

Risky Play in Early Childhood Education and Care in Norway

by

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B.A., University of Washington, 2014

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Abstract

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Background: Risky play is defined as thrilling and challenging forms of play that have the potential for physical injury and has been linked to development and health benefits for children in the early years such as risk-assessment skills, increased physical activity (PA) and well-being, and promoting social competencies and resilience. Currently, in a Western context, children's opportunities for risky play is decreasing. At the same time, childhood inactivity and coinciding health concerns, as well as adolescent mental health issues such as anxiety, are on the rise. Risky play may serve as an antidote to some current health problems for children. **Purpose:** This research aimed to increase understanding of affordances (environmental factors that intersect with and influence human behaviors) for risky play. Social and physical environmental factors have been found to influence children's affordances for risky play. The study was designed to identify some of the social factors and environmental features that may provide children with greater opportunity for risky play. Alongside researching affordances for children's risky play, this research also inquired into children's emotional and behavioural expressions during risky play, and how children's engagement in risky play impacts PA. **Methodology:** Research was conducted with children ages 3 to 4 years, at a kindergarten in Levanger Norway. A mixed-methods approach was employed. Methods of data collection and analysis consisted of coding and statistical analysis of focused-video observations, as well as thematic analysis of field notes and semi-structured interviews. **Findings/conclusions:** Findings include the identification of

themes pertaining to social factors that may influence children's opportunity for risky play, including childhood assumptions, practitioner and parent attitudes towards risk, and pedagogical practice. This research generated a taxonomy of environmental features affording risky play, as well as findings that suggest risky play is positively correlated with levels of PA and outdoor settings.

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Chapter 1: Introduction

In this chapter I will situate myself as a researcher and in relation to my topic of study, present my research questions, and rationale for undertaking this particular inquiry.

Positionality

I am a white settler, of British descent residing on the traditional territory of the W̱SÁNEĆ people. My positionality as a researcher and graduate student has been constructed through my academic background of a Bachelor of Arts in Anthropology and current Master of Arts in Child and Youth Care (CYC), my practical experience in the field of CYC, and my life experiences thus far. I will present narratives from my life to illustrate my positionality and relating interest in risky play in early childhood education (ECE).

It was not until I started to immerse myself in the literature on risky play, that I realized how deeply embedded the notion of “risk” is in my own life. I grew up spending from May through September living out of a camper at Island View Beach. During this time, my younger brother and I were granted independent mobility to move between the tidal pools, the beach, surrounding sand cliffs, and forests. We spent our days bush-whacking, tree-climbing, cliff-jumping, building rafts, fishing, kayaking, and swimming. Evenings were almost always spent with friends and family around a campfire. I do not recall having any stringent rules about where we could go, what we could do, and the majority of the time my Mom could be found with her head stuck in a book on the beach. We were raised by what would now be termed “free-range” parenting (Hoffman, 2010; LeMoyne & Buchanan, 2011; Skenazy, 2009). Independent mobility, free play, outdoor life, and exploring risks were all prominent aspects of my childhood and may

be heavily influential on the person I am today (Reed, Duncan, Lucier-Greer, Fixelle, & Ferraro, 2016).

Furthermore, prior to entering the practical and academic field of CYC, my career as an Olympic athlete was very risky in terms of emotional vulnerability. Taking emotional risks has been a salient part of my life. Likewise, my interest in physical activity (PA) emerged through a childhood of being active, as well as my time training as an Olympic athlete. PA has always been an important part of my life and I have experienced the positive effects PA can have on health and well-being.

Prior to beginning the M.A., I worked at the Pacific Institute of Sport Excellence (PISE) as a Physical Literacy Leader and as an Early Childhood Educator Assistant (ECEA) at the Victoria Native Friendship Center (VNFC). During my time working at PISE, I found myself uneasy with the structured programming and often found ways to incorporate child-chosen and free-play activities. Children were subjected to regular assessments in order to evaluate the efficacy of the program, rather than for the direct benefit of the children (Land & Danis, 2016; Stid, 2012). I myself, as an Olympic medalist, would fail the assessments. According to these metrics, I had not properly learned fundamental movement skills through my childhood of free-play and outdoor exploration.

When working at XaXe STELITKEL Daycare, at VNFC, the words “no, thank you, that is not safe” started to sound like fingernails on a chalkboard to me. I was constantly witnessing, what I deemed, disruption of play and interruption of creative and exciting exploration. I wanted to allow children more opportunity for independent exploration (Kyttä, 2004). Through these experiences I recognized my conflicting emotional responses to excessive safety, helicopter

caretaking, and overly structured activities and my own philosophies on childcare emerged as emphasizing free and outdoor play, agency, well-being, and challenge.

I have positioned myself relative to my research topic in an effort to be transparent by considering my biases and motivations for this research. I state clearly that I view forms of risk taking in my childhood as having a positive influence. It is important that I acknowledge the privilege behind my perspective on risk. I grew up in a white, middle-class family residing in a safe neighborhood surrounded by land that afforded opportunities for safe risk taking in play. This may not be the case for children growing up in urban settings, in lower-socio economic families, and structurally marginalized populations as access to outdoor spaces that are safe for children to independently explore may be limited (Gerlach, Jenkins, & Hodgson, 2019). Nearby play spaces in impoverished communities may pose real risks to the activities that in my childhood I have deemed beneficial. For the purpose of my research, it is essential that I maintain that my view on risk is a privilege and research findings are not to be generalized to all populations.

The Problem

Across Western contexts in the mid-twentieth century, there was a shift from risks and injuries being considered a natural part of life, to the notion that injuries are preventable and that all hazards should be eliminated or significantly reduced if possible (Sandseter, Little, Ball, Eager, & Brussoni, 2017). Safety concerns and a predominantly negative perception of risk is prevailing in modern Western societies, including Canada (Beck, 1992; Giddens, 1999; Harper, 2017; Sandseter & Sando, 2016). Hazard-based approaches and risk-mitigation processes are being implemented across all sectors, including Early Childhood Education and Care (ECEC) settings (Sandseter et al., 2017). Fear-based policies and practices may have developmental and

health consequences for children growing up in the current risk-adverse context. Children's independent mobility and opportunities to explore risk are often restricted due to perceived safety concerns (Brussoni, Olsen, Pike, & Sleet, 2012; Jelleyman, McPhee, Brussoni, Bundy, & Duncan, 2019). Paradoxically, constraining children's risk taking in play may contribute to considerable and negative health outcomes, such as decreased PA and corresponding childhood obesity and non-communicable diseases (Brussoni et al., 2015). Additionally, children's risky play has been linked to increased PA, promotion of self-esteem and pro-social behaviour, development of risk-assessment skills and self-regulation, and increased overall well-being (Brussoni et al., 2015; Sandseter, 2010; Sandseter & Kennair, 2011). I now outline some of the existent concerns for children's health that my research on risky play aims to address.

Currently, children worldwide are falling short of PA recommendations and the pervasiveness of childhood obesity is concerning (Herrington & Brussoni, 2015; WHO, 2018). In a recent report, it was found that only 34-39% of Canadian children and youth met the PA guidelines for healthy living (ParticipACTION, 2018). A mere 13% of children ages 3 to 4 met the 24-hour Movement Behaviour Guidelines for Early Years (Chaput et al., 2017), meaning that young children are generally not active enough. Consequently, childhood obesity has more than doubled for Canadian children from 1981 to 1996, from 5% to 13.5% for boys and 11.8% for girls (Tremblay & Willms, 2000). Not only is childhood health a present concern, children are also establishing unhealthy lifestyle patterns in the early years which tend to be maintained into adulthood (Tremblay et al., 2010; Tremblay et al., 2011; Tremblay et al., 2015)

PA has been found to not only promote physical health, but also support psycho-social and psychological developmental for young children (Timmons, Naylor, & Pfeiffer, 2007).

Developmental benefits of PA in early years includes: formation of neural structures (synapses

and connections), practice language, motor and social-emotional skills such as emotional mastery, cooperation, problems solving and leadership skills, and provide space for expression of emotions (Timmons, Naylor, & Pfeiffer, 2007). Providing environments, policies, and pedagogical practices promoting PA in ECEC institutions is critical for children's health and development (Temple, Naylor, Rhodes, & Higgins, 2009).

Similar to concerns around childhood obesity, prevalence of child and adolescent mental health issues is cause for concern. It is estimated the 10-30% of Canadian youth are affected by a mental illness, 3.2 million Canadians ages 12 to 19 are at risk of developing depression, and that suicide is among the leading causes of death for Canadians ages 15 to 24 years old (CMHA, 2019). A recent report on childhood mental health from Ontario indicated that half of the parents surveyed have concerns for their children's anxiety, one-third of parents had children miss school due to anxiety, and one-quarter of Ontario parents have missed worked due to their children's anxiety (Ipsos, 2017). Research has linked children's engagement in risky play to the development of anti-phobic mechanisms (the mechanisms that aids in combating fear-based mental health disorder, such as anxiety) (Poulton & Menzies, 2002; Poulton, Milne, Craske & Menzies, 2001; Sandseter & Kennair, 2011). Without exposure to developmentally reasonable degrees of challenge and fear, children may fail to develop psychological skills to deal with inevitable risks of life, resulting in an increased susceptibility to mental illness (Eager & Little, 2011; Sandseter & Kennair, 2011).

Risks, especially risks for young children, are often perceived as negative, something to be avoided at all costs and something damaging. However, research suggests that this is not the case and that a reasonable amount of risk taking in children's play may promote positive health and developmental outcomes (Brussoni et al., 2012; Sandseter & Kennair, 2011; Tremblay et al.,

2015). Currently, the conversations and policies surrounding risk is one-sided, heavily favouring a negative framing of risk. Through my research, I advocate for the other side of risk, the potential positives that can come from risk. If a child falls from a tree and breaks her arm, the lower branches on that tree, making it climbable (an affordance), may be removed to prevent further injuries. In contrast, if a child's competencies managing emotions of fear, self-efficacy, and self-esteem improve from climbing that same tree, it is unlikely that more trees will be planted, or other climbable feature implemented. Understanding the possible positive outcomes and the potential negative outcomes of limited risk exposure needs to be considered equally to the potential for injuries in risky play.

Addressing the Problem

The overall purpose of this research was to identify social and environmental factors that impact children's affordances for risky play in ECEC settings. A secondary aim of this research is to contribute to existing literature on children's play, through an analysis of children's emotional and behavioural expressions during risky play and PA levels during risky play. The rationale for this research on affordances and substantiating arguments for risky play include the current physical and mental health concerns for children and the increase of safety regulations outlined in the previous section. Specific questions which guided my research include:

- How can physical environmental features afford risky play?
- How can social factors influence affordances for risky play?
- How does children's engagement with risky play impact PA levels?
- How do children express themselves emotionally and behaviourally through risky play?

My research took place in Levanger, Norway. The rationale for studying in Norway is two-fold; Norway is regarded in ECEC literature as less risk-adverse in practice (Wyver, Tranter, Naughton, Sandseter, & Bundy, 2010), and I was able to join a project with the current leading researcher on risky play, Dr. Ellen Beate Hansen Sandseter. I utilized a pragmatic approach (Morgan, 2007) and employed a mixed-methods research design (Creswell & Clark, 2007). I collected data over a 2 month period where I was an intern and participant observer (Jorgenson, 2015; Patton, 2002). I collected and analysed field notes (Patton, 2002), semi-structured interviews (Patton, 2002), and focused-video observations (Patton, 1980). My observations pertained to social and physical environmental factors that may have influence on children's affordances for risky play, as well as expressions of actualized risky plays and impacts on PA levels. I interpreted my data through Gibson's (1979) theory of affordances, which states that environmental and social factors intersect and influence human behaviors. In my research I considered the affordances that the physical and social environment offers in relation to the characteristics of children ages 3 to 4 years in the context of an ECEC institutions in Norway (Chemero, 2003; Gibson, 1979).

Through thematic analysis (Braun & Clark, 2006), I derived themes on social factors that may have influence on affordances for risky play, developed a taxonomy of physical environmental features affording risky play, and identified themes pertaining to children's emotional and behavioural expressions during risky play. Through coding and statistical analysis of focused-video observations (Patton, 1980; Rosenstein, 2002), and using software, Microsoft Excel and IBM Statistical Package for Social Science Version 22 (SPSS) (IBM Corp., 2013), I generated statistics on PA and setting (indoor/outdoor) during risky play.

Summary of Chapter

In this chapter I have positioned myself in relation to my research topic, risky play in ECEC. I have outlined the problem that my research questions addressed and provided a brief overview of how I addressed the problem through my research design. Chapter 2, Review of Literature, will provide an overview of the relevant conceptual and research work already published. Chapter 3, Research Design, I will share my research approach and methods. In Chapter 4, Findings, I present the results of my research, followed by a discussion in Chapter 5, integrating research findings and related literature and will conclude in Chapter 6 with practical implications, conclusions, suggestions for further research and outlines limitations of my study.

Chapter 2: Review of Literature

In this chapter I will provide a review of literature including a brief description ECEC, followed by information on ECEC in Canada and Norway. I will then define play and outline a few developmental views on play. Following the review of play literature, I will introduce and define risky play, discuss benefits, including literature on PA, and barriers to risky play, environments for risky play, and risky play in Norwegian context. I will complete my review of risky play literature by summarizing critiques of the dominant discourse regarding risky play. I will conclude the chapter by discussing Gibson's (1979) theory of affordances, which provides the theoretical framing of my research study.

What is ECEC?

Early Childhood Education and Care (ECEC) refers to an educational theory and field of work associated with supporting children's development from birth to 8 years old (Gordon & Browne, 2013; NAEYC, n.d.). An ECEC institution is an educational center for children 0 to 5 or 6 years (dependent on when compulsory school begins in a given country). ECEC institutions aim to provide age appropriate and stimulating learning opportunities, with an emphasis on socialization, language development, cognitive and physical development, and transitioning to primary school. Educators also provide provision of care for children attending ECEC institutions (Burger, 2010). Quality and affordable ECEC institutions are intended to allow parents of young children to be employed, with an emphasis of allowing women (who are currently still the primary caregivers) to re-enter the workforce (Friendly, 2010). ECEC curriculum varies across institutions and is generally underpinned by developmental theories

founded in developmental psychology, including the work of Freud (1951), Vygotsky (1978) and Piaget (1936) to name a few (Gordon & Browne, 2013).

ECEC in Canada. In Canada, the ECEC sectors are the responsibility of provincial and territorial governments (PTs). PTs are responsible for establishing center licensing requirements, regulations, and childcare pricing (Ferns & Friendly, 2015). Educational requirements for individuals working in ECEC institutions varies between provinces. Unfortunately, education requirements for ECEC practitioners remains low in most of Canada, with only five provinces requiring 50% of the staff to have at least one year of ECEC education and training. Similarly, wages are low for ECEC practitioners, at 69% of the average wage in Canada (Ferns & Friendly, 2012).

In the past, Canada's ECEC sector has appeared to be lacking in support and quality when compared with other developed nations. The Organization for Economic Co-operation and Development (OECD) conducted a survey on 20 countries and found that Canada invested the least in ECEC out of the countries involved. Canada invested (.25%) (OECD, 2006) of GDP into the ECEC sector. In 2008, another study conducted by UNICEF, compared 25 countries on 10 benchmarks of minimum standards for ECEC. Unfortunately, Canada placed last of the 25 countries investigated, receiving a low mark of 1 out of 10 (UNICEF, 2008).

Furthermore, Friendly and Prentice (2009) note that only 17% of Canadian children have access to licenced ECEC centers (the rest attending un-licensed) and that childcare centers are generally expensive (with the exception of Quebec, where childcare ranges from \$8.25 to \$21.35 CDN/day dependent on income) (Government of Quebec, n.d.). In the most recent consensus by Statistics Canada (2015), 54% of children under the age of 4 attend childcare centers and prices

ranged from a median of as \$175.00 CDN per month in Quebec to \$677.00 CDN per month median in Ontario.

In recent years the Government of Canada has invested in ECEC sector in order to provide support and fair opportunities to children and families across Canada. In the 2016 and 2017 budgets it is proposed that the federal investments in the ECEC sector will total 7.5 billion CDN over 11 years to improve the quality and affordability of childcare across Canada. Steps being taken towards goals of improving support for ECEC sector include a new framework, Multilateral Early Learning and Childcare (MELCCF), emphasizing increasing the quality, accessibility, affordability, flexibility, and inclusivity of childcare in Canada (MELCCF, 2017).

ECEC in Norway

In order contextualize ECEC in Norway, I will begin with some background on Norway. Norway has universal childcare, which has been successful in its aims of promoting greater equality in the labour force, by increasing the opportunity for females to return to work. In general, the labour force is a five day workweek, with seven and a half hour days and a mandatory five week holiday, resulting in large amount of leisure time. Historically, fishing, hunting, and foraging are all activities of Nordic regions, and have led to extensive time being spent outside. In contemporary times, these and other outdoor activities, have become a means of enjoyment (Sandseter & Lysklett, 2018). Outdoor life and recreation have maintained as an important part of Norwegian culture, evident by the Norwegian term *friluftsliv*. Friluftsliv is directly translated to ‘free-air-life’ which indicates a deep-rooted connection to nature that promotes outdoor pursuits of all sorts (Beery, 2013; Sandell & Ohman, 2010). This cultural heritage is also integrated within the ECEC practices and institutions, where children spend a

significant amount of time outside, and outdoor skill sets are seen as important learnings within ECEC curriculum.

