust and strong bonds between the children. One child is blindfolded whilst the other will act as the guide. The guide has to direct the blindfolded child along the trail by giving commands such as, walk forward, stop, and step down and so on.

Activity 6 – Gather the children in a circle with their eyes closed. Pass an object to each child, such as a stick, leaf, stone, or pine cone, and ask them to feel it or smell it. Give the children time to do this before asking them what they think their object is.

This activity encourages the children to use their existing knowledge and senses to gather new knowledge. Preschools must provide a stimulating environment through which to learn from (Ministry of Education, Science and Culture, 2011, pg. 24). As Norðdahl (2005) found,

children's vocabulary increases when spending time in nature, this activity supports that idea by allowing the children to learn names of objects in nature.

Activity 7 – Read a story and sing songs sitting under a tree or on a circle of logs. The children could also be given the opportunity to stand in the centre and tell their own story. The stories could be based on life in a forest, such as stories about woodland animals, fairies, fantasy stories, protecting woodland areas and so on.

Literacy and language development are important aspects of preschool learning. Preschool teachers should encourage children to listen to stories and sing songs, as well as express themselves. Through such activities children's language skills are developed by learning new words and concepts (Ministry of Education, Science and Culture, 2011, pg. 34).

Activity 8 – Give each child a basket and ask them to collect any objects in the woodland they find interesting. With the objects the children can create collages and pictures to be displayed at the preschool.

Creativity is important for preschool children as it gives them an opportunity to express themselves and use their imagination. Preschools should provide children with opportunities to stimulate their imaginations and creativity, and express themselves through visual art, movement and play (Ministry of Education, Science and Culture, 2011, pg. 34).

These are just a few of the many activities that children can enjoy and learn from during their time in a woodland area.

4.2 Coastline

The coastline provides children with many learning opportunities. Below are a few activities that children can engage in during coastal visits. The following activities aim to:

- Teach children to respect the environment
- Learn about life on the coast
- Develop sensory awareness

Activity 1 – The tide often washes up litter on to the land. A trip to the coast is a good way to teach children about why litter should not be dropped on the floor. Ask the children to gather

litter into bags and then place all the litter in a pile. Have a short discussion with the children about the litter, encouraging them to ask questions. Explain to the children what damage the litter can do to the animals that live in the ocean and on the coast. Discuss with the children what they think should be done with the litter. Can it be reused or recycled? Eventually the litter can be taken to be recycled, involve the children in this. This activity could be part of an on-going project teaching the children about recycling and reusing waste.

This activity provides children with education for sustainability, which is an important topic when teaching children about environmental issues and encouraging them to take an active role (Ministry of Education, Science and Culture, 2011, pg. 18 – 19). Children who take part in activities such as recycling and reusing from a young, are likely to continue to practise them into their adult years, especially when they are able to participate in a practical way (Witt & Kimple, 2008).

Activity 2 – Take the children on a walk along the coast, on the sand and near the ocean. Try to spot any animals. Encourage the children to look in the air for birds, along the water's edge and under any rocks. Photographs of the animals can be taken either by the children or the teachers. Once back at the preschool these photographs can be looked at and used during activities. The children could also use the photographs to draw the animals for a wall display.

Activity 3 – Allow the children to gather various items from the coast such as, sand, shells, and seaweed. Once back at the preschool the children can create coastline pictures with these items. A display shelf for some of the objects could also be set up in the preschool.

This activity allows the children to be creative with natural objects. Creating a display shelf helps the children to remember the experiences had on the coast, while keeping the coastal theme alive within the setting.

Activity 4 – This activity focuses on giving the children the opportunity to explore with their senses. Allow the children to take off their shoes and wade in the ocean. Explore various textures, such as dry and wet sand. Show them what happens when water is mixed with dry sand. Tell them to close their eyes and listen to the sounds they can hear. Allow them to pick up handfuls of sand and let it run through their fingers.

Sensory experiences are enjoyable for young children as well providing opportunities to learn. Knight (2011) believes such experiences should be available to all children, even the very

young. It is the sounds, textures, smells and sights in nature that makes the outdoors such a diverse environment in which to learn.