Alongside friluftsliv, Norwegian's have a law providing common access to all natural areas (NME, 1957). The law of common access allows for activities such as hiking and recreation in nature to occur on all natural spaces in Norway, including property owned by individuals, as long as the land is respected and left undisturbed. This creates greater access to natural spaces and allows ECEC institutions to take children on trips to surrounding forests and other natural areas (Sandseter & Lysklett, 2018).

Given that Norway is in the Nordic region, the climate varies from season to season and can often be considered adverse, especially during the winter months. The average winter temperature in Norway ranges from minus six to three degrees Celsius and in the summer between 13 and 22 degrees Celsius. During the winter, the southern areas of Norway experience about five to six hours of sunlight, and in the northern areas there is almost no direct sunlight. In contrast, there is almost no darkness in the summer. The varying seasons and climates in Norway influence pedagogical practices in ECEC institutions (Sandseter & Lysklett, 2018).

Kindergarten system and curriculum. In Norway, ECEC institutions are referred to as kindergartens (barnehagen). Kindergartens are considered separate from the school system and are non-compulsory, however, they are well attended with 97% of children ages three to five years and 80% of children ages one to two years attending (Sandseter & Hagen, 2015). By law, all children over the age of 10 months have the right to education and care at a kindergarten (NMER, 2005; NMER, 2006/2011). Kindergartens are considered a pedagogical place, meaning children's development and learning are primary focuses, as well as quality care, play, and diverse experiences.

The Norwegian government has made an effort to make kindergartens more affordable by implementing a maximum price for kindergartens at NOK 2655 (\$406 CDN) per month and NOK 29 205 (\$4469 CDN) per year. Furthermore, fees for low-income families for the first child is not to exceed 6% of the family's total capital and personal income, with the ceiling at the national maximum. For the second, third, and additional children at 70% and 50%, of the fee for the first child (MER, n.d.). Last, 20 hours of free kindergarten a week for ages 4 to 5 for low-income families was introduced in August 2015. All kindergartens, public and private (approximately 50% of all kindergartens in Norway are private) must follow these pricing guidelines (Sandseter & Hagen, 2015).

The Norwegian Framework Plan for Content and Tasks of Kindergartens (NFK) (NMER, 2006) applies to all kindergarten settings and underpins pedagogical practices. A central component of the NFK is children's right to express views on and contribute to their daily activities and learning environment. In the NFK it is stated that "[c]hildren shall be able to actively participate in planning and assessing the kindergartens activities on a regular basis" (NMER, 2006, p. 8). Free play is also emphasized as a key focus in kindergartens, and that the "inherent value of play shall be acknowledged" (NMER, 2006, p. 20). Risky play is also present in the NFK, where it is stated that "kindergartens shall help children to evaluate and master risky play through physical challenge" (NMER, 2006, p.49).

Kindergartens in Norway predominately employ a child-centered and free play pedagogical practice, however the NFK does outline learning goals. Seven knowledge areas are discussed in the framework: communication, language and text, body, movement and health, art, culture and creativity, nature, environment and technology, ethics, religion and philosophy, local community and society, and number, space and shapes (NMER, 2006). These learning goals are

to be enacted within a child-centered and free play pedagogy and approached with ample flexibility. There is no official testing of these goals and kindergartens are required to produce a yearly plan incorporating the seven knowledge areas (Sandseter & Hagen, 2015; Sandseter & Lysklett, 2018).

Teacher education & theoretical frameworks. In Norway, professional kindergarten teachers and ECEC pedagogical leaders, are required to complete a three year Bachelors' degree specializing in ECEC. The Bachelors' degree covers subjects: pedagogy/education, arts and crafts, drama, music, physical education, religious and ethical education, mathematics, nature and environment, Norwegian language, and social studies. There is the option for further specialization in areas of drama, art and music, nature and outdoor activities, interculturality, or children's culture. Universities in Norway offer masters' and post-doctorate programs in ECEC, including specializations in management, culture and art, and special education (<https://dmmh.no/en>).

Historically, theoretical frameworks taught during the three year Bachelors' degree for kindergarten teachers consist of foundational theorists Fröbel (1899), Vygotsky (1978), Piaget (1936), and Reggio-Emilia (Hall, 2010). Fröbel's tradition contributes to Norwegian kindergarten's view of free play as central to childhood, as well as the notion that children learn through exploration and play instead of being taught. Vygotsky, Piaget, and Reggio-Emilia approaches and theories had a heavy influence on ECEC in Norway during the 1970's but have in the past 30 years been replaced with more contemporary frameworks in ECEC, where traditional theories are combined with ecological theories (Power, 2000; Smith, 2005). In recent years, ECEC pedagogical practices have been underpinned with Hendry and Kloep's (2002) lifespan model of developmental change and Gibsonian theory of affordances (1979). The

lifespan model interprets learning and development to occur through a process of encountering challenges and developing the resources needed for that challenge. The dynamic interaction between an individual's resources (both personal and societal) and challenges encountered determine an individual's development, rather than operating from an 'ages and stages' model traditionally employed in developmental psychology (Hendry & Kloep, 2002). Gibson's theory of affordances suggests environmental factors influence human behaviour and considers individual characteristics, such as body, size, strength and personality and social influences such as restraining or initiating adults. Combining the lifespan model and theory of affordances leads to an emphasis on creating stimulating and challenging environments, rich in dynamic opportunities and affordances for children in ECEC institutions in Norway (Sandseter & Hagen, 2015).

What is Play?

"We all play occasionally, and we all know what play feels like. But when it comes to making theoretical statements about what play is, we fall into silliness" (Sutton-Smith, 1997, p.1). Play is not easily defined, nor has a widely accepted definition or interpretation. Sutton-Smith denotes that there is "something about the nature of play itself frustrates fixed meaning" (Sutton-Smith, 2008), leading to numerous different theories conceptualizing and defining play. Sutton-Smith defines play as having no apparent purpose, being an inner-directed activity, eliciting a pleasurable, exciting experience (Sutton-Smith, 1997). Similarly, Huizinga (1950) states that play is a voluntary and fun activity, without a productive aim or outcome. Caillois (1958/2001) critiques Huizinga's work by stating that play has the potential for profitable gain such as positive results and desired outcomes (competitive games).

Play is considered a vital component of children's well-being, health, and development (Alexander, Frohlich, & Fusco, 2014a; Herrington & Brussoni, 2015) and is considered a right of every child (UNICEF, 1989). Many foundational theorists in child development consider play an avenue of development for young children. Vygotsky (1933) views play as a process of abstract thinking, using imaginative thinking to assign meaning and stretch current understanding promoting cognitive development. He also denotes that through imaginative situations or real-life scenarios, children can move through valuable developmental processes (Vygotsky, 1980). Likewise, Freud (1952) saw play as an avenue for children to work through experiences that may be considered negative or abnormal (Tanis, 2012). Piaget (1951), states that play parallels stage of development and helps solidify learning and strengthen new skills. Piaget suggests that children move through games according to developmental stages, starting with sensori-motor, to symbolic, and finally to games with rules. Similarly, Erikson (1972) believes that play is an important tool for children to move through stages of healthy emotional development. Recently, play has received attention for the promotion of cognitive development, social skills, emotional well-being, and most prominently, increasing PA (Herrington & Brussoni, 2015; Whitebread, Basilio, Kuvalja, & Verma, 2012).

What is Risky Play?

Risky play can be defined as thrilling play that provides challenge and opportunity for children to test their capabilities, where risk of physical injury is present (Little & Wyver, 2008; Sandseter 2007). In 2007, Sandseter developed six distinct categories of risky play: (a) play with great heights (danger of injury from falling); (b) play with high speed (uncontrolled speed and pace, potential for collision); (c) play with dangerous tools (with potential for causing injuries); (d) play near dangerous elements (where one can fall into or from something resulting in injury);

(e) rough and tumble play (where children are able to harm each other); (f) play where children can ‘disappear/get lost’ (Sandseter, 2007). More recently, Kleppe, Melhuish, and Sandseter (2017) created two new categories of risky play in their research on risk taking in children ages one to three years of age. The two new categories are: (g) play with impact (risk of injury through impact) and (h) vicarious (watching other children in risky play) (See Table 1).

Subcategories and examples of risky play at great heights include climbing and jumping from both still or flexible surfaces, balancing on high objects and hanging or swinging at great heights. In this context, great heights refers to a developmentally appropriate and reasonable height for children exploration of risk (e.g., 3 year old climbing one meter up a tree). Play with high speed is activities such as swinging, sliding, sledding, running, bicycling, skating, and skiing. The use of cutting tools such as knives, saws, axes, and strangling tools like ropes are examples of risky play with tools. Playing near cliffs, deep or icy water, and open fires would classify as risky play near dangerous elements. Wrestling and play fighting, as well as fencing with objects such as sticks are forms of rough and tumble play. Independent mobility, where children can go exploring alone or playing in unfamiliar environments, is an example of ‘disappearing’ or ‘getting lost’ (Sandseter, 2007). Children intentionally riding their bikes into a tree, or ‘body slamming’ into a padded wall in a gymnasium are forms of risky play with impact. Risky play is where children often express both excitement and fear, while climbing a tree or running downhill. It looks like the concentration of a child learning how to use a hammer and nails or building a fire for the first time (Sandseter, 2009b; Storli & Sandseter, 2015).

Challenge and risk taking seem to be a natural part of children’s play, evoking expressions of pure exhilaration, thrill, fear, and often a combination of these sensations (Sandseter, 2009d). Sandseter theorizes that during risky play children oscillate between a state

of playfulness and a state of seriousness. These states can be seen in the Figures 1 through 5 below. As long as playfulness is the primary component, rather than seriousness, “the ambiguous state of experiencing both exhilaration and fear” may be the enticing factor of risky play for children (Sandseter, 2010, p. 82). In 23 semi-structured interviews, where preschoolers who were asked about the sensations during risky play, consistently children responded with some iteration of, ‘it tickles my tummy.’ The tickling of children’s tummy may be interpreted as their expression of experiencing riding the edge between fear and thrill.

Table 1

Risky Play Types

Types of Risky Play	Definition	Example
Heights	play at great heights with danger of injury from falling	climbing and jumping from both still or flexible surfaces, balancing on high objects and hanging or swinging at great heights.
Speed	play with uncontrolled speed and pace, potential for collision	swinging, sliding, sledding, running, bicycling, skating, and skiing.
Dangerous Tools	play with dangerous tools with potential for causing injuries	cutting tools such as knives, saws, axes, and strangling tools like ropes
Dangerous Elements	play where one can fall into or from something resulting in injury	playing near cliffs, deep or icy water, and open fires
Rough and Tumble	play where children are able to harm each other	wrestling and play fighting, as well as fencing with objects such as sticks
Disappear/get lost	play where children can ‘disappear/get lost’	children can go exploring alone or playing in unfamiliar environments
Impact	play with risk of injury through impact	running into a wall, riding a bicycle into a wall or stationary object

Vicarious

watching other children engage
in risky play

watching children climb a tree,
sled down a hill, or play-fighting

Play at Heights



Figure 1. Children playing at great heights; picture on the left shows two girls on a climbing wall and picture on the right depicts a boy jumping from a fort about half a meter off the ground.

Play with Speed



Figure 2. Children playing with speed as they sled down a frosty hill.

Play with Dangerous Tools



Figure 3. Children playing with dangerous tools; the pictures on the left shows a girl using a kitchen knife to cut up a carrot and the picture on the right depicts a girl using a hammer and nails to build a birdhouse.

Play Near Dangerous Elements



Figure 4. Children playing near dangerous elements; the picture on the left shows' children sitting around an open flame and the picture on the right depicts children climbing up a steep hill/cliff in the forest.

Rough and Tumble Play and Vicarious Play



Figure 5. Children's rough and tumble play and vicarious play; two girls wrestle in the tumblerom while a boy engages in vicarious risky play as he watches the girls playfight.

Disappear/'Get Lost'



Figure 6. Children’s exploratory play where they disappear/’get lost’; two children playing in nearby brush that allows them out of sight from other children and practitioners.

Arguments for Risky Play

In recent years, ample research on the benefits for risky play for children in the early years has emerged (Sandseter, 2007). The most extensively cited benefits of risky play include increased PA, improved mental health and well-being, and the development of risk-assessment (Brussoni et al., 2015; Tremblay et al., 2015; Wyver et al., 2010). Other benefits of risky play frequently noted in literature include increased self-esteem and self-regulation, development of resilience and emotional expression, improved motor skills, and decrease in conflict sensitivity (Brussoni et al., 2015; Harper, 2017; Harper, Rose, & Segal, 2019; Little & Sweller 2015; Sandseter, 2010). In the following section, I will discuss the potentiality of risky play to promote children’s developmental and improve physical and mental health.

Physical activity. PA is considered an essential component of children’s health and development (Janssen & LeBlanc, 2010; Pellegrini, 2009; Spinka, Newberry, & Bekoff, 2001; Timmons et al., 2007). Global trends suggest that PA is decreasing worldwide and sedentary lifestyles, childhood obesity rates, and related health issues are of significant concern. There is an evident “progressive trend towards lifestyles that are conducive to the promotion of non-communicable diseases” (Brussoni et al., 2015, p. 6477). Increasing PA and reducing childhood obesity continues to be a challenge worldwide (Herrington & Brussoni, 2015; Temple et al., 2009; Timmons et al., 2007). Correspondingly, Tremblay et al., (2015), discusses the need to create “accessible, acceptable, culturally adaptable, feasible, cost-effective, and scalable” (p. 6477) approaches to increasing children PA.

Similar to the rest of the world, childhood obesity and inactivity persists in Canada. The ParticipACTION Report Card on Physical Health for Children and Youth is a comprehensive

assessment providing letter grades on 14 evidence-based indicators of physical health and activity in Canadian children and youth (ParticipACTION, 2018). In 2018, Canadian children and youth received a D+ for overall PA derived from measures on children's active play and leisure activities (D), active transportation (D-), physical education (C-), organized sport participation (B), 24-hour movement behaviour (F), as well as sleep (B+) and sedentary behaviours (D). The Canadian 24-hour Movement Guideline for Early Years recommends pre-school aged children (3 to 4 years) are physically active for 180 minutes per day, with 60 minutes of it being energetic (vigorous) play (Tremblay et al., 2017). The 2018 ParticipaACTION report stated that 62% of pre-school aged children met the requirements for PA, 82% for sleep, and 24% sedentary behaviours, and only 13% of children meet all three requirements (Chaput et al., 2017). These findings were reported from a comprehensive study, including 803 Canadian children (age 3 to 4), intended to be a nationally representative cross-sectional sample, measured children PA, sleep, and sedentary behaviour through accelerometers and parental reporting. The 2018 report concluded that "Canadian kids are sitting too much and moving too little to reach their full potential" (ParticipACTION, 2018, p.7).

Barriers identified in children's access to active play, and fulfilment of PA guidelines, include safety concerns, societal pressures to engage children in structured activities, not having enough time, being too tired, inclement weather, and enticing technology that is often preferred over outdoor play (ParticipACTION, 2018). The 2018 report also identified childcare settings as venues to promote PA and suggested increased efforts may lead to substantial increase in PA for children in the early years. These recommendations are congruent with research identifying environments at schools and childcare centres as a strong determinants of PA levels (Adamo et al., 2014; Brussoni, Ishikawa, Brunelle, & Herrington, 2017; Finn, Johannsen & Specker, 2002;

Naylor & McKay, 2009; Naylor, Macdonald, Zebedee, Reed, & McKay, 2006; Temple et al., 2009).

Researchers have recently explored whether the risk of injury due to children's risky play outweighs the benefits associated with risky play such as greater PA, well-being, and development of risk-assessment. This research suggests that inactivity may be causing more harm than forms of risky play and has influenced further research on the relationship between risky play and PA (Brussoni et al., 2015; Sandseter et al., 2017). There is now a substantiated and expanding body of literature indicating that risky play may increase PA and provide an antidote to sedentary lifestyle related illnesses and diseases (Brussoni et al, 2015; Tremblay et al., 2015).

Risky play may increase PA through engaging children in active play for longer duration of time relative to other forms of play (Brussoni et al., 2015). This may be due to the desirable sensations of thrill and excitement associated with risk taking in children's play (Brussoni et al, 2012; Sandseter, 2009c; Sandseter & Sando, 2016; Tremblay et al., 2015; Wyver et al., 2010). Congruently, outdoor, natural play spaces are associated with increased risk taking in play and sustained duration of PA (Chawla, 2015; Herrington & Brussoni, 2015; Fjørtoft & Sageie 2000).

Another avenue in which children's engagement with risky play has been linked to increased PA is through independent mobility (Kyttä, 2004). Numerous studies have correlated children's independent mobility to increased PA (Jelleyman et al., 2019; Schoeppe, Duncan, Badland, Oliver, & Browne, 2014). In a systemic review on risky play and children's health, it was found that the "majority of the studies reported that independent mobility was positively related to PA" (Brussoni et al., 2015, p. 6440). Similarly, Brown et al. (2008) noted that allowing children greater independent mobility increased PA. In contrast, Alparone and Pacilli

(2012) noted that restricting children's mobility caused a decrease in PA and increased challenges associated with obesity (Brown, Mackett, Gong, Kitazawa, & Paskins, 2008; Lopes, Cordovil & Neto, 2018; Page, Cooper, Griew, Davis, & Hillsdon, 2009). In a recent comprehensive study of parental attitudes towards risky play and independent mobility in New Zealand, road traffic and stranger danger were found to be barriers to allowing children independent mobility (Jelleyman et al., 2019). These findings are congruent with previous literature suggesting traffic and stranger danger as primary barriers in children's risky play (Brussoni et al., 2015; Harper, 2017).