4.3 Preschool grounds

There are many outdoor activities that can be done in the grounds of a preschool. These activities can be done at any time as they do not require the children to leave the preschool and very little preparation is needed.

Activity 1 – This activity could follow on from activity 1 in the coastline section. Gather some waste and reusable materials such as plastic, paper, glass and vegetable peelings and allow the children to bury them in a small section of the garden. After a few weeks/months dig up the litter and see what has happened to the buried waste. Some of it could have decomposed and some may have remained the same. This is a good way to teach children why waste should not be left on the ground; as well showing them which materials decompose and which do not.

This activity expands on the learning opportunities of first activity in the coastline section. This first-hand opportunity to see the effects of dropping litter on the ground encourages children to think about waste management now and in the future. This activity furthers the children's understanding of sustainability within a context that they can understand.

Activity 2 – Create a vegetable garden with the children, potatoes, carrots and lettuce are good vegetables to begin with. This is an activity that all the children and even parents can become involved with. Every child will be able to help with digging, planting and watering the vegetables. Over the weeks they can watch them grow and eventually pick them. The vegetables can then be used for the preschool lunches. A similar activity is giving the children the opportunity to plant flowers around the preschool grounds and tend to them during the summer.

This activity encourages children to learn about nature first-hand. Very little space is needed for such a garden but as is done in the Czech Republic preschool previously mentioned, nature is brought to the children.

Activity 3 – This activity is aimed at older children and involves them learning about shadows. In the morning go with the children outside and find a long shadow, either from a tree, a fence or a post. The children place a row of stones along the shadow. Later, they return to the stones and will notice that the shadow has moved. The teacher and children can discuss what they think has caused the shadow to move.

For this activity to be successful it is important that the teacher is clear and straight forward in discussions with the children. Discussing ideas about why the shadow has moved can help the children gain better understanding, as well as provide them with the opportunity to explore the subject further. It is important that the teacher acts as a guide to steer the children in the right direction (Asoko og Scott, 2006, bls. 158-164).

Activity 4 – There are many games that can be played in the preschool grounds to help children learn about shapes, colours and letters. The games should be adjusted to suit the children's interest. One such game involves the teacher saying "I spy with my little eye, something that is red/yellow/blue". The children have to guess what it is that the teacher can see. The children can also be given the opportunity to play this game alone. Older children can play this game using shapes or letters by saying "I spy with my little eye something that begins with the letter S/something that is a circle".

This game uses visual clues to stimulate children's language skills. According to the preschool curriculum (Ministry of Education, Science and Culture, 2011, pg. 34), "preschool should use everyday relations to stimulate children's sense of the Icelandic language by learning new words and concepts and developing their language."

Activity 5 – This activity can take place throughout the year. Each child practises writing their name in the snow, sand or mud, by using a stone, their finger, or a stick. Younger children can practice writing the first letter of their name, while older children can try to write their full name. The children can also use materials found in the preschool grounds, such as sticks or stones, to create letters.

5. Outdoor learning in action

In January 2008 the preschool Hólmasól began a forest school program for the five and six year old children. The teachers researched a local forest to find suitable areas for the forest school to take place. Each of these areas provides the children with different trees and plants, terrain and surrounding views. The goal of the program is to introduce the children to nature and everything nature has to offer. With this in mind a number of activities and methods were created to awaken the children's interest whilst in the forest. A check list of items to take to each forest session was made, this includes: a first aid kit, mobile phone, camera, note book, various items to use when exploring, drinks and snacks, and cups. Finally all the necessary information was passed on to the parents. The parents response to the program was positive and encouraging (Ólína Aðalbjörnsdóttir, personal communication, March 2013).

On March 12th and 19th 2013 I joined a group of preschool children, aged five and six on their weekly visit to a local forest area. The preschool is located in the centre of a town residential area. The children spend one day a week in the forest throughout the year. The only time the forest session is cancelled is if the temperature falls below -10°C or if the weather is very windy (Alfa Björk Kristinsdóttir, personal communication, 12th March 2013). Observations, notes and photographs were collected during the time spent in the forest area. The observations made during the visits to the forest included, how the teachers used the forest as a learning environment, how the children used the environment to play, interact and learn, and how the children coped with climbing, walking down slopes, and walking over uneven terrain. The main objective was to find out if the theory of outdoor learning was evident during these outdoor learning sessions.

During the first forest school session the weather was cloudy, the temperature was 3°C, and there was quite a lot of snow on the ground. A bus drove the children to the forest area at 9.15. On arrival the children were told to find their partner, and hold hands when walking into the forest.



The children walked for ten minutes over snow covered ground, and along a wooden bridge. Along the way the children were very interested in rabbit tracks left in the snow. They often stopped to look at trees and listened carefully to the sounds of the birds. The teachers used this opportunity to ask the children if they knew the names of the birds or trees. The group arrived to an area where they were able to explore and enjoy free play. Later they sat down in the snow for hot chocolate and sandwiches before walking back to the bus. They arrived back to the preschool at 11.30.





Much of what I observed during the forest school sessions mirrored the research on outdoor learning previously mentioned in this paper. The children enjoyed their experiences in the forest. They were free to learn by experience in a way that would not have been possible in the preschool setting. The first observation I made was how stable the children were when walking through deep snow, and up and down slopes. As previously mentioned the children were required to walk along a bridge. This bridge was covered in snow and included some steep slopes that the children had to deal with. On reaching these slopes the children had to judge for themselves if they could walk down

safely, or if they would have to slide down. Only one child had difficulty on the bridge when her boot became caught in a hole. One teacher told me that when the children first began the forest school some of them were not used to walking on unstable ground, and they often complained that they were tired, or fell over. After a few sessions in the forest the children became more stable when walking along the forest terrain and were more comfortable walking for longer periods (Guðný Ósk Gylfadóttir, personal communication, March 2013).

When the children first began the forest sessions they are told the rules and why they are important. These rules include: walking into the forest in pairs, staying in sight of the teachers at all times and not leaving anything behind in the forest (Hafðís Jakobsdóttir, personal communication, March 2013). During my visits all the children obeyed these rules, and although they spread out far into the forest to play, they always stayed within sight of a teacher. During the winter the forest path is often used by ski walkers. So as to not ruin their track the children told me to walk on the other side of the path, all of the children respected this when entering the forest. After eating, each child cleared away their cup and made sure not to leave anything behind when they left.

The main topic of conversation among the children was rabbits. As soon as they entered the forest area they began searching for rabbit tracks in the snow. They were able to differentiate between tracks made by rabbits and those made by birds. The children gathered around holes,

exploring them and trying to find signs that a rabbit might live there. I spent a long time listening to the conversations the children had near these holes. A group of 5 girls found a rather large hole which they believed was a rabbit's home. They spent a long time discussed how to get the rabbit out. One girl suggested they should wait until it was time to eat then the rabbit would come out to find food. Another girl was very worried because she believed the rabbit had gone down the hole as a baby, but since then had grown and was now too big to get out. She suggested that they should find some magic sticks and turn themselves into rabbits so they could go down the hole and help the rabbit out.



Some of the boys were less interested in the rabbits and enjoyed more hands-on play. They spent a long time climbing the trees, or collecting fallen branches. Various roles were adopted and materials found in the forest were used as props. Branches and smaller sticks became swords, guns, or bow and arrows, which the boys proceeded to fight or hunt with. One boy shouted

that he was the king of the forest and was going to knight another boy with his (stick) sword. Sticks were also used for digging, writing and drawing pictures in the snow. One boy put snow on the end of his stick and explained it was an ice lolly.

During the forest visit I asked a few of the children what they enjoyed about the forest school. Every child said that they really enjoyed the forest sessions even if it is really cold. Some claimed they enjoyed it because it was fun to walk along the bridge, others said it was fun to eat outside, while a few said they enjoyed



it because they could run and climb. All the children I asked agreed that playing in the forest was more fun than in the preschool. The teachers said they also enjoy the forest sessions as it

is good to have a change of scenery, and watch the children have fun and learn in a different and diverse environment.