Creating supportive environments and practices for risky play in ECEC settings may be an effective way to increase PA in the early years, and aid in combating health consequences associated with inactivity. In both PA and risky play research, outdoor environments are associated with increases in duration and intensity of PA and risky play (Chawla, 2015; Herrington & Brussoni, 2015; Fjørtoft & Sageie 2000; Sandseter, 2009a). The relationship between PA, outdoor environments, and risky play is further discussed by Tremblay et al., (2015) in their *Position Statement* on active outdoor play. Through two systemic reviews, critical appraisal of current literature and existing position statements, engagement of experts and cross-sectorial individuals/organization and an extensive stakeholder consultation process, the report concluded that “optimal balance between health promotion through active outdoor and risky play, and injury prevention and safety concerns, has been lost for children today” (p. 6493).

Mental health. Risky play has been suggested as a preventative measure for some mental health disorders, including depression and anxiety (Sandseter & Kennair, 2011). Indirectly, risky play may prevent the onset of childhood and adolescent mental health disorders through

increasing self-esteem and self-efficacy related to skill acquisition and competencies (Brussoni et al., 2012; Wyver et al., 2010). A substantial body of psychology research links increased self-esteem and self-efficacy as preventative measures against childhood and adolescent mental health issues (Bandura, 1993, 1988; Dumont & Provost, 1999; Herman-Stahl & Petersen, 1996; Rosenberg, 1962). Studies suggest that self-esteem and problem solving skills are important protective factors against stress, overwhelm, and depression in adolescents (Dumont & Provost, 1999). Likewise, high levels of perceived mastery (perceived competence in coping with challenges) and high self-efficacy have been noted as personal attributes that may prevent depression in adolescents (Herman-Stah & Peterson, 1996). Additionally, high levels of active coping (addressing the challenge) versus avoidant coping mechanism (running away from the challenge) were associated with lower levels of stress and depression in youth (Herman-Stah & Peterson, 1996). Self-esteem, self-efficacy, and available coping strategies may contribute to individual's beliefs about competencies and abilities to manage threatening occurrences, reducing anxiety and negative thoughts associated with potentially challenging and 'scary' events.

A particularly compelling study on risky play and mental health took an evolutionary perspective, framing risky play as a process for developing anti-phobic mechanisms. Sandseter and Kennair (2011) suggest that the desire for children to engage in risky play is due to an "anti-phobic effect in normal child development" (p. 257). Sandseter and Kennair use modernist psychology theories to address the evolutionary psychopathology perspective of mismatch. Mismatch is where children do not receive adequate stimulation and exposure to risk, causing fears and anxieties to continue in the future despite a lack of relevance (Kennair, 2003; Poulton et al., 2001; Sandseter & Kennair, 2011). Within this framework, the argument is made that

modern anxiety treatment effectively mirrors children's risky play through a non-associative theory of addressing phobias and fears (Poulton et al., 2001; Poulton & Menzies, 2002).

Likewise, Eager and Little (2011) position risk as a "good and necessary" part of development and coined the term 'risk deficit disorder' to explain the potentially negative outcomes of safety surplus on the development of cognitive skills (Eager & Little, 2011, p. 3). Children have the opportunity to experience sensations of fear during risky play, promoting the development of competencies to manage the potential risks, challenges, and stress associated with life as an adult (Eager & Little, 2011; Sandseter & Kennair, 2011). Through the theory of risk deficiency and evolutionary psychology, inhibiting children from engaging in risk taking endeavors may have negative impacts on development and lead to higher levels of phobia induced mental illness in adolescence (Sandseter & Kennair, 2011; Eager & Little, 2011).

Risk-assessment. Through allowing children to engage in risky play, they are given the opportunity to test physical limits, adjust or avoid dangerous activities, and develop risk-assessment skills (Brussoni, Olsen, Pike, & Sleet 2012; Little, Sandseter & Wyver, 2012). Eager and Little (2011) emphasize that adults rely on the ability to adapt to situations and conquer challenges, and in order to acquire these skills, it is essential to engage in risk taking behaviour during formative years. There are "unknown factors that make success uncertain" in everyday activities that are constituted as risky (Eager & Little, 2011, p. 1). Similarly, Willoughby denotes that "everyday life always involves a degree of risk and children need to learn how to cope with this from an early age" by being given the opportunity for challenging play (Willoughby, 2009, p. 7).

Brussoni and colleagues (2015) conducted a comprehensive systemic review inquiring about the relationship between risky play and health in children. Their review suggested that

there was a positive relationship between risky play and health in children, drawing on social health, behaviours, injuries, and aggression as measures of children's overall health (Brussoni et al., 2015). The review included a key study, conducted by Lavrysen et al. (2017), where a group of children who participated in a 14-week risky play intervention presented improved "risk detection and competence, increased self-esteem, and decreased conflict sensitivity, relative to their pre-intervention performance" (Brussoni et al., 2015, p. 6425; Lavrysen, Bertrands, Leyssen, Smets, Vanderspikken, & De Graef, 2017). Other results from Brussoni's systematic review deduced that independent mobility increased PA and had a positive relationship on social health due to the increase in playtime with peers (Brussoni et al., 2015).

Barriers to Risky Play

The abundance of research suggesting a positive relationship between risky play children's health, development, and well-being begs the question of why affordances in risky play are declining in modern Western society? Substantial research states that opportunities for risk taking in children's play is diminishing (Brussoni et al., 2012; Harper, 2017; Sandseter et al., 2017). Some barriers that have been identified include an increasing risk-adverse society, parent and practitioner attitudes towards risk, fear of litigation, and childhood injury statistics (Brussoni et al., 2012; Wyver et al., 2010). Beliefs about risk and childhood assumptions may also underpin attitudes towards risk and policies and practices surrounding children's safety. In the following sections I will unpack the above barriers to children's affordances for risky play, however the list is not exhaustive. Other barriers that have been found to influence opportunities for risky play include access to natural environments, affordability of equipment/clothing needed, pedagogical practices, and practitioner skill sets (Brussoni et al., 2012; Wyver et al., 2010).

Childhood assumptions. Beck's (1992) notion of the 'risk society' may provide some insight into the emergence of 'safety surplus.' Beck notes that there was a shift during the mid-twentieth century from risk being attributed to external hazards, to risk being dependent on decisions. Echoing Beck's notion of risk becoming decision dependent, Sandseter et al., (2017) state that in the mid-1900's "beliefs began to change and accidents, previously assigned to carelessness, bad luck or destiny, began to be seen as foreseeable and preventable" (Sandseter, Little, Ball, Eager, & Brussoni, 2017, p. 114).

Alongside the notion that risks are preventable is a set of fundamental beliefs around children's competencies in being able to keep themselves safe. Anglin (2002) outlines the basic assumptions about childhood in the current Euro-western society, expressing that children are seen as dependent, innocent, incomplete, incompetent and vulnerable. Giddeon (1999), in his work *Risk and Responsibility*, suggests that risks in all settings, including early childhood education and care, are associated with responsibility, security, and safety. Beck's (1992) risk society theory, Giddeon's (1999) association of risk and responsibility, and the dominant Euro-western assumptions of childhood (Anglin, 2002), create a picture of why affordances for risky play may be diminishing in the current context. The responsibility to prevent injuries in children falls heavily on caregivers, policy makers, and organizations, contributing to the materialization of 'helicopter parents', stringent safety measures, and a general culture of fear and anxiety amongst childcare providers (Connolly & Haughton, 2017; Cottle, 1998; Sandseter, 2014).

Attitudes toward risk. Practitioner and parental attitudes about children's risk taking and personal risk taking, have been found to impact children's engagement in risky play (Little, Wyver, & Gibson, 2011; Sandseter, 2012). Concerns for children's safety influences parent's decision to discourage or prevent participation in physical activities, as well as leading to

restrictions on children's independent mobility. Parents also feel a socially-assigned responsibility to protect their children from risks, while still encouraging the development of competencies. Similarly, practitioners in ECEC institutions cite accountability, fear of litigation, and being held liable for children's injury as primary reasons for constricting risky play (Bundy et al., 2011; Little et al., 2011; McFarland & Laird, 2018).

Research conducted on parents' attitudes about risk in their own lives in relation to perception on children's risky play, concluded that parents having experience significant risk themselves, allowed more opportunity for children to engage in risky play, focusing more on benefits versus safety concerns. In contrast, parents that had lived relatively risk-free lives focused on the potential negative outcomes (harm and injury) and how to prevent children from making mistakes (Niehues, Bundy, Broom, & Tranter, 2015). Another study on ECEC practitioners' personalities in relation to perception of children's risk taking denoted that practitioners scoring higher on excitement-seeking scales, held more liberal attitudes towards risky play and allowed for more actualization of risky play (Sandseter, 2014). Wyver et al., (2010) discusses attitudes about risky play to be culturally embedded. Wyver et al. reference cross-cultural research, suggesting practitioners from Norway and other Scandinavian countries seem to be more permissive to children's risk taking compared to Australian and American practitioners (Little et al., 2012; Sandseter & Sando, 2016).

Statistics. Injury statistics have become an important component in the debate around risky play, safety, and play space provisions. However, the use of injury statistics often does not account for the proportion of time children spend engaging in the classification of play, compared to other activities (Ball, 2004; Sandseter et al., 2017). If risk of harm per exposure were accounted for, the results would indicate that injuries occurring in outdoor free play

accounts for a remarkably low percentage of total injuries in children's play (Sandseter et al., 2017). Injury statistics are an easily quantifiable variable, whereas the developmental benefits of risky play are more qualitative measure and not as readily available, nor as credited in a Euro-western society. The "casual use of statistics" (Sandseter et al., 2017, p. 115) has led to detrimental regulations of play spaces, preventing children from being exposed to healthy risks and challenging play.

Brussoni et al., (2015) notes that in North American society, opportunities for children to engage in risky play is diminishing, based on "safety concerns, such as injury or abduction" (p. 6446). Injury incident statistics in Canada are often incorrectly reported or implied, and the statistics regarding abduction show that the "risk of the 'stranger-danger' kidnapper have been inflated" (Herrington & Nicholls, 2007; Sandseter et al., 2017; Stewart, 2016, para. 1). Canadian statistics on child abduction highlights that the number of abducted children is declining, that the majority of children are abducted by their parents, and that most abductees are returned safely (Stewart, 2016). Informing the debate about occurrence of injuries associated with risk taking, Brussoni et al., concluded that the "majority of risky outdoor play-related injury incidents result in minor injuries requiring minimal or no medical treatment" (p. 6426).

Environments for Risky Play

The environments in ECEC institutions provide an important setting for children's engagement in all forms of play, including risky play. Research suggests that physical environments impact children's play in terms of type, diversity, PA levels, creativity, and social interactions (Hart & Sheehan, 1986; Herrington & Lesmeister, 2006). Given the relationship between physical environments and children's play, numerous studies have implemented

environmental interventions to children play spaces and seen shifts in children's activities (Engelen et al., 2013; Brussoni et al., 2017; Ridgers, Fairclough, & Stratton, 2010).

There has been some research specifically on physical environments in relations to children's risky play. Sandseter (2009a) conducted research comparing outdoor play spaces and their affordances for risky play in an ordinary pre-school with a nature preschool in Norway. The study concluded that environmental affordances in risky play were abundant in both preschools, however the degree of riskiness was greater in the nature preschool (Sandseter, 2009a). Another study by Herrington and Brussoni (2015) employed environmental interventions to outdoor play spaces in two ECE settings, with the intent of increasing both risky play and nature play. Interventions included the addition of shrubbery, boulders, sand and more vegetation to existing play spaces. Behavioural maps of children's movement patterns pre and post-intervention suggested that interventions influenced children movement to be more complex and intense, suggesting increased engagement (Herrington & Brussoni, 2015).

In another study, Little and Sweller (2015) used an online survey to inquire into the intersection of resources and spaces with affordances for risky play and PA in 242 ECEC centers in Australia. Little and Sweller concluded that "outdoor play areas that do not adequately provide challenging risky play opportunities are likely to be less inviting for children and consequently reduce children's engagement in physically active play" (Little & Sweller, 2015, p. 339). Similarly, Fjørtoft and Sageie (2000) have looked at the influence of natural environments on children's play and concluded that there is a "strong relation between landscape and play functions" (p. 83). These findings address the relationship between physical environments and children's play, as well as the linkage previously discussed between risky play and increased PA.

Norwegian Context

Wyver et al. (2010), cautions against assuming that “restriction of play freedom are necessary in a modern western environment” by drawing on the relatively liberal approach to children’s risk taking and safety in Scandinavia, specifically Norway (p. 267). One component of the more liberal outlook to safety in Norway can be attributed to the Kindergarten Act and the Norwegian Framework Plan for Content and Task of Kindergartens, where a pedagogical focus of development and learning through providing adequate challenges, including risky play, is emphasized nation-wide. Another factor contributing to the relaxed attitudes towards risky play in Norway and across Scandinavia, may be the ideology of *friluftsliv* which promotes outdoor activities that often inherently present some degree of risk (Sandell & Ohman, 2010; Beery, 2013). Congruently, Norwegian, Swedish, and Danish pre-school teachers were found to present less uneasiness around children’s risk taking than American teachers (Sandseter & Sando, 2016, p. 179). Cross-cultural research on children risky play, suggests that affordances for and actualizations of children’s risky play is socially complex and culturally embedded (Sandseter et al., 2012).

Critique of Risky Play

To contrast the literature review above, there is emerging research critiquing the discourse on risky play. Critics of risky play research argue that the dominant discourse and research on risky play is often void of contextual factors such as historical, sociocultural, political, and economic influences that may vary from child to child. The benefits and barriers are often generalized to all children. Populations often not considered in the dominant discourse

on risky play include Indigenous and lower-socioeconomic, and marginalized populations (Gerlach et al., 2019).

There is minimal research directly with Indigenous population and risky play. I did find one article examining rough and tumble play in Ojibway communities (Peterson, Madsen, Miguel & Jang, 2018). Teachers in a remote community in Northern Canada took part in a focus group where they discussed the sociocultural influences on perception of rough and tumble play and external perception of their role as teachers. Rough and tumble play such as gun play and dramatic play with traditional hunting roles, was regarded as a practical and acceptable form of play for participants taking part in the focus groups, although may not be considered accepted by the wider population in Canada (Peterson et al., 2018).

In exploring risky play in the context of an urban marginalized neighbourhood in Vancouver, British Columbia research by Gerlach et al., (2019) highlights how play opportunities are constrained by real risks for children in public play spaces that included an abundance of discarded needles and the repurposing of play areas for living as a result of the opioid and housing crises in this city. Similarly, Strife and Downey (2011), call attention to environmental inequality and implications for children's development through a synthesis of research across environmental health, education, and psychology. Research consistently suggests that children living in marginalized communities, such as racialized minorities and lower socioeconomic status, are disproportionately exposed to environmental hazards and toxins (Downey, 1998; Strife & Downey, 2011). Environmental hazards may also include toxic waste sites and increased industrial air pollution. Further research on environmental inequality and communicable impacts on children development specifically with marginalized communities is necessary to address the complexity of barriers experienced.

Theory of Affordances

In order to explore how physical environments and social factors influence children's opportunity to engage in risky play, I analysed my data through Gibson's (1979) theory of affordances. The theory of affordances as defined by Gibson states that physical environments, invite or *afford* particular actions and behaviors. Affordances are not only considered in terms of physical environments, but through individuals characteristics such as body size, strength, skill, and disposition (Chemero, 2003).

Social factors, such as implicit or explicit promoting or restraining of behaviours are also a consideration in Gibson's (1979) theory of affordances. Costall (1995) denotes "we experience objects in relation to the community within which they have meaning" (p. 475). He provides an example of a child learning the function of a cup or spoon, where a learning situation is created through a caregiver structuring the context and presentation of utensil in order to direct the child to the 'correct' affordance. Similarly, Chawla and Heft (2002) discuss social affordances by stating that "clearly the richest source of information about one's actions comes from interaction with other individuals" (p. 201). Chawla and Heft note that "children take particular delight and continue to engage those affordances that give clear evidence of their effort" and that this feedback on effort is often provided from other individuals, mainly adults (p. 201). Evaluation by others, contingent on the social norms and values, are considered to impact the affordances of a given physical environment.

Heft (1988) and Kytä (2002, 2004) built on Gibson's theory (1979) by defining taxonomies of physical structures in children's play spaces by the affordances they offer. Heft argues that a functional taxonomy "may be more psychologically meaningful than the standard form-based classification of environmental features" (Heft, 1988, p. 29). The terminology

associated with affordances describes places in terms of function rather than form. For example, a tree in an outdoor play space would be described as a climb-able structure and a shelter in a playground is considered a place that for hiding and being in peace and quiet (Kyttä, 2002; Kyttä, 2004). When describing children's play spaces in terms of function, the environment becomes an avenue to promote desired outcomes such as increased PA, development, and well-being. This view of children's physical environments can prove useful in designing and adapting ECEC institutions.

Summary of Chapter

In this above review of literature, I have provided a brief overview of ECEC in Canada, followed by a more comprehensive synopsis of ECEC in Norwegian context. I introduced play theories and foundational developmental perspectives on play. The bulk of the above literature review discusses the benefits and barriers to children's risky play. Benefits discussed include the promotion of physical and mental health in children and the development of risk-assessment. I also included an overview of literature on children's PA in current context and the relationship between PA and risky play. Barriers discussed include childhood assumptions, parents and practitioner attitudes towards risk, and the use of injury statistics. I have included what research is available on physical environments and affordances for risky play and critiques of the dominant discourse on risky play. I concluded with introducing Gibson's (1979) theory of affordances, which provides the theoretical frame for my research study.

Chapter 3: Research Design

In this chapter I outline my research approach and methods of data collection and analysis. I took a pragmatic approach (Morgan, 2007) to my research through employing a mixed-method design (Creswell & Clark, 2007), including focused-video observations (Patton, 1980), field notes (Patton, 2002), and semi-structured interview (Patton, 2002). In this section I will also provide information on my reflexivity, ethics, and participants.

Pragmatism and Mixed-Methods

A pragmatic approach to research is based on the assumption that there are many ways of interpreting the world and conducting research, and that no singular method can encompass all possible realities (Morgan, 2007). In pragmatic research it is assumed that nothing can either be completely inductive or deductive, subjective or objective, and that no research finding is either completely specific to a particular context, nor completely generalizable (Morgan, 2014; Shannon-Baker, 2016). Pragmatic approaches to research emphasize the research question and how particular questions may be best addressed to produce applicable and practical research outcomes (Hanson, Creswell, Clark, Petska, & Creswell, 2005). Pragmatic research is congruent with mixed-methods research designs (Creswell & Clark, 2007; Hanson et al., 2005).

Mixed-methods research intentionally engages different ways of knowing and valuing through the inclusion of multiple and diverse methods of collecting, analyzing, and representing social phenomena. Greene discusses mixed-methods as a way of thinking that seeks better, more comprehensive understanding of social phenomena, “understanding that it is woven from strands of particularity *and* generality, contextual complexity *and* patterned regularity, inside *and* outside perspectives, the whole *and* its constituent parts” (Greene, 2005, p. 208). Similarly,

Hanson et al., (2005) suggests that the integration of qualitative and quantitative data may enrich findings in a way that a single form of data does not. Likewise, Maxwell (2010) argues in defense of mixed-methods by discussing the use of numerical data in qualitative research as not necessarily being situated in a positivist paradigm, rather the paradigm that quantitative data is located in depends on *the way of thinking* about the numerical data. Strengths of mixed-methods research designs include: internal generalizability and triangulation, providing numerical data as ‘evidence’ to researcher interpretations of qualitative data, as well as qualitative data contextualizing the numerical data and allowing for previously un-thought phenomena and themes to emerge (Maxwell, 2010; Patton, 2002; St. Pierre, 2013).

Rationale for approach. I have chosen to employ a concurrent triangulation mixed-methods study, where equal priority is given to quantitative and qualitative data (Creswell & Clark, 2007; Hanson et al., 2005). This means, collection and analysis of quantitative and qualitative data occurred at the same time, were analyzed separately, and integration occurred at the interpretation phase (Hanson et al., 2005). My rationale for this approach is to utilize methods of data collection and analysis that are suitable for my research questions, as well as add multiplicity and depth to my research through the incorporation of the different lenses, perspectives, and strengths that qualitative and quantitative methods offer. Furthermore, employing a mixed-methods approach offers greater possibilities in presenting research outcomes in a manner that will appeal to a variety of audiences and increase potential practical impacts (Greene, 2005).

Field notes and semi-structured interviews are regarded as adequate methods of data collection when analyzing the effects of social factors and in answering more open-ended questions about a phenomenon (Denzin & Lincoln, 2011; Padgett, 2016; Patton, 1980; Patton,

2002). Similarly, thematic analysis (Braun & Clarke, 2006; Fereday & Muir-Cochrane, 2006) is well-supported by academic literature as a rigorous research method for answering my questions: how can physical environmental features afford risky play? How can social factors influence affordances for risky play? How do children express themselves emotionally and behaviourally through risky play?

Since I was interested in the degree of PA, rather than the quality of PA during risky play, a quantitative method of analysis appeared more suitable (Kaplan, 2004) in answering my research question: how does children's engagement with risky play impact PA levels? The tool of measure I used, Observational System for Recording PA in Children-Preschool (OSRAC-P) (Brown, Pfeiffer, McIver, Dowda, Almeida, & Pate, 2009), is a well-known, validated, and often utilized way of coding and analyzing children PA (Nicaise, Kahan, & Sallis, 2011; Pate, McIver, Dowda, Brown, & Addy, 2008).

Reflexivity

Reflexivity is the ability to “openly and honestly [recognize] one's location and experiences and deeply considering the implications of one's power” (Kirby, Greaves, & Reid, 2006, p. 39). Throughout data collection and analysis, I recorded my reactions to data and was able to examine biases that emerged. Throughout the process I was constantly questioning my own questions, thoughts, methods and continually checking in on how and why I was interpreting the data the way I was (Kuntz, 2000). I also engaged with numerous classmates and professors about my methods of collection and analysis in order to ensure honesty and integrity in my work. Since bias is inevitable, I have situated myself, explicitly stating my personal relationship and history with risky play in my positionality statement (See Chapter 1).

Ethics

Ethics was obtained for the qualitative data collection through the Human Research Ethics Board (HREB) at the University of Victoria in Canada, state file #10 1015 (See appendix G). I was added as a researcher to the ethics approval for the EnCompetence project by the Norwegian Social Science Data Services (NSD) in Norway, state file #54846/3/AH (See appendices A-B). Written consent for field notes was obtained from all parents and practitioners, and further written consent from interview participants was collected (See appendices D – F). Parents of children in the videos were asked to give written consent via email correspondence to my use of the videos from the EnCompetence project (See appendix C). Confidentiality was maintained by documenting field notes and interviews with no identifying details and data was stored on a password locked computer.

Participants and Research Site

Participants were previously recruited for another project, EnCompetence, conducted by researchers at the Queen Maud University College of Early Childhood Education, in Trondheim, Norway. EnCompetence is using eight kindergartens around Norway in their project analyzing the impacts of physical environments on children development, health, and well-being (<https://dmmh.no/en/research/projects/encompetence>). For the purpose of my M.A. thesis, I wanted to focus in more depth on one center. Dr. Ellen Sandseter chose the kindergarten location that she considered to be best suited for my research on risky play. My site of research was Gjemble Barnehagen (kindergarten), located in Levanger, a small town in the Trøndelag county in Norway. Gjemble is one of 100 ECEC institutions in Norway owned by a private kindergarten organization called Espira. I worked as an intern at Gjemble Barnehagen and collected data in the blå (blue) room, consisting of 28 children ages 3 to 4 years old.

I used focused-video observations that were previously collected by researchers on the EnCompetence project. These videos consisted of ten children (five boys and five girls) ages 3 to 4 years. The ten children were selected through the process as follows: all parents of children in ages 3 to 4 years were asked for consent, and from the group that gave consent, five boys and five girls were randomly selected.

I asked to conduct interviews with parents from three of the children who were in the focused-video observations and were prevalent in my field notes, and one parent whose child was predominant in field notes with occurrences of risky play. I did not specify which parent; one set of parents (a mother and father), two mothers alone, and one father alone showed up for the interviews. Similarly, I chose to interview four practitioners that were the most prevalent in my field notes. Practitioners had between three to six years of education related to ECEC and had been working in ECEC for more than ten years with experience ranging from 11 years to 27 years. The practitioners chosen for interviews (three female, one male) had been at Gjemle Barnehagen for between ten and 18 years. My rationale for the selection of parents and practitioners was to create congruency across all data collected (videos, field notes, and interviews).

Methods

Given I utilized a variety of methods in my study, I will provide an overview of which methods of collections and analysis were utilized for specific research questions (See Table 2).

Table 2*Overview of Collection and Analysis Methods*

Collection & Analysis	Quantitative	Qualitative
Questions	How does children's engagement with risky play impact PA levels?	How can physical environmental features afford risky play? How can social factors influence affordances for risky play? What are some of children's emotional and behavioural expressions during risky play?
Methods of Collection	Focused-video observations	Focused-video observations Field notes Semi-structured interviews
Methods of Analysis	Observer XT 12 (Grieco, Loijens, Zimmermann, & Spink, 2007) and MS Excel to code for risky play (Kleppe et al., 2017; Sandseter, 2007), PA with OSRAC-P (Brown et al., 2009) Statistical analysis through IBM SPSS Statistics Version 22 (IBM Corp, 2013) and Microsoft Excel	Qualitative coding and thematic analysis of physical environments features on focused-video observations Thematic analysis of field notes for social factors and physical environmental features Thematic analysis of semi-structured interviews for social factors

Process of Collection and Analysis

The sequence and process of analysis was designed to allow for findings to emerge as independently from each other as possible, meaning that I did not want findings from one set of data (i.e. focused-video observations) to influence my interpretation of findings from another set of data (i.e. field notes). Below is an ordered overview of the process of data collection and analysis:

- Collect participant observer field notes and semi-structured interviews (Patton, 2002) from Gjemble Barnehaugen

- Acquire focused-video observations (Patton, 1980) previously collected and coded for PA and setting (indoor/outdoor) by researchers for EnCompetence project
- Use Observer XT (Grieco et al., 2007; Zimmerman et al., 2009) to code focused-video observations for occurrences of risky play
- Qualitatively coded the focused-video observations via paper and pen for the physical environments that risky play was occurring in
- Qualitatively code physical environmental features appearing in field notes consisting of risky play
- Codes pertaining to physical environments from the two data sources (focused-video observations and field notes) for risky play were further grouped into themes by deductive thematic analysis (Braun & Clarke, 2006) and presented in a taxonomy of affordances (See Table 7)
- Thematic analysis was conducted on field notes and interviews prior to the statistical analysis of coded videos
- Inductive thematic analysis (Braun & Clarke, 2006) was used to generate themes pertaining to social factors that may have influence on children's affordances for risky play, as well as children behavioural and emotional expressions of risky play
- Statistical analysis of codes from focused-video observations was conducted, including descriptives and correlations on risky play, PA and setting (inside/outside) in SPSS Version 22 (IBM Corp, 2013).

Quantitative Data Collection

Focused-videos observations (Patton, 1980) were collected by researchers at Queen Maud University College of Early Childhood Educations, for the EnCompetence project. The quantitative data collected consisted of 472 2-minute focused-videos observations of children's play at Gjemble Barnehagen. Videos were collected over two one-week periods in October 2017 and October 2018. The protocol for focused-video observations is as follows:

- child #1 was recorded for 2 minutes, 6 minutes break in order to find next child
- child #2 recorded for 2 minutes, 6 minutes break and then back to child #1
- Each child was recorded for 6, two-minute segments outside and 6, 2 minutes sequences inside (12 minutes total)
- The starting location and order of children was previously decided to remove potential influence of research on scenario recorded

If a child was unable to be recorded for reasons such as toileting or other non-recordable scenarios, then the time-table was postponed for up to ten minutes. After ten minutes, the researcher would move on to recording the next child and complete a missing observations sequences at the end of the time-table.

Quantitative Data Analysis

The focused-video observations were previously coded for PA and social context from OSRAC-P (Brown et al., 2009) by researchers from EnCompetence. I then coded the videos for risky play, using the eight categories identified by Sandseter (2007) and Kleppe et al., (2017). Excel and Noldus Observer XT 12.5 (Zimmerman et al., 2009), a software developed for behavioral coding, analysis, and management of observational data, were used to code videos.

Observer XT was used for coding moments within the videos (risky play and social context), whereas Excel was used for assigning a code for the whole 2 minute video (PA and indoor/outdoor). The data from Excel and Observer XT was exported to SPSS Version 22 (IBM Corp, 2013) and into another Excel file. Once data was in SPSS, I generated statistical information on risky play, PA, social context and environment (indoor/outdoor). I ran frequencies and descriptive statistics on types of risky play, and correlations between risky play and PA, as well as social context and setting (indoor/outdoor). I used Excel to double-check frequencies and descriptive statistics. I ran the analysis several times on both SPSS and Excel and had an experienced quantitative researcher (Ole Johan Sando at Queen Maud University College) review my analysis to ensure accuracy. The following three paragraphs provide descriptions of the measures used in the quantitative analysis.

Risky play. Engagement with risky play was coded using Sandseter's (2007) six types of risky play; play at heights, play with speed, play near dangerous elements, play with tools, rough-and-tumble play, and play where children can disappear/lost, and Kleppe et al., (2017) more recent categories of impact, and vicarious.

PA. PA was coded using OSRAC-P (Brown et al., 2009). The OSRAC-P codes PA from 1 (stationary) to 5 (fast movement), considering both speed and characteristics of movement. For example, moving a heavy object up a hill could be considered a 5 (fast movement) on the OSRAC-P scale (See appendix I).

Qualitative Data Collection

Qualitative data was collected from the same ECEC institution in Levanger, Norway as the focused-video observations. Field notes were collected as data over a two-month period, consisting of 100 hours of observations, over 33 days, through overt participant observation field

notes (Patton, 2002). Participant observation is a method of qualitative data collection where the researcher collects data while being immersed and interacting with people in everyday life (Jorgensen, 2015; Patton, 2002). Field notes included personal reflections, questions and detailed descriptions of the environment, documentation of conversations, documentation and descriptions of occurrences of risky play, practitioner-child interactions, pedagogical practices, and social factors that may impact affordances in risky play (Little & Sweller, 2011; Little et al., 2011; Little et al., 2012; Sandseter, 2014; Sandseter & Sando, 2016). Field notes were made via pen and paper and were recorded during or soon after documented occurrences, as well as at the end of each day from memory. Each evening handwritten notes were typed into a Microsoft Word document. In some notes I was positioned at a distance and observing, and in others I was actively engaged in the play. I ensured to engage in the play as similarly as possible to the other practitioners at the kindergarten by following rules, protocols, and pedagogical practices of Gjemble Barnehagen.

I conducted eight, 30 to 45 minute, semi-structured interviews (Patton, 2002) with practitioners (4) and parents (4). The semi-structured interviews were conducted to gain insight into social factors that may influence affordances for children's risky play. In order to address potential social factors, a literature review on barriers to children's opportunity to engage in risky play was conducted. Interview questions (See appendix H) were derived from barriers identified in previous literature, such as parent and practitioner attitudes, access to natural environments, safety policies, pedagogical practices, and practitioner skill sets (Brussoni et al., 2012; Wyver et al., 2010).

Qualitative Data Analysis

I employed Braun and Clarke's (2006) six-phase process to thematic analysis: familiarized myself with the data corpus (read and re-read); generated initial themes through open coding (Liamputtong, 2009); generated themes by analysing the codes and began to imagine how they could fit into an overarching theme; refined themes ensuring "data within themes cohere[d] together meaningfully" and that there were "clear and identifiable distinctions between themes" (Braun & Clarke, 2006, p. 20); infer the 'essence' of each theme; identified sub-themes, and produced a report presenting the themes.

Deductive, meaning theory-driven (Braun & Clarke, 2006), thematic analysis was first performed on the focused-video observations, by qualitatively describing and then coding physical environmental features during video segments including occurrences of risky play. Similarly, field notes containing observations of risky play were coded for physical environmental features. Following the coding of focused-video observations and field notes, codes were then grouped into themes and a taxonomy of physical environments affording risky play was generated through Gibson's theory of affordances and built off of Heft (1988) and Kytta (2002, 2004) previous taxonomies.

Inductive, meaning data-driven (Braun & Clarke, 2006), thematic analysis was conducted on field notes with occurrences of risky play, coding for children's emotional and behavioural expression during risky play. Codes were grouped into themes and themes were further refined, and concise descriptions were generated to capture children expressions during risky play. Examples of field notes that included occurrences in risky play were chosen to exemplify the emergent themes.

Inductive thematic analysis was conducted on all field notes and interviews. Social factors, such as practitioners' attitudes towards risky play, pedagogical practices, and nuances of the daily routines were coded and grouped into themes. Similarly, transcribed semi-structured interviews with practitioners and parents were coded for social factors and grouped into identified themes. There was significant overlap between themes in field notes and interviews, therefore I made the decision to merge and further condense themes to delineate social factors that may influence affordances for risky play. Themes were further refined, clearly defined, and a cohesive report illustrating the essence of social factors contributing to affordances for risky play was produced. Quotes were chosen to represent the resulting themes.

Summary of Chapter

In this chapter I have discussed and provided rationale for my research approach of pragmatism and mixed-methods. I then provided details on reflexivity, ethics, research site and participant recruitment. I concluded the chapter by outlining the quantitative and qualitative methods and measures that I used in my data collection and analysis. In the following chapter I will present findings from my research study.

Chapter 4: Findings

This chapter presents findings from my research. I first provide demographic information on the town of Levanger. I then present identified themes from my analysis of the social factors influencing affordances for risky play, followed by findings on physical environmental features. I will introduce a taxonomy of physical environmental features generated through my analysis. The taxonomy categorizes environmental features relative to the opportunities they provide for children to engage in risky play. The final section pertains to children's actualization of risky play. These results include statistical information on children risky play and correlations between risky play, PA, and indoor/outdoor settings. I will also present findings from qualitative analysis of children's emotional and behavioural expressions during occurrences of risky play.

Throughout the chapter, quotes and examples from field notes will be used to illustrate and support the themes presented. Respondents from interviews will be identified as follows: gender (M/F), practitioner/parents (Pr/Pa), age. (e.g., Male, practitioner, age → MPr32). Field notes will be identified as follows: FN, date (e.g., field note from December, 12, 2018 → FN12.12.2018).