The forest environment gave the children many learning opportunities, as well as space to explore and play. Their gross motor skills had improved greatly since their first visits to the forest. Further research is necessary to determine whether this gross motor development is due to walking in the forest alone, or if other factors, such as natural development played a part. The children were able to distinguish between rabbit and bird tracks in the snow. The teachers encouraged the children to guess the name of trees, or the names of the birds they could see and hear. If the children did not know the names the teachers would tell them. The teachers also pointed out the differences in the trees, some were leaf trees and others pine trees. The children wondered if the trees with no leaves were cold. One child suggested knitting a blanket to keep these trees warm. The children also had the opportunity to learn through free play. They engaged in fantasy play, discussed problems with each other and how to solve them, were able to explore their surroundings, and used natural material to create pictures in the snow.

The weather during the second forest session was -3°C and snowing. The snow and cold temperature was not a problem for either the children or the staff whom dressed appropriately for the weather. On arriving at the forest it became colder but the snow had stopped falling. The snow did however begin falling very fast and heavy for the final 30 minutes of the session. During this time the children were given the option of waiting inside a shelter, but they all chose to remain outside. The children enjoyed climbing trees and imagined that they were monkeys escaping the crocodiles. The increase of risk was higher for this group due to the nearby river, the steeper slopes and the opportunity to climb higher into the trees. However, as with the first group, there were no accidents and the children all stayed within their abilities.

The teachers used the opportunity, as they were walking through the forest, to discuss with the



children topics related to seasons and weather. For this session the group walked to a different part of the forest, where there were steeper slopes and a river. The children were able to walk to the river but not permitted to go into it due to the cold temperature. Although some children talked about jumping into the river, none of them did this. As with the first group of children I

observed, this group were also interested in rabbits. A group of girls spent a long time digging in the snow with sticks trying to find any buried rabbits.



When asking about popular learning activities during the forest sessions. I was told that during the summer the children bring magnifying glasses to take a closer look at the forest, in warmer months the children enjoy wading in the rivers, and in the autumn the children collect the coloured leaves and pine cones to take back to the preschool (Hafðís Jakobsdóttir, personal communication, March 2013). Another teacher told me that the forest brings out a different side to the children. They appear calmer and more interested in

what is happening around them. The children enjoy taking risks, such as climbing trees and running down slopes. She said that the children are able to run around free with few barriers to stop them, learn from their actions and allow their minds to wander (Guðný Ósk Gylfadóttir, personal communication, March 2013).

6. Discussion

Many of the observations made during the forest sessions support the findings of previous research on outdoor learning. It was clear that the children were excited to be in the forest, they engaged in various activities and imaginative games. They felt free to explore the surroundings but at the same time obeyed the rules by stayed within sight of the teachers. Risky play was a factor that many of the children become involved with however at no time were any of them in danger of serious injury. The gross motor skills of the children had also developed since beginning the forest school sessions. It is difficult to say whether this is due to natural development, their forest experience, or perhaps a bit of both.

As previously mentioned, research suggests that spending time outdoors and in nature increases a person's wellbeing (Hansen-Ketchum, Marck, Reutter & Halpenny, 2011). The children clearly enjoyed the forest school sessions. Every child said it was more enjoyable to be in the forest than in the preschool. They enjoyed the freedom they had to run around and explore. The cold temperatures and snow did not prevent the children from staying outdoors. Each child dressed appropriately in snow suits, hats, gloves and boots. The teachers also commented that the children are like different people when they are in the forest. That they are calmer and seem more interested in the surroundings. This suggests that spending time outdoors does benefit a child's well-being.

Research shows that when young children are free to explore nature, they are able to relate to it, and therefore respect it (White, 2004a; White, 2004b; Wilson, 1996; Norðdahl, 2005; Wilson, 1997). In the forest the children were interested in the nature around them. They asked questions about the birds and trees, and were very interested in the rabbit tracks seen in the snow. Many children spent a long time look for the rabbits, and discussing how to help them find food. After eating sandwiches, the children knew that they should gather the plastic boxes and cups together. Then before leaving the forest they checked to make sure they had not left behind any litter. The children had not only learned to respect the environment but also to respect others that used the forest area. One example of this was when the children walked on the other side of the path, so as to not ruin the track for the ski walkers.