Demographic of Study

Levanger is a town in the Trøndelag county, within Levanger Municipality and is located along the Trondheimsfjord. Levanger Municipality spans 646 square-kilometres, consisting of 20254 residents. The town of Levanger consists of 5.25 square-kilometers with a population of 10189 (Statistisk sentralbyrå, 2019). In 2002, Levanger joined an Italian initiative, known as Cittaslow, meaning 'slow towns,' in order to reject the movement towards a more 'fast-lane'

lifestyle in modern towns (Cittaslow, 2016). The following demographics are on Levanger Municipality.

Table 3

Levanger Immigrant Population

Nationality	Population	% of total population of Levanger	Number of immigrants in Norway	% of immigrants in total population in Norway
Immigrants	944	4.20	948 421	17.80

Note: Includes children of immigrants, non-Norwegian citizens upon birth

The immigrant population (including children of immigrants) in Levanger Municipality is 4.20% of the total population, whereas the entirety of Norway's population is 17.80% immigrants, meaning Levanger Municipality may be more homogenous than other areas in Norway.

Table 4

Levanger Average Household Composition and Income

Household Composition	Median Income after tax Levanger (NOK)	Median Income after tax Norway (NOK)
Living Alone	277 000	293 100 (under 45 years) 329 500 (45 – 65 years) 266 300 (65+)
Couple without child	610 000	604 600 (under 45 years) 764 599 (45 – 65 years) 574 000 (65+)
Couple with children 0-7 years	779 000	762 800 (child 0-7 years) 889 400 (child 7-17 years)
Single parents with child 0 – 17 years	409 000	410100
Norway		510 000

Income in Levanger Municipality is slightly lower than the average in Norway, however this may reflect the relative costs of living in a small town, versus a larger metropolitan city such as Oslo.

Table 5

Levanger Education Level of Citizen Over Age 16

Highest education level completed	Levanger number (n =) and percentage of population holding education level	Norway percentage of population holding education level
Upgraded or not complete education	0.35	0.53
Primary School level	18.14	26.2
High School level	31.88	37.40
University and College level long (over 4 years)	6.00	9.70
University and College level card (up to 4 years)	21.61	23.70
Doctorate		1.00

Levanger Municipality is generally well educated compared to Norway as a whole. There is a lower percentage of individuals who have obtained less than a university degree living in Levanger when compared to Norwegian averages. The gap between Levanger and Norway decreases as education levels increases which suggests that Levanger has less disparity between education levels than the rest of Norway. Furthermore, 97.3% of children in Levanger Municipality, 97.3% of attend kindergartens, which is higher than the Norwegian national average of 91.8%.

Social Factors and Risky Play

Findings from my research on physical environmental features affording risky play, PA levels during risky play, and children's expressions during risky play, exist within and are contingent on greater social factors and context. Therefore, I have chosen to first present themes regarding social factors and risky play. I identified the following themes through thematic analysis of field notes and parent and practitioner interviews. I have divided the themes into three categories: (1) childhood assumptions, (2) attitudes of practitioners and parents towards risky play, and (3) pedagogical practices. I will present my findings in a linear manner, however themes in social factors are all interdependent and reciprocal. In the subsequent pages, I will provide definitions and examples from my data pertaining to themes in social factors influencing children's affordances for risky play. Table 6 provides a visual representation of text that follows.

Table 6

Themes in Social Factors

Category	Definition of Category	Theme	Definition of theme
Childhood Assumptions	Practitioner's general view of children	Children's voice	Importance of children's input in the construction of the daily routine and environment
		Children as competent	Underlying notion that children were capable
Attitude Toward Risk (Practitioners and Adults)	Parents and practitioner's beliefs and attitudes around risk taking and risky play	Risk as normal	Risk as a natural part of children's lives
		Learning by doing	Process of learning through action, allow children to make mistakes
		Importance of PA	Value placed on children being physically active and developing gross motor skills

		Value in risk (sub-themes: <i>risk-assessment, toughness, self-confidence, physical skills, feeling of experience</i>)	Allowance for risky play to happen because of the value
Pedagogy	Describes pedagogical approaches and practices	Prepare for independence	Practitioner's role to prepare children to be independent and meet challenges outside of the kindergarten
		Play with children	Staffs active engagement in play with the children
		Importance of physical environment	The physical environment as an important factor in their pedagogical practice
		Value in ECEC	Professional development, sophistication of the kindergarten organization involvement in research

Childhood assumptions. The thematic category of childhood assumptions refers to practitioner's general view of children. The following themes, *children as competent* and *children's voices*, describe practitioners' way of perceiving and thinking about children.

Children as competent. This theme emerged as an underlying notion that children were capable. Viewing children as competent came through in the way practitioners discussed children and their capabilities, and in freedom and agency children were granted. The following examples exemplifies a practitioner's view of children as competent and capable beings:

I had a conversation with a staff member today about children's competencies in dressing themselves for the outdoors. She told me that "if children get a chance, they can do many things, you have to let them try, they can do many things" and that when they do it that are so proud "I can do, I can do". She said some children get angry when adults try to help and that "they are not babies." (FN11.09.18)

The following field note recounts an incident where a child was given the freedom to partake in a risky activity that was intended for an older group of children:

The green group children (age 5) were using proper saw, hammer, and nails outside to make birdhouses out of wood. There was a bag of nails on the table, with hammers and saws on the ground. One teacher was standing back about 5M watching. One boy from the blue room (age 3-4) joined in. When I asked the staff member why the younger child had also joined in, his response was “I supposed he wanted to.” The younger boy from blue room was walking around with the saw in his hand chatting to another boy from blue room on a bike. (FN11.15.18)

In an interview with a practitioner, she expressed the competencies of children and the joy it brought her:

And then if they try, we can see it in their eyes “oh Sonja I can do it, I did it, I’m good, I am the best.” That can be just on small things, to put on the sock by himself, or put on the hood by himself, or pulling up zipper by themselves, and we are trying and trying and trying and suddenly they do it “AHH I DID IT, I DID IT TODAY BY MYSELF” and my heart is so warm. (FPr49)

Children’s voice. This theme denotes the prevalence of practitioners referring to the importance of children’s input in the construction of the daily routine and environment. The following example of this occurred in a discussion with pedagogical leader about curriculum planning. She stated that: “The children’s voice have to also have a big place in our plan. We cannot plan a curriculum until we build a relationship with the children, we don’t know what we are going to do because the children’s voices matter” (FN12.11.18). Another example of this theme occurred in an interview with a practitioner where she discusses children’s competencies

in having control over their environment: “With the planks (in the playground), they are very inventive, they change it all the time and find different things to do with them. They are more creative than I am. So it’s good” (FPr66).

Attitudes towards risky play. The thematic category of attitudes towards risky play appeared through field notes and interview responses from parents and practitioners regarding their beliefs around risk taking and injuries in the kindergarten. Themes that emerged include *risk as normal, learning by doing, importance of PA* and *value of risk*. Within the theme *value of risk*, sub-themes were developed to indicate practitioner and parents identified benefits of risky play. These sub-themes were *risk-assessment skills, toughness, self-confidence, feeling of experience, and physical skills*.

Risk as normal. This theme denotes parents and practitioners view of risk as a natural part of children’s lives. The theme emerged through the prevalence of statements regarding injuries occurring during risky activities as *normal*. Practitioner’s answer to a question about parent’s responses to risky play at kindergarten exemplify this:

They respond very good. The parents are totally on with our methods and its completely normal in Norway that we are doing these things, its normal. And the parents say it can happen, it can happen at the kindergarten and it can happen at home because they are doing the same things at home as they are in the kindergarten. (FPr49)

Similarly, a practitioner states: “I think most parents are ‘ok that’s what’s happen, I am happy that my child is active, so its normal that things happen’ I cannot remember that we have had some parents that have been angry” (FPr59). Practitioner’s perception and recollection of parental responses to injuries occurring at kindergarten is congruent with parent’s interview answers:

I would never ever blame the Barnehagen for if *** fell from a tree or something. She climbs at home, she climbs around our balcony and I've had to catch her a few times and say hey *** what happens if you fall down there. (FPa35)

One parent indicates that if injuries weren't happening, then the children probably weren't being active enough at kindergarten: "Let the kids play, if they are not hurting themselves a little bit, then they are sitting too much still" (MPa33). Likewise, a practitioner denotes that development and well-being requires movement that may involve some risk: "That's normal, you cannot develop and have a good time just walking in the middle of the road, sometimes something happen when you bike, go skiing" (FPr59).

Learning by doing. This theme emerged as a common thread throughout field notes and interviews. "Learning by doing" is often explicitly stated, as well as implicitly implied in narratives describing the process of learning through action. *Learning by doing* refers to a pedagogical philosophy of letting children physically try, and maybe fail, rather than instructing or restraining. It also refers to an attitude to allow children to *do*, even if the outcome may not be favourable at that moment in time. An example of this occurred in a parent interview where it is stated: "I've said to them many times, there has been weeks when he comes home with a new injury every day. Bump in the head, cuts and bruises and I said well he's got to learn" (MPa59).

The majority of practitioners responded to the question - how do you think children learn? with some iteration of *learning by doing*. Quotes demonstrating this include:

I think they learn by trying, learning by doing, they have to try, try things and to learn it, I don't think they learn it by one of the staff standing and saying blah blah blah, I don't think they learn by that, if they get to try, they learn more, that's more meaning. (MPr35)

And another practitioner states: “By doing things, that they, you learn through your hands if you do things then you understand it better than to only read it and hear it. Learn by doing. It’s obvious actually” (FPr66). Similarly, the notion of *learning by doing* appeared in my field notes:

In conversation with a staff she said that “the philosophy in Norway is kids learn from their mistakes, so if they try something dangerous and fall, get a bit hurt, oh well they learn, the kids are quite tough, they want to try things.” (FN11.01.18)

In another example of learning by doing from my field notes, I recall children cutting vegetables and the practitioner’s facilitation of the exercise:

The children cut the vegetables that they had bought at the shop last week to make a soup. One of the staff members sat at a table with 6 children, each child was given a proper knife. Children were very focused, and the staff member provided very minimal guidance, allowing the children to try cutting in many different ways, often “poking” themselves and exclaiming “ouch.” When this occurred, the staff laughed and said something that seemed to be encouraging. One of the boys kept poking himself due to cutting with the knife upside down. One girl cut her finger and it bled. A staff member gave her a band-aid, and she resumed cutting, exhibiting more caution. All children showed focus and perseverance in cutting the vegetables. The staff member said to me “it is learning by doing.” (FN11.08.19)

Importance of PA. This theme refers to the emphasis and value placed on children being physically active and developing gross motor skills. The theme appeared in both parent and practitioner’s interviews and field notes. Parents’ responses to questions about how children spent their time outside of the kindergarten unanimously included PA: “We try to be outside as much

as we can, in the winter we go skiing, cross-country skiing, just try to be outside, we have a hilly back yard, so they can run their skis” (MPa33).

Swimming, hiking, we like to go to the library, if there are exhibits or theatre things we like to go to. And the boys they play handball so we have, we spend a lot of time going to matches or games, it’s a really physical sport, much more than soccer or basketball, lots of physical contact. (FPa35)

Practitioners also stated the importance of PA in interviews: “I think it’s important to be physical and making the physical environment, and that we are making it for the children so they can be physically active” (FPr49). Another practitioner expressed it was important the children got, “a really really long good time playing outside, to use their body and their creativity, we have a really big area outside so that they can use their body and perhaps be a little exhausted” (FPr59). Practitioners also asserted that getting the children physically active was a focus: “we have been thinking about that and talking about that a lot in the staff and how we are going to get the kids more active” (MPr35). The importance practitioner’s place on children’s engagement with PA was also prominent in my field notes as shown in the following examples: “After the children played on obstacle course set up outside by a staff member, she said to me ‘it is important that children move their bodies, so now they have done that and can go do other play’”(FN11.05.19).

In the tumbleroom, a staff member said to me “we have no rules in here, the children can be as loud as they want, to help get the energy out” and “we think it is very important that the children use their bodies.” (FN10.30.19)

Value in Risk. The theme of *value in risk* emerged through parents and practitioner’s acknowledgement that although they are often nervous during children’s risky play, they allow it

to happen because they see *value* in it. Examples of practitioners and parents allowing risky play despite their own discomfort include: “I don’t want to let my fear limit them with their behaviour in their play. So, both of the boys they jump on the highest” (FPa35).

I don’t even want her walking on icy roads because she could fall and hit her head, but I know that is something she needs to do and she needs to learn and it’s something that is part of her life in Norway. (FPa35)

A practitioner said: “I think it’s good that they try and climb, but I look at it with a bit concern sometimes, I don’t like it, but I leave them to do it” (FPr35).

Another way *value of risk* appeared was in parents and practitioner’s ability to identify benefits of risky play. Sub-themes within *value of risk* that emerged regarding parent and practitioner identified benefits of risk play included *risk-assessment*, *toughness*, *self-confidence*, *physical skills* and the *feeling of experience*.

Risk-assessment refers to the development of children being able to adequately assess risks without the interference of adults. *Toughness* refers to the children’s resilience and ability to meet challenges, overcome adversity and rebound from failures. *Self-confidence* is used to identify the development of children positive feelings towards themselves. *Physical skills* refers to the gross-motor development and being physical active. *Feeling of experience* encompasses the thrill, joy, fear, and sense of accomplishment that often accompanies risky play. In many responses, especially from practitioners, several of these themes were prevalent at once. An example where the themes of *risk-assessment*, *self-confidence* and the *feeling of experience* were discussed in conjunction is this quote by a practitioner:

I think we have to let them try to feel to, try to learn it or get that experience by feeling it, how it work and if they climb and fall down, they feel, oh it was too risky, but if they

climb up and made it and they are YEAHH I can climb and I feel that too, so I think we let them get that feeling and get that experience from that. (MPr35)

Another quote that exemplifies the interconnectedness of *self-confidence* and the *feeling of experience* is highlighted in a practitioner's interview:

And we can have some children that are a little bit afraid and they are "oh no I don't want to do that" and then we can say "you can try come on, you can try, see, see the other children, its ok you can try" and then if they try we can see it in their eyes "oh Sonja I can do it, I did it, I'm good, I am the best." (FPr49)

Physical skills was the most referenced benefit of risky play by parents. One parent stated that: "I am a physio, so I believe it's important for children to explore and use their bodies as quick as possible for evolving their motor skills" (MPa30,31). Another parent said that that risk taking in play was valuable because her child's "motor skills are a lot better compared to other kids in same age" (FPa35). A practitioner discussed the benefits of risky play with the themes of *toughens* and *physical skills* in her remark:

I was so impressed, so the children have the opportunity to play like they do here and when we are out hiking, I think they will be more strong, and it's one thing to be strong in the body, but also in the mind. (FPr59)

Pedagogy. The thematic category of pedagogy contains themes describing pedagogical approaches and practices expressed in practitioner interviews and in my field notes. Pedagogy is the art of teaching and is widely considered influential on children's experiences and development (Siraj-Blatchford, Muttock, Sylva, Gilden, & Bell, 2002; Stephen, 2010). Several themes emerged surrounding pedagogical practice including *prepare for independence*, *play with children*, *importance of physical environment*, and *value in ECEC*.

Prepare for independence. This theme denotes practitioners identifying their role at the kindergarten is to prepare children to be independent and meet challenges outside of the kindergarten. This theme emerged in interviews from quotes such as:

Make them available to meet life outside the kindergarten, to make them prepared, when you are unsure, but you are available to meet all of the things they will meet outside, prepared to meet the life they will meet outside of the kindergarten, prepared for like at school, prepared to meet that, that is my role. (FPr49)

Play with children. This theme denotes staffs engaging in play with children. In my field notes this theme emerged through conversations with practitioners as shown in the following field note:

A staff said to me that “it is important that adults ‘close their pockets’ and engage more with the children when they are outside. She stated that staff need to work towards the “the playful adult” and need to be physically and psychologically on and playing with the children. (FN12.10.18)

In another field note a practitioner joined the children’s risky play: “The children were sledding down a hill today and a staff member was joining in. I asked her ‘are you going to go down’ she exclaimed ‘oh yeah, I love it!’” (FN12.13.18) This theme also appeared interviews where a practitioner responded to my question – How do you see your role at the kindergarten: “I am mostly outside with the kids playing with them, doing stuff with the kids. I am here mostly for the kids, I like to be with them most days” (MPr35).

Importance of physical environment. Practitioners often references the physical environment as an important factor in their pedagogical practice. This theme emerged primarily through interactions with practitioners documented in my field notes such as the following: “A

staff member stated that the weekly meetings to talk about how to make the environment work for the children ‘is really important’” (FN10.30.18). Another field note exemplifying the importance of the physical environment is as follows: “Staff were making changes to the environment because they felt that ‘it is a bit boring’ for the children now” (FN11.14.18).

Value in ECEC. The value placed on ECEC as a profession emerged through the prevalence of professional development and sophistication of the organization, as well as the ongoing involvement in research. This theme is exemplified in the following field note:

The Headmaster of the kindergarten explained how the pedagogical leaders often (a few times a year) attended professional development conferences. She said that the headmasters of all the kindergartens in Levanger got together once a month to share ideas to ensure that they are continually developing and improving the kindergartens for what is best for the children. (FN11.26.18)

In discussion with a staff member she said that she uses weekly planning and meetings to maintain professional feeling to their work. She said that: “Lots of professionals are talking about how the early years are the most important age in children’s lives and that we need to know and remember how important our work is” (FN12.10.18). Another example of professional development and mentorship from my field notes includes:

The pedagogical leader informed me that she will be spending 1 hour with a staff member, who is a level below a kindergarten teacher to discuss how she is going and prepare her for an exam to be a kindergarten teacher assistant. (FN11.01.18)

The value placed on ECEC through the ongoing involvement with research project’s is exemplified in the following field notes:

Today a PhD student from a research center that is developing curriculum in math for ECEC came to the kindergarten. She gave a seminar on how to teach spatial-awareness to ages 3-4 years. Then one of the teachers taught a group of children and the researcher observed and provided feedback. (FN11.14.18)

Gjemble is involved with 2 research project, the math curriculum one and EnCompetence. One of the pedagogical leaders told me that they are also working with a PhD student from the local university research PA in ECEC. (FN11.14.18)

Environmental Features and Affordances for Risky Play

In analyzing how physical environments may lead to affordances for risky play, I drew on Gibson's (1979) theory of affordances and the related taxonomies Heft (1988) and Kyttä (2002) developed regarding children's play environments. I have included and extended on Sandseter's (2009a) research specifically relating to affordances for risky play in ECEC. For each of the eight categories of risky play, I have identified environmental features that afford a given type of risky play (heights, speed, etc.) and the specific affordances offered (climbing, running, sledding, etc.).

An example of an environmental feature that affords risky play at great heights would be one that is *climb-able*, *balance-on-able*, *swing-on-able* and/or *hang-from-able*. A feature that affords play at speed can be *slide-down-able*, *bike-able*, *ski-able*, *sled-able*, *roll-down-able*, *run-down-able*, *swing-on-able*, *move-fast-able* and/or *skate-able*. A feature affording rough and tumble play can be *play-fight-able*, *throw-able* and/or *push-others-off-able*. A feature affording play with dangerous tools would be *cut-able* and/or *hammer-with-able* and structures affording disappear/exploration can be *build-with-able*, *hide-in/under-able* and/or *explore-able*. Features

affording impact are *run-into-able*. Environments affording play near dangerous elements allow for injuries to occur through elements such as *fall-off-able*, *slip-on-able*, *fall-into-able* and *burn-from-able* features. Any environmental features that allows children to clearly observe other forms of risky play, affords vicarious risky play. Environmental features may afford more than one type of risky play; a hill affords play with speed in forms of sliding down, rolling down, skiing, sledding, cycling and running downhill, as well as rough and tumble play, in the form of play fighting.

I have divided my taxonomy, shown in Table 7, into three categories; stable features, moveable features, and weather features. Stable features consider environmental structures or objects that children cannot manipulate themselves, compared with moveable features where children have the ability to change their environment. In the risky play taxonomy for height I have rope as a stable structure, because in this instance I am referring to a slack-line, where rope is tied between two trees and children can balance and/or walk across. In the risky play taxonomy for rough and tumble play, I have identified rope as a moveable feature, because this refers to rope that can be used for tug-a-war or tying each other up. Weather features refer to environmental elements created through weather patterns, such as frost, snow, and ice. Weather features are not considered as affordances in Heft (1988) and Sandseter's (2009a) taxonomies for children's play and risky play. In my analysis, weather features emerged as affording a significant amount of risky play. Paradoxically, weather can often be viewed as a barrier to outdoor play (Goodman, Paskins & Mackett, 2012; Tucker & Gilliland, 2007).

Table 7

Taxonomy of Environmental Features of Affordances for Risky Play

Type of Risky Play	Heights	Speed	Rough & Tumble	Dangerous Tools	Disappear/Get Lost/Explore	Impact	Elements	Vicarious
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-Able-	Climb-able Jump-down-off-able Balance-on-able Swing-on-able Hang-from-able	Slide-down-able Bike-able Ski-able Sled-able Roll-down-able Run-down-able Swing-on-able Move-fast-able Skate-able	Play-fight-able Throw-able Push-others-off-able	Cut-able Hammer-with-able	Build-with-able Hide-in/under-able Explore-able	Run-into-able	Fall-off-able Slip-on-able Burn-from-able	Watch-able
Affords	-affords climbing up -affords jumping down off of -affords swinging/hanging from -affords balancing on	-affords sliding down -affords rolling down -affords skiing affords sledding -affords cycling -affords running downhill -affords swinging -affords skating -affords moving fast on	-affords wrestling -affords pushing others off of -affords tug-a-wars -affords tying other people up -affords throwing - affords striking - affords fencing -affords snow ball fights	-affords cutting -affords whittling with -affords hammering with -affords cutting with -affords axing	-affords building structures for hiding in (cave, forts) -affords exploration, getting lost, disappearing, hiding -affords hiding under	- affords running into mats and walls	-affords injury due to elements	-affords watching risky play
Stable Features	Climbing wall Wood Rounds Forest Tree Climbable structure Ledge Swing (regular, circle, tire) Ropes	Hill Trail (dirt, gravel) Swing (regular, circle, tire) Flat surface (concrete, grass, dirt)	Flat surface (concrete, grass, dirt) Hill Soft-Moveable Objects Tumble-room	Forests	Tumble-room	Fire pit Forest Deep water or moving	All stable features	

Moveable Features	Soft-moveable object Loose Materials (tires, wood planks, crates)	Wheels (toy truck, bike, toy stroller, toy wheel barrel) Sled Skis Mats	Loose Materials (tires, wood planks, crates) Rocks (small) Sticks Chains Ropes Blankets Soft-Moveable Objects Mats	Kitchen knives Rocks Hammer and nails Saw Axe Loose Materials (wood planks)	Loose Materials (tires, wood planks, crates) Mats Blankets	Mats Soft-Moveable object	Loose materials (tires, wood planks, crates)	All moveable features
Weather Features		Frost Ice Snow	Snow	Snow		Ice		All weather features

Loose materials (tires, wood planks, plastic crates) meaning moveable parts and equipment placed within children's play spaces for unstructured play (Gibson, Cornell, & Gill, 2017) appeared as an environmental feature affording risky play through frequency and quality. Risky play with loose materials was varied, creative, and expansive. As seen in Table 7, loose materials were used to create structures for play at heights, incorporated in rough and tumble play, utilized with dangerous tools (e.g., hammering wood planks together with nails), to create structures to hide or disappear into, as a dangerous element, and through vicarious risky play. Figure 7 and 8 exemplify the diversity of risky play afforded by loose materials. In the following images planks and plastic crates are being used for play at heights, as well as creating a space to disappear or 'get lost' in. In my observations, the heights structure, was also used for rough and tumble play, as children were pushing each other off of the plank (FN12.04.18).

Loose Materials Diverse Risky Play 1



Figure 7. Loose materials being used for risky play type disappear/'get lost'.

Loose Materials Diverse Risky Play 2



Figure 8. The same loose materials being used for play at heights.

Loose materials also appeared to allow children to adapt the environment to their desired degree of risk. This is exemplified in the following field note:

During play on the structure with three wood circles and planks, two girls asked to hold the teacher's hands while walking on the planks. A boy removed a plank so that he could jump from circle to circle, adjusting the level of risk and challenge of the play structure.

(FN11.09.18)

In the field note above, one structure composed of loose material (wood rounds and planks), is utilized in a multiplicity of ways by three different children simultaneously. Figure 9 illustrates a separate occasion on the same structure, where one child is scooting her way along a wood plank, and the other children are either standing on their own or holding a teacher's hand.

Loose Materials & Risk Adaption



Figure 9. Children adapting levels of risk during play at heights.

The loose materials that I observed during my research, which include; wood planks, tires, and plastic crates (See Figures 7 - 9) were acquired for free by the practitioners at Gjemble Barnehagen (FN11.03.18).

Outcomes and Expressions of Risky Play

I analyzed risky play through quantitative and qualitative methods. The following quantitative results include statistics on setting (indoor/outdoor) and PA from focused-video observations. Qualitative findings include themes from field notes concerning children's emotional and behavioural expressions during risky play.

Outcomes. The children in the focused-video observations were composed of 105 boys and 117 girls ages 3.17 to 5.5 (boys: $M = 4.4524$, $SD = .63861$; girls: $M = 4.1495$, $SD = .64151$). Of videos coded with risky play (56.76%) were girls, and (43.24%) boys. The video was only coded for risky play if the child in focus of the video-observation directly engaged in risky play, therefore this distribution of genders does not represent all children involved in risky play on the videos. There are 37 occurrences of risky play, making up 2717 seconds, (10%) of the total video time of 27350 seconds. Half (50%) of the videos were taken inside and the other (50%) taken outside (50%), within the confines of the kindergarten's property. The majority of risky play occurred outside (67.57%) and all of the risky play occurring inside happened in the *tumbleroom* (32.43%) (gymnastics room with climbing wall). Of the coded risky play, (14.6%) of the total time is play with heights, (51.6%) is play with speed, (4.6%) is rough-and-tumble play, (12.9%) is play near dangerous elements, (9.5%) is play with dangerous tools, (0%) is where children disappear/explore, (4.8%) is play with impact and (2%), is vicarious risky play. In terms of occurrences the data consisted of 9 incidents of heights, 18 of speed, 5 of rough and tumble play, 3 of play near dangerous elements, 2 play with tools, 0 disappear/explore, 3 play with impact and 2 incidents of vicarious risky play.

Correlations pertaining to risky play and setting (indoor/outdoor) are shown in Table 8, suggesting that outdoor environments afford more risky play.

Table 8

Correlations Environment

Environment	<i>n</i>	<i>r</i>	<i>p</i>
Outside	223	.159*	.018

* $p < .05$. ** $p < .01$.

Focused-videos observations were coded for PA on Likert scale (1-5) using OSRAC-P (Brown et al., 2009). Descriptives and correlations on PA and risky play shown in Table 9 and 10 and suggest that PA may increase during risky play.

Table 9

Descriptive PA

Type of play	<i>n</i>	<i>M(SD)</i>
Non Risky Play	186	3.0161(.82)
Risky Play	37	3.743(.61)

Table 10

Correlations PA

Type of play	<i>n</i>	<i>r</i>	<i>p</i>
Risky Play	223	.325**	.000

* $p < .05$. ** $p < .01$.

Emotional and behaviour expressions. I identified three main themes describing children's emotional and behavioural expression during risky play present in my field notes with occurrences of risky play (63): *resilience*, *joyful thrill*, and *exploration and adaption of risk*. I will first present themes in Table 11, providing brief definitions and examples, followed by a more comprehensive description of themes and further examples in text.

Table 11

Children's Expression During Risky Play

Theme	Definition of Theme	Example
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Resilience	Children struggling with, failing, falling and/or hurting themselves during risky play, and continuing on with that play despite adversities	Play structure with 3 wood circles and planks; one boy slipped off a plank and hit his head on one of the circles. He then walked around looking like he was trying not to cry for about 1 minute. During this time myself and 2 other staff members watched the child, but did not intervene. Within 2 minutes the child had resumes play on the same structures and was laughing with a friend. (FM11.09.18)
Joyful thrill	Children's oscillating expression of enjoyment and fear during risky play	I pushed 2 children on the swing this morning who continuously said "more faster, more faster". Each time I pushed more faster they would first scream in what sounded like a mixture of excitement and fear, which was quickly followed by laughter. (FM12.03.18)
Exploration of risk	The action of children playing with and testing their own limits	A few boys were jumping off the wooden fort into my arms, telling me to go farther or closer to meet their needs of capabilities and challenge. (FM11.09.18)

Resilience describes the many experiences that I witnessed of children struggling with, failing, falling and/or hurting themselves during risky play, and then continuing on with that play despite those adversities. The following situation recorded in my field notes provides an example of resilience:

one of the boys who fell and cut his face (nose bleed) playing on the wood circles was back playing on it soon after the bleeding subsided. As he walked up the plank to the top of the wood circles, he fell again, got back on the plank and continued the rest of the way to the top of the wood circles on his knees. (FN10.31.18)

Another example where emotional and behavioural resilience was exhibited during risky play:

There were a few girls playing on the ropes that were set up between two trees for balancing. One girl starting at one end, began to walk across the rope. She fell off multiple times during the process. Her face scrunched up, appearing to be near tears, before getting back on the rope and carrying on. She eventually made it to the end.

(FN11.20.18)

Resilience



Figure 10. Resilience. The above picture illustrates (FN11.20.18) where one girl displayed resilience in her attempt to move across the balancing rope tied between two trees.

Joyful thrill refers to children’s oscillating expression of enjoyment and fear during risky play. Joy was often exhibited by children engaging in risky play through a “scream and giggle” or a “roar and laugh.” An example of “scream and giggle” occurred when: “I pushed 2 children on the swings and “they were osculating between screaming and giggling, exhibiting what appeared to be primarily joy with a little bit of fear” (FN10.31.18). An example of “roar and laugh” occurred during rough and tumble play:

There was a group of six boys outside engaged in rough and tumble play. There are two chains 2-3M long attached to the side of the kindergarten, typically used to chain up bikes

when they are not in use. The boys chased each other, tackled each other to the ground and then wrapped the chains around one of boys legs, capturing him. The participants expressions appeared to move back and forth between aggression (e.g., faces scrunching up like they are angry) and laughter. During this play there were three other children on the other side of a fence watching, their facial expressions matched those of the boys in the play. (FN10.29.18)

Joyful Thrill



Figure 11. Joyful Thrill. The above picture illustrates children playing at heights and with speed. During this play ample ‘screams and giggles’ occurred.

Exploration and adaption of risk describes the action of children playing with risk and testing their own limits. An example from my field notes of *exploration of risk* includes a situation where: “one girl climbed almost everything in the playground today, she seemed to start with something lower and easier and keep searching her way to a higher place to climb” (FN11.09.18). An example of *adaption of risk* occurred during play at heights, where 3 children playing on wood circles connected by moveable planks actively adapted the structure to their chosen level of risk:

During play on the structure with three wood circles and planks, two girls asked to hold the teacher's hands while walking on the planks. A boy removed a plank so that he could jump from circle to circle, adjusting the level of risk and challenge of the play structure.

(FN11.09.18)

Exploration and Adaption of Risk



Figure 12. Exploration and adaption of risk. The above picture illustrates two children exploring risky play at heights.

Summary of Chapter

Themes pertaining to social factors that may have influence on affordances for risky play, were broken down into three categories: childhood assumptions, attitudes towards risk of practitioner and parents, and pedagogy. Within each category themes that I identified include *children as competent*, and *children's voices*; *risk as normal*, *learning by doing*, *importance of PA* and *value in risk* (subcategories include *risk-assessment*, *toughness*, *self-confidence*, *physical*

skills and feeling of experience); *prepare for independence, play with children, importance of physical environment and value of ECEC*. I generated a taxonomy of environmental features affording risky play that include three categories: stable features, moveable features, and weather features. Each category includes specific environmental features and corresponding affordances in the eight risky play types (Kleppe et al., 2017; Sandseter, 2007). Themes identified through my qualitative analysis of children's expressions during risky play include *resilience, joyful thrill, and exploration and adaption of risk*. In my quantitative analysis, PA and outdoor settings were found to be statistically significantly correlated with risky play. In Chapter 5 I will synthesize research findings with relevant literature.

Chapter 5: Discussion and Conclusions

The majority of my findings are congruent with, and bring further support to, the current research and literature on the potential benefits of risky play. Findings that are consistent with the literature include children's expression during risky play as resilient, joyful, and thrilling; PA may increase during risky play; the majority of risky play occurring outdoors; and practitioner attitudes towards risk as influential on children's affordances (Brussoni et al., 2015; Little et al., 2012; Sandseter, 2010). In this chapter I primarily discuss findings that are absent from, or in need of more support in the current risky play discourse. I discuss the influence of pedagogical frameworks and childhood assumptions on risky play, as well as affordances for risky play provided by loose materials. I continue the prevalent and pertinent discussion on the relationship between children's PA and risky play.

Pedagogical Frameworks Influencing Affordance for Risky Play

My findings suggest that pedagogical theoretical frameworks, including Gibsonian (1979) and Hendry and Kloep's (2002) lifespan model of development, and childhood assumptions may impact affordance for risky play. There has been minimal exploration of pedagogical theories and practitioner's assumptions about childhood in relation to children's opportunities for risky play. However, practitioner attitudes about risk and personality traits have been extensively researched relative to children's risky play and have been considered influential factors on affordances (Little et al., 2012; McFarland & Laird, 2018; Sandseter, 2014; Sandseter & Sando, 2016). I propose, that in addition to practitioner attitudes and personalities, pedagogical and theoretical frameworks and practices, as well as practitioners underlying assumptions about children may also impact affordances for risky play.