The teachers were able to take advantage of the location and nature to teach the children. When a bird was heard the teachers asked if anyone knew the name of it. There were a variety of trees in the forest so the teachers were able to tell the children what they were called, and

why some of them had leaves and others did not. The children were asked how they thought the trees might feel in the cold weather. This gave the children the opportunity to think about trees in a different way; that they are alive and could have feelings like the children themselves. Throughout the year the children are able to learn from their forest visits in various ways, depending on the time of year. Each season allows the children to explore and discover something new. What they learn during the time in the forest could often not be taught indoors.

The children were given the opportunity for free play and exploration. They used the natural materials they found in the forest to play with. According to Knight (2011) these materials are tools which encourage the development of children's skills. Sticks and branches were used to write names and draw pictures in the snow, they became swords, and bow and arrows, trees were climbed to escape the crocodiles below, and holes became homes for rabbits. As other studies (Dowdell, Gray & Malone, 2011) on children and nature have found, the natural environment seemed to support and increase the children's imaginative play and interests. The language used by the children during free play supported the findings of Norðdahl's (2005) research. In which she found that children's vocabulary increases when given the opportunity to learn in an outdoor environment. The children created stories and characters in their games, with ever evolving dialogues. They were also able to communicate with each other to solve problems.

The teachers said that when the children first came to the forest, they tired easily, had trouble walking through deep snow and often stumbled on the bridge. After a few months of visiting the forest the children were able to walk with ease through the snow and along the uneven terrain. Research (Fjørtoft, 2001) suggests that the more children experience moving around such terrain, the better their motor skills will develop. The improved ability of the children to move with ease through the forest, suggests that children should be exposed early to a variety of terrain, which is both steep and uneven.

Many of the children engaged in risky play during the forest sessions. The observations made during the forest sessions seemed to support Knights (2009) belief that outdoor areas, such as forests, provide children with the perfect opportunity to engage in risky play. The children climbed trees and balanced on branches, they ran down steep slopes, and jumped from rocks. Each child was however within their own comfort limit. At no point was any child in danger of injury. They knew how high they could climb, how fast they could run, or how far they

could jump without hurting themselves. The risks taken by the children when engaging in such activities offered excitement and a challenge, but did not endanger them. This could, as Knight (2009) suggests, be due to the increased self-confidence the children have developed as a result of engaging in risky play. The challenges and risks the children face as a result of risky play provide new experiences for them, as within their preschool setting there are few opportunities for risky play.

The forest sessions relate closely to the Icelandic preschool curriculum (Ministry of Education, Science and Culture, 2011). The goals of the forest sessions are to introduce the children to nature and awaken their interest in the natural world around them. As stated in the curriculum this is one of the roles of the preschool. Furthermore, preschools should engage the children in activities that encourage respect for nature, which is what Hólmasól do during activities in the forest. Daily exercises that develop gross motor skills are an important part of preschool activities. During the forest sessions the children have the opportunity to engage in physical activities that promote many aspects of their development. The forest provides the children with a diverse environment where they can explore and play, which supports the role of a preschool according to the curriculum.

7. Conclusion

Both the research mentioned in this thesis and the observations made during the preschool forest sessions, suggests that children benefit in many ways from outdoor learning. Their wellbeing, health and motor skills all improve, they are able to explore nature, and use natural materials for creative and diverse purposes, they learn about the world around them in a hands-on manner that is not possible indoors, and they can engage in risky play that is essential to children's development but is not often available to them. Overall, outdoor learning has a positive impact on how and what children learn, various areas of their development, as well as their overall health and wellbeing.

Outdoor learning arouses children's excitement and interest to learn. It offers a variety of opportunities for sensory development and discovery; giving children the opportunity to gain experience of, and learn from, the world around them. Outdoor education provides an opportunity for communication, play and games, and learning opportunities, as well as opportunities to enjoy nature in diverse environments. Outdoor education also contributes to the physical health and wellbeing of children.

For outdoor learning to be successful it is important that teachers value the benefits, opportunities and hands-on opportunities it provides. Teachers much not view outdoor education as a break from teaching, rather they need to provide children with opportunities to investigate, and learn through real life experiences. The task for the teacher, during outdoor learning sessions, is to engage the children's interest, using this to guide the children in discovery, and hopefully an interest in nature now and in the future.

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