As noted in Chapter 2, Gibsonian (1979) and Hendry and Kloep's (2002) lifespan model of development are the primary pedagogical theories and practices employed in ECEC in Norway. Gibsonian theory states that children's development occurs through interactions with the physical environment and Hendry and Kloep assert that development occurs through encountering challenges and acquiring the resources to meet them. Evidence of these theoretical frameworks seemed to be prevalent in themes identified in my research. Some themes that were identified pertaining to Gibsonian theory and lifespan model of development included *importance of environment, learning by doing, preparing for independence, risk as normal, and value in risk.*

Additionally, my findings suggest that practitioners operating from these pedagogical frameworks hold a specific set of assumptions about children. The assumptions about children that may be central to the above pedagogical theories, and I identified as a theme in my research is *children as competent*. In order for practitioners to apply Gibsonian theory and lifespan model of development to practice, they must hold some level of assumption that children are capable of managing their environment, challenge, and risk. One example of this emerged in the field note:

The green group children (age 5) were using proper saw, hammer, and nails outside to make birdhouses out of wood. There was a bag of nails on the table, with hammers and saws on the ground. One teacher was standing back about 5 meters watching. One boy from the blue room (age 3-4) joined in. When I asked the staff member why the younger child had also joined in, his response was "I supposed he wanted to." The younger boy from the blue room was walking around with the saw in his hand chatting to another boy from the blue room on a bike. (FN11.15.18)

In this example/excerpt, the practitioner appears to reject a more traditional ‘ages and stages’ (Piaget, 1951) model of development, and instead allows for the child to encounter ‘resources, challenges and risks’ on his own (Hendry & Kloep, 2002). Allowing children to encounter challenges as a developmental process requires trust that the children can not only manage the risks and challenges encountered, but also move through the challenge in a way that leads to them developing adequate resources themselves. Likewise, within a Gibsonian theoretical model, opportunities for independent exploration of the environment is a crucial component of pedagogical practice and again requires trust in children’s capacity to achieve developmental outcomes through their own process. Trusting children to develop sufficient resources through their own experiences rather than being taught by an adult is exemplified by one practitioner’s response to a question – How do you think children learn?

I think they learn by trying, learning by doing, they have to try, try things and to learn it, I don’t think they learn it by one of the staff standing and saying blah blah blah, I don’t think they learn by that, if they get to try, they learn more, that’s more meaning. (MP35)

In contrast to Gibsonian theory and lifespan model of development, a Vygotskian (1980) theory of development is underpinned by assumptions of children as incompetent, incomplete, and adult-dependent (Burman, 2016). Vygotsky states that children learn through achieving tasks first with an adult until they are able to do it successfully on their own. A practitioner operating within a Vygotskian framework sees children as developing because of their assistance, whereas in a Gibsonian and lifespan model of development, children are seen to be developing themselves, through their own experiences and challenges with the surrounding environment.

In a study, conducted by Sandseter et al. (2012), on the beliefs and practices of Australian and Norwegian teachers surrounding risky play, the researchers theorized that differing

pedagogical frameworks employed in Norway and Australia may be correlated with the differences in practitioner's ability to actualize their beliefs about risky play in practice. These researchers state that the pedagogical frameworks employed in Norway may give practitioners a way of thinking about pedagogy and development, as well as the skillsets needed to support children's risky play. My research finding on pedagogy influencing affordances for risky play is congruent with Sandseter et al.'s literature. However, in my research I also suggest that the childhood assumptions associated with Gibsonian (1979) and lifespan model of development (Hendry & Kloep, 2002) may be influential on, and influenced by these pedagogical frameworks.

I had not originally intended to collect field notes and interviews pertaining to the influence of social factors on risky play. However, in the early stages of data collection, it became apparent that social factors impacted affordances for risky play. My observations of practitioner-child interactions, the daily routine and environment, and conversations with practitioners, as well as interview answers instigated my curiosity into pedagogical theories and practices employed at Gjemble Barnehagen. As I explored the literature on ECEC pedagogy in Norway, I began to see congruency between Gibsonian (1979) theories and lifespan models of development (Hendry & Kloep, 2002) and my research findings. In my analysis of social factors, themes within categories of childhood assumptions and pedagogy corresponded with characteristics and ways of thinking associated with Gibsonian theory and the lifespan model of development.

Loose Materials Facilitating Exploration of Risk

Loose materials (tires, wood planks, plastic crates) meaning moveable parts and equipment placed within children's play spaces for unstructured play (Gibson, Cornell, & Gill, 2017) appeared as an environmental feature affording varied, creative and expansive risky play,

as well as allowing children to adapt levels of risk to meet their current capabilities. The ability for children to adapt the environment to their desired degree of risk, may promote the development of risk-assessment skills, which is a well-referenced benefit of risky play (Brussoni et al., 2012; Lavrysen et al., 2017; Little et al., 2012; Eager & Little, 2011). In my inquiry into children's expression during risky play, I identified the theme *exploration and adaption of risk* primary through my observations involving risky play with loose materials. This relationship is exemplified in the following field note:

During play on the structure with three wood circles and planks, two girls asked to hold the teacher's hands while walking on the planks. A boy removed a plank so that he could jump from circle to circle, adjusting the level of risk and challenge of the play structure. (FN11.09.18)

Not only do loose materials afford ample, diverse and adaptable risky play they can be more cost-effective than traditional stable play structures (Ball, 2003). I am specifically referring to the loose materials that I observed during my research, which include; wood planks, tires, and plastic crates (See Figures 9 - 12). These materials were acquired for free by the practitioners at Gjemble Barnehagen (FN11.03.18). Cost is referenced as a barrier in increasing play spaces affordances for risky play (Bundy et al., 2019), therefore loose materials may provide a cost-effective avenue for children's risky play. Loose materials could be particularly beneficial to playgrounds in urban settings, where natural areas that are compatible with risky play affordances (Fjørtoft & Sageie, 2000; Sandseter, 2009a) are not easily accessible. Furthermore, loose materials, although not a new concept, have gained popularity in contemporary research on children's play spaces. Loose materials have been associated with increased dramatic and constructive play (Maxwell, Mitchell, & Evans, 2008; Olsen & Smith, 2017), creative play

(Fjørtoft, 2001), opportunities for cooperative play, and extended duration of play due to greater affordances offered (Barbour, 1999).

Environments for Risky Play Promoting Physical Activity

In my research there appeared to be a positive, statistically significant correlation between risky play and levels of PA. This finding is congruent with existing research suggesting children's engagement with risky play may increase PA (Brussoni et al., 2015; Bundy et al. 2009; Tremblay et al., 2015). The relationship between risky play and PA is exemplified in a study inquiring into children's PA, where the following activities were found to be prominent forms of active play:

climbing up very steep hillsides and sliding down again, climbing up and jumping down from big rocks or small cliffs, climbing in trees, throwing javelins or cones, shooting with bows and arrows, rolling on the ground, balancing on stones, fallen trees, etc., and fencing with sticks. (Kaarby 2005, p. 124)

Similarly, Fjørtoft (2001) found children to be physically active during running and tumbling, climbing rocks, sliding down slopes, climbing trees, skiing, building huts and shelter, and playing with loose parts. In both Kaarby and Fjørtoft studies, play activities cited as encouraging PA, can be considered forms of risky play, and are activities that appear in my research findings (See Table 8 – Taxonomy of Environmental Features of Affordances for Risk Play).

Additionally, Brussoni et al., (2015) found that “risky play supportive environments [to] generally led to an increase in PA and decrease in acute sedentary behaviours” (p. 6445). There has been substantial research conducted on the ability for physical environments to promote children's PA, and some research directly links environments rich in affordances for risky play to increased PA (Ball, 2002; Brussoni et al., 2015; Bundy et al. 2009; Engelen et al., 2013;

Fjørtoft, 2000; Haywards et al., 1974; Tremblay et al., 2015). Congruent with my research findings, loose materials/parts have been cited as an environmental feature affording risky play and promoting PA. Engelen et al. (2013), conducted a study including environmental interventions, mainly the incorporation of loose parts (e.g., tires, milk crates) in conjunction with a 2 hour risk reframing seminar with parents and practitioners. Results from the study showed a statistically significant increase in PA levels of children after the 13 week interventions. Congruently, another study implemented loose parts, and saw a significant increase in PA counts per minute (Bundy et al., 2009), as well research aiming to increase children's PA found that "the overall availability of un-fixed equipment, is associated with higher levels of PA" (Ridger et al., 2012, p. 326). Similarly, research comparing children's PA across adventure playgrounds, traditional playgrounds, and contemporary playgrounds noted that children spent significantly more time physically active on the adventure playground (75 minutes, compared with 21 minutes and 32 minutes) (Haywards et al.,1974). The adventure playground was equipped with loose materials and non-traditional play structures typically associated with affordances for risky play (Haywards et al.,1974; Sandseter, 2009a).

Given the extensive research suggesting environments conducive to risky play may also increase PA, the taxonomy of environmental features developed through my research may be a useful tool for promoting PA in ECEC institutions. Likewise, my findings on loose materials affording ample risky play, is supported by existing research, and may be a cost-effective way to increase PA, as well as risky play. These research findings may be applicable to my current context, ECE in Canada and BC, as discourses on increasing children's PA is prominent in the ECE sector. Recent reforms include the Standard Director of Licensing - Standard of Practice for Active Play requires that children in ECE centers must get at least 60 minutes of outdoor active

play per day (ECEBC, 2016). Similarly, in 2017, the Canadian Society for Exercise Physiology (CSEP) launched the “world’s first evidence-based 24-Hour Movement Guidelines for the Early Years (ages 0-4 years)” (CSEP, 2017, para 1). The Canadian 24-hour Movement Guidelines for Early Years outlines requirements for children’s PA, sedentary behaviours and sleep, with the intent of increasing children’s movement over the entirety of the day. These guidelines were created as a response to children’s increasing sedentary lifestyles and corresponding health concerns in Canada (Tremblay et al., 2015; WHO, 2016).

Summary of Chapter

In this chapter, I have discussed my research findings in relation to existing literature and provided potential practical contributions of my study. I proposed that childhood assumptions and pedagogical practices have an interconnected and reciprocal relationship that may impact children’s affordances for risky play. I suggested that including loose materials may increase risky play and contribute to the development of risk-assessment skills through allowing for exploration adaption and of risk. I concluded with a discussion on the relationship between risky play, PA, and the possibility of environments affording risky play to combat health concerns related to childhood inactivity. In the following concluding chapter, I will discuss the impact of my research, suggestions for further research, and limitations of my study.

Chapter 6: Conclusions

In the preceding chapters I have introduced myself as a researcher, summarized existing literature on risky play in ECEC, and Gibson's (1979) theory of affordances, outlined my research design, presented research findings, and engaged in a discussion integrating my findings with relevant literature. In this concluding chapter I will propose practical implications of my research, discuss shifting perspectives on children's risk taking, suggestions for further research, and limitations of my study.

Practical Implications

Keeping in mind that my research was conducted in a Norwegian context, I would suggest that there may be potential practical implications for ECE in British Columbia (BC), Canada.

Considering the impact of pedagogy on risky play. Given my findings suggesting that pedagogical theoretical frameworks may impact childhood assumptions, and relating practices surrounding risky play, I suggest that practitioner curriculums consider including Hendry and Kloep's (2002) lifespan model of development and Gibsonian (1979) theories. Furthermore, I recommend inquiring into the impact on children's risky play and the underlying childhood assumptions associated with the current pedagogical theories and frameworks employed in ECE in BC.

Loose materials. My research findings suggest that the incorporation of loose materials such as wood planks, tires and plastic crates, may increase affordances for diverse and adaptable risky play, as well as being cost-effective. I recommend that ECE centers incorporate loose materials into their outdoor play spaces. Ideally, these loose materials are collected from

community industries and organizations, such as construction or recycling companies and include the materials listed above and any other free and recyclable materials that ECE institutions have access to.

Environments for risky play and PA. My research findings suggest that creating children's play spaces with the intent of increasing affordances for risky play may also promote PA. I recommend utilizing my taxonomy of environmental features of affordances for risky play (Table 7), to create environments rich in opportunities for risky play which may increase PA as well.

Changing the Conversation on Risky Play in ECE

Through the sharing of my research, I hope to contribute to the conversation that represents the potential positives of risk taking and creating a more balanced view of children's risky play. The need for this shift in conversation and perception of risk is due to the increasing risk-adverse society that Canadian children are growing up in rather than new found information that risk is important for children's development (Beck, 1992; Brussoni et al., 2015; Eager & Little, 2011; Harper, 2017; Wyver et al., 2012). Research on risky play is in response to an increasing surplus of safety regulations and attempts to eliminate all possible danger, that is changing the way children play compared to previous generations (Sandseter et al., 2017). Unfortunately, this restriction of risk may be having adverse effects on the development, and physical and mental health of children in the early years in BC (Brussoni et al., 2012; Sandseter, 2010; Sandseter & Kennair, 2011; Tremblay et al., 2015).

In April 2019 I presented my research to teachers and parents at a local school. Following the presentation, I received an email from a mother who had attended. She shared a story about her daughters' engagement with risk play. She said that after hearing my research on risky play,

she decided to allow her 6 year old daughter to try downhill skiing even though she felt extremely nervous about potential injuries. This mother said that she could not believe how her daughter's confidence skyrocketed the days following her experience with risk. These are the kind of stories, opportunities, and experiences I hope my research contributes to. Producing more research and collecting these narratives can start to change the perception of risk as solely negative to a balanced approach of injury management and promotion of developmental and health benefits associated with risky play.

Further Research

Below I list some of the areas for further research that I was unable to attend to through my thesis research.

Risky play for marginalized population. Current research on risky play is often void of contextual factors such as historical, sociocultural, political, and economic influences that may vary from child to child . The benefits and barriers are often generalized to all children. I recommend this gap be address through the inclusion of children's voices in further research, as well as inclusion of populations often not considered in the dominant discourse on outdoor risky play, such as Indigenous, lower-socioeconomic, and marginalized populations (Gerlach et al., 2019). Additionally, research inquiring into the intersection of access to land and the colonization of Turtle Island and other Indigenous territories worldwide needs to be addressed (Gerlach et al., 2019; Tuck & Yang, 2012).

Interventions based off my findings. In my research I have identified social factors and physical environmental features that may contribute to affordances for risk play. I recommend further research utilizing interventions, with pre and post measures, based off factors identified in my findings.

Loose materials and risky play. I suggest that further research be conducted on the potentiality of loose materials to promote cost-effective and diverse risky play in ECEC institutions. I am particularly interested in research pertaining to smaller, urban, outdoor play spaces and the intervention of loose materials.

Environments for risky play and PA. There is an abundance of research being conducted on increasing children's PA, and some directly concerning risky play. The magnitude and prevalence of sedentary lifestyles and related health issues warrants further research on to increasing children's PA in an affordable, accessible, and sustainable way.

Limitations

There were a few limitations to the interpretation and generalization of my research findings. First, my research included one ECEC institution, rendering it small in sample size, as well as lacking in diversity. Levanger is a small rural town with a more ethnically homogenous population than Norway in general (4.2% compared with 17.8%). Research findings may have differed had I conducted research in Oslo, an urban city, where immigrants make up 30.5% of the population (Statistisk sentralbyrå, 2019). Furthermore, I am presenting my research in Canada, adding another layer of context that needs to be considered when interpreting findings from my research. In order to minimize impacts of this limitation I have contextualized my research through demographic information of population studied, as well as situated myself as a researcher through my positionality statement (See Table 2 – 4 and Chapter 1). I will continue to explicitly contextualize my research in any further dissemination of my findings.

Another limitation is my lens as a Canadian and position as an outsider may impact my perception of meaningful observation and interpretation of data. Similarly, my collection and analysis of data may reflect my personal relationship and biases with risk. For this reason, I have

stated my personal relationship with risk in my positionality statement (See Chapter 1). Finally, I gave full disclosure of my research study to participants and this may have had influence on how they presented themselves to me as a researcher.

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<https://outsideplay.ca/>

<https://dmmh.no/en/research/projects/encompetence>

<https://dmmh.no/>

Appendix A - NSD Approval in Norwegian



Ellen Beate Hansen Sandseter
Thonning Owessensgt. 18
7044 TRONDHEIM

Vår dato: 21.08.2017

Vår ref: 54846 / 3 / AH

Deres dato:

Deres ref:

Tilbakemelding på melding om behandling av personopplysninger

Vi viser til melding om behandling av personopplysninger, mottatt 22.06.2017.

Meldingen gjelder prosjektet:

54846	<i>Kompetanse for utvikling av barnehagers inne- og utemiljøer</i>
<i>Behandlingsansvarlig</i>	<i>Dronning Mauds Minne Høgskole, ved institusjonens overste leder</i>
<i>Daglig ansvarlig</i>	<i>Ellen Beate Hansen Sandseter</i>

Personvernombudet har vurdert prosjektet og finner at behandlingen av personopplysninger er meldepliktig i henhold til personopplysningsloven § 31. Behandlingen tilfredsstiller kravene i personopplysningsloven.

Personvernombudets vurdering forutsetter at prosjektet gjennomføres i tråd med opplysningene gitt i melde skjemaet, korrespondanse med ombudet, ombudets kommentarer samt personopplysningsloven og helseregisterloven med forskrifter. Behandlingen av personopplysninger kan settes i gang.

Det gjøres oppmerksom på at det skal gis ny melding dersom behandlingen endres i forhold til de opplysninger som ligger til grunn for personvernombudets vurdering. Endringsmeldinger gis via et eget [skjema](#). Det skal også gis melding etter tre år dersom prosjektet fortsatt pågår. Meldinger skal skje skriftlig til ombudet

Personvernombudet har lagt ut opplysninger om prosjektet i en [offentlig database](#).

Personvernombudet vil ved prosjektets avslutning, 31.12.2020, rette en henvendelse angående status for behandlingen av personopplysninger.

Dersom noe er uklart ta gjerne kontakt over telefon.

Vennlig hilsen

Marianne Høgetveit Myhren

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

Appendix B - NSD Approval in English

Feedback on the processing of personal data

We refer to the notice of processing of personal information, received on 22.06.2017.
The lightning applies to the project:

54846 Treatment Officer Daily Responsible

Competence for the development of kindergartens in and outdoor environments Queen M audits M in H upper school, at the institution's senior leader Ellen Beate H ansen Sandseter

The privacy representative has assessed the project and finds that the processing of personal data is mandatory in accordance with section 31 of the Personal Data Act. The processing satisfies the requirements of the per sonoppls.

The Ombudsman's assessment assumes that the project is conducted in accordance with the information given in the message form, correspondence with the Ombud, the Ombud's comments, and the Personal Data Act and the Health Register Act with regulations. The processing of personal data can be processed.

It is advised that a new message be given if the treatment changes in relation to the information that is the basis for the assessment of the representative. Change messages are provided via a separate form. A notice shall also be given after three years if the project is still in progress. M readings must be made in writing to the representative

The Ombudsman has posted information about the project in a public database.

At the end of the project, on 31 December 2020, the Ombudsman will address a request regarding status for processing personal data.

If something is unclear please feel free to contact the phone.

Sincerely,

Marianne Høgetveit Myhren

Contact person: ÅsneHalskau tel: 55 58 21 88 / asne.halskau@nsd.no Attachment:
Project assessment

Appendix C - Email about NSD Ethics

Dear Liv and Patricia,

I am sending this e-mail to connect the two of you! Patricia was lucky to have her scholarship for Norway accepted, so now we can start planning her stay in Levanger and Trondheim.

Patricia will spend the first 1,5-2 months in Levanger at Gjemble barnehage, and then the next 1,5-2 months in Trondheim to continue her research under my supervision. She is planning to arrive in Norway around September 24th.

It is great if the two of you could establish contact and start planning for her stay at Gjemble. Please don't hesitate to contact me if you have any questions or need some help!

Best wishes,
Ellen

Dear Patricia and Liv,

I just talked with the research ethics people (NSD, personvernombudet), and your research tasks while you are in Norway falls under what we already have permission to do through our project. It is not necessary to apply once more for the research you will do. As long as you don't do video or audio recording and stick to anonymised field notes with no personal information about the ones you observe everything is OK. Coding and using statistics from our already collected data is also OK as long as you do the coding at my university without copying any of the videos.

For the observations that you will do throughout the daily life in Gjemble barnehage, it is important that the parents in the barnehage receive information about you and your role there. This should include information that you are both a preschool teacher and that you will also be there to do some research for your master.

Liv, if you could write a short letter to the parents about this I would appreciate a copy – just for the records :-)

Best wishes,
Ellen

Hello again both of you.

We are looking forward to see you Patricia. This is not what we are used to, but it is exciting to speak English daily. We will do our best to welcome you.

I will write a letter to the parents, and tell them what your job is. I send a copy to Ellen Beate.

I will also include Aud Sigrun, the leader for the class, who will be your nearest daily contact.

Ha en fin dag!



Liv Eriksen Skjerve, Styrer | T: +47 95781964

Espira Gjemble | Friggsv. 2 B, NO-7602 Levanger| T: +47 74083292

www.gjemble.espira.no

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Appendix D - Request for Modifications

/Human Research Ethics – Request for Modification of an Approved Protocol **The Request for Modification form is an institutional protocol based on the** [Tri-Council Policy Statement on the Ethical Conduct for Research Involving Humans](#)

Instructions:

1. Download this Request for Modification and complete it on your computer. Hand written applications will not be accepted.
2. **Submit two (2) copies of this completed application with all attachments - one (1) copy must have original signatures** - and send to: Human Research Ethics, Michael Williams Building (MWB), Room B202, University of Victoria, PO Box 1700 STN CSC, Victoria BC V8W 2Y2 Canada. The review period for Modifications is approximately two weeks.
3. If you need assistance, contact the Human Research Ethics Office at (250) 472-4545 or ethics@uvic.ca
4. Please note that applications are screened and will not be entered into the review system if incomplete (e.g., missing required attachments, signatures, documents). You will be notified in this case.
5. In cases where the nature and/or the extent of the proposed modifications are substantial such that the changes result in a study that deviates substantially from the originally approved study or previous modified study, the research ethics board reserves the right to require that a new application form be submitted.

A. Principal Investigator

If there is more than one Principal Investigator, provide their name(s) and contact information below in Section B, Other Investigator(s) & Research Team.

Last Name: Obee

First Name: Patricia

Department/Faculty: Child and Youth Care

UVic Email: obee@uvic.ca

Phone: +47 925 40 344

Primary Email: patriciasobee@gmail.com

Mailing Address (if different from Department/Faculty) including postal code:
 2190 Ridgedown Place, Saanichton, BC. V8M 2H7

Title/Position: (Must have a UVic appointment or be a registered UVic student)

Faculty

Undergraduate

Ph.D. Student

Staff

Master's Student

Post-Doctoral

Adjunct or Sessional Faculty (Appointment start and end dates): _____

Students: Provide your Supervisor's information:

Name: **Nevin Harper**

Email: njharper@uvic.ca

Department/Faculty: **Child and Youth Care**

Phone: +1 250 721 7211

Graduate Students: Provide your Graduate Secretary's email address: sdefinn@uvic.ca

All PIs: Provide any additional contacts for email correspondence:

Name:

Email:

Name:

Email:

B. Project Information

Original or most recent Protocol Number: 18-1015

Original Project Title: Outside Environments, Risky Play and Physical Activity in Early Childhood Education and Care (ECEC) Institutions

Project Title if modified: **Impacts of the Physical Environment on Affordance in Risky Play in Early Childhood Education and Care (ECEC) Institutions**

Date Recruitment or Data Collection began: Oct. 26/2018 Anticipated End Date of Data Collection: Feb. 20/2019

Is this project connected/associated/linked to one that has been recently submitted? Yes No

If yes, provide further information: I am continuing on the same project for my thesis but would like to add more qualitative data to the original project.

All Current Investigator(s) and Research Team:

(Include all current and new co-investigators, students, employees, volunteers, community organizations.)

	Role in Research Project	Institutional Affiliation	Email or Phone
Dr. Ellen Beate Hansen Sandseter	Supervisor in Norway	Queen Maud University College of Early Childhood Education	Ellen.B.Sandseter@dmmh.no

For Faculty Only: Any Graduate Student Research Assistants who will use the data to fulfill UVic thesis/ dissertation/ academic requirements: Include all current Graduate Student Research Assistants Research Student of Assistants

Email or Phone

C. [Agreement and Signatures](#)

Principal Investigator and Student Supervisor affirm that:

- *I have read this modification and it is complete and accurate.*
- *The research will be conducted in accordance with the University of Victoria regulations, policies and procedures governing the ethical conduct of research involving human participants and all relevant sections of the TCPS 2.*
- *The conduct of the modified protocol will not commence until ethics approval has been granted.*
- *The researcher(s) will seek further HREB review if the research protocol is further modified.*
- *Adequate supervision will be provided for students and/or staff.*

Principal Investigator Student's Supervisor

Patricia Obee
Signature

Signature

Patricia Obee
Print Name

Nevin Harper
Print Name

Nov. 5, 2018
Date

Date

Departmental Chair, Director or Dean

I affirm that adequate research infrastructure is available for the conduct and completion of this research.

Signature

Print Name

Date

D. [Project Funding](#)

Have there been any changes to the funding of this project since the previous ethics approval (annual renewal or modification)? No Yes

If yes, please complete the following:

Source of Project Funding	Year Applied	Status	Project Title Used in Funding Application (or additional information)
		<input type="checkbox"/> New - Pending <input type="checkbox"/> New - Approved <input type="checkbox"/> Completed	
		<input type="checkbox"/> New - Pending <input type="checkbox"/> New - Approved <input type="checkbox"/> Completed	
		<input type="checkbox"/> New - Pending <input type="checkbox"/> New - Approved <input type="checkbox"/> Completed	
		<input type="checkbox"/> New - Pending <input type="checkbox"/> New - Approved <input type="checkbox"/> Completed	

If you have applied for new funding since the previous ethics approval (annual renewal or modification), have you submitted a funding application or contract notification to the UVic Office of Research Services?

Yes No

Will this project receive funding from US Funders (e.g. NIH)? Yes No

If yes, provide further information:

E. Synopsis of Study Progress

1. Progress

Please provide a brief description of the progress to date:

Patricia has been at the site of study, an ECEC institution in Levanger, Norway, for 2 weeks now. Some field notes and observations have been collected and positive relationships have been developed between researcher (Patricia), staff, and children.

2. Unanticipated Events

An Unanticipated Event includes any incidents, experiences, or outcomes that have not been previously accounted for in the approved protocol and which place participants, or others, at a greater risk (i.e., physical, psychological, economic, etc.) than was previously anticipated. An Unanticipated Event may have implications for the conduct of the study or the integrity of the research data.

a. Have there been any unanticipated events experienced with this research that have not been previously reported to HREB?

Yes Possibly No

b. If 'Yes' or 'Possibly' is this modification being submitted with an Unanticipated Event Report?

Yes No, please explain:

F. Modifications

In cases where the nature and/or the extent of the proposed modifications are substantial such that the changes result in a study that deviates substantially from the originally approved study or previous modified study, the research ethics board reserves the right to require that a new application form be submitted.

1. Reason for proposed modification(s)

Briefly describe the reason(s) for the proposed modification(s).

After spending two weeks in Norway, it has become evident that Patricia's research needs to be further contextualized in the culture in which it is situated. Children's play and the way that they utilize their physical environment may be dependent on the greater culture. Staff mentalities in regards to risk taking has been noted in literature as an important factor in affordances in risky play. Similarly, parental approaches to risk taking and parent-practitioner relationships have been associated with children's opportunity for engagement in risky play. Norway has been denoted in literature to be a less-risk-adverse culture with an affinity for the outdoors, which may influence children's opportunity for risky play, and therefore needs to be considered in Patricia's research.

2. Proposed modification(s) to study

Please outline the details and rationale for the changes along with a brief synopsis of the progress to date. Attach copies of any modified and/or new appendices including recruitment materials, advertisements, consent forms, questionnaires, surveys, etc. ensuring that the changes are marked.

Please don't include and don't modify the original approved application form. We have the original approved application on file. Should we require additional documents we will let you know in a timely manner..

All the modified appendices that you are submitting must be **underlined**.

<p>a. Modification to Recruitment</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Rationale: Attach copies of revised recruitment scripts, letters, advertisements, invitations etc.</p>
<p>b. Modification to Participants (e.g. pool, group, numbers of, vulnerability, etc.) <i>If there is a change in the level of vulnerability of the participant group(s) include any modifications to the risks and/or protocol to address this change</i></p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Rationale: Inclusion of teachers and parent semi-structured interviews to add greater context to the quantitative data (coded videos) and qualitative data (field notes and observations of children's play at the ECEC institution). Literature denotes that practitioners and parent mentalities about risk taking impacts children's affordances and actualization of risky play. Attach copies of recruitment tools, consent forms, advertisements etc.</p>
<p>c. Modification to Data Collection Method</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Rationale: Inclusion of semi-structured interviews with staff and parents as a data collection method to gain information about the greater context and culture that all other data (field notes, observations, videos) are situated in. Semi-structured interviews would be centered around approaches to risk taking, play, outdoors, and childhood assumptions. Attach copies of revised instruments, surveys, interview or focus group questions</p>
<p>d. Modification to Consent</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Rationale: Will need to obtain consent from teachers and parents to use semi-structured interviews as part of study. Attach copies of the revised consent forms, scripts, or letter of information for implied consent.</p>

e. Modification to Risk	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
f. Other Modification(s)	Specify changes with rationale: Will use measures of well-being, involvement, social context (group composition, initiator of activity, gender), as well as the codes in my original ethics approval of physical activity, risky play and environment. The previously collected videos have already been coded and approved by Norwegian board of ethics (which I have been added to). Attach all applicable details.

G. Level of Risk

1. Estimate of Risks

Consider any additional inherent risks associated with the modification to your research protocol and complete the table below by putting an **X** in the appropriate boxes. Be sure to take into account the vulnerability of your target population(s) if applicable:

Foreseeable Real or Potential Risks of Harm	No change	Increased Risk	Less risk
a. Feel demeaned or embarrassed due to the research	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Fatigue or stress	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Other emotional or psychological discomfort	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Social risks, such as stigmatization, loss of status, privacy and/or reputation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Physical risks such as falls	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Economic risk (<i>e.g. job security, job loss</i>)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Other risks: (<i>community reputation, workplace morale, family, other third parties</i>)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Possible Risks

If you indicated (a) to (g) above that any risks are *increased or less*, please explain below:

a. How have the risks changed?

No change.

b. What changes to the protocol have been made to mitigate or prevent the risks?

No change.

c. If the risks have increased, how have the risks, and the ways that you will mitigate them, been conveyed to the participants?

No change.

3. Other Information

Please provide any other pertinent information here, or attach the details to this form:

Appendix E – Consent Forms

*Participant Consent Form*

Outside Environments, Risky Play and Physical Activity Impacts of Physical Environment on Affordances in Risky Play in Early Childhood Educations and Care (ECEC) Institutions

- If necessary for informed consent this form can be translated into Norwegian. There will be the option for this form to be provided in English and Norwegian.
- This form will be provided by the ECEC institution where I will be conducting my research, Gjemble Barnehage, Levanger.

You are invited to participate in a study entitled Outside Environments, Risky Play and Physical Activity in Early Childhood Educations and Care (ECEC) Institutions that is being conducted by Patricia Obee.

Patricia Obee is a graduate student in the department of Child and Youth Care at the University of Victoria in Canada and you may contact her if you have further questions by email at patriciasobee@gmail.com or by phone at +1 250 818 5506.

As a graduate student, I am required to conduct research as part of the requirements for a masters in Child and Youth Care. It is being conducted under the supervision of Dr. Nevin Harper. You may contact my supervisor by email at njharper@uvic.ca or phone at +1 250 589 5500.

Purpose and Objectives

The purpose of this research project is to develop a greater understanding of the environmental factors that intersect with risky play and how children's engagement in risky play impacts physical activity and well-being. I am interested in the relationship between outdoor physical environments, risky play and physical activity and well-being. I will be analyzing video, including your child, from 8 different ECEC institutions in Norway and collecting field notes and observations from Gjemble Barnehage. The videos were previously collected by my Norwegian supervisor and researcher, Ellen Sandseter for use in her project EnCompetence.

Alongside collecting field notes and observations and analyzing videos, I will include interviews from teachers at Gjemble Barnehage and parents regarding risky play, physical environments, physical activity, well-being and Norwegian culture. The intent of these interviews is to give a greater context to the children's play by including caregivers and teachers input.

Risky play is defined as thrilling forms of play, providing a degree of challenge and with a risk of physical injury and is often takes place in outdoor settings. It has been linked numerous positive developmental outcomes such as quality risk-assessment skills, self-regulation and improved physical health and well-being.

My research questions is: How do outside physical environments afford risky play and how does children's engagement in risky play effect physical activity and well-being?

Importance of this Research

Research of this type is important because risky play and the potential developmental benefits is becoming compromised by today's litigious and risk-averse societal trends. Given the current prevalence of sedentary lifestyles and obesity-related childhood illnesses, as well as the increasing pervasiveness of adolescent mental health issues (global epidemiological data at around 20% of population), research on risky play can provide important information on how to address these current societal concerns. Through creating greater understanding of how physical environments affords risky play and how that intersects with physical activity and well-being, I aim to provide new knowledges on how to promote risky play, physical activity and well-being in ECEC settings.

Participants Selection

Your consent is being asked for in this study because my research is specifically concerned with ages 2 to 5 years old, therefore I intend to collect caregivers consent as well as verbal consent from the children. Children ages 2 to 5 are undergoing important developmental process that engagement with risky play can influence.

I am also requesting your consent to being interviewed for my study, as you are either a teacher or parent of a child included in my research. Your interview transcript would be analyzed and used to provide greater depth and context to my research. Your name will be kept confidential and anonymous.

What is involved

If you consent to voluntarily participate in this research, I will be observing and documenting your child's interactions with the outdoor physical environment, other children, and staff in regard to risky play and physical activity and well-being. I will not be using names or any identifying descriptors in my research. I will simply be observing and recording what I see without interference to the children's daily activities during their time at the Gjemble Barnehave. As well as conducting my research while I am at Gjemble Barnehave, I will be interning as an educational assistant from October, 29, 2018 to December, 31, 2018

The field notes and observations I take will be used to provide a qualitative component and context to the quantitative portion of my research. The quantitative research will involve the coding of videos of children at Gjemble Barnehave and 7 other ECEC institutions. The videos were collected through another project that my Norwegian supervisor, Ellen Sandseter is conducting. Consent has already been given for the videos through previous project.

If you consent to voluntarily participate I this research for the interview portion, I will conduct a 20-30 minutes interview with you. Questions that will be asked will surround risky play, physical environments, physical activity, well-being and Norwegian culture. The intent of these interviews is to give a greater context to the children's play by including caregivers and teachers input. Your name will be kept confidential and anonymous.

Inconvenience

Given that this study takes place during the regular hours of operation at Gjemble Barnehage, there are no known inconveniences.

Risks

There are no known or anticipated risks to you by participating in this research. Given that this study takes place during the regular hours of operation at Gjemble Barnehage and children are not asked to engage in anything outside of their regular activities, there is no added risk through this research.

Benefits

The potential benefits of your participation in this research include the production of new knowledges about how the physical environment, risky play, and physical activity and well-being interact and may provide useful information for the development, health, and well-being of children in ECEC institutions.

Voluntary Participation

Your participation in this research must be completely voluntary. If you do decide to participate, you may withdraw at any time without any consequences or any explanation. If you do withdraw from the study your data will not be used. Since I will be analyzing videos of your child that have been previously collected by my supervisor, Ellen Sandseter, you can also withdraw permission to use videos of your child at any time. Any data of your child will not be used if you chose to withdraw, field notes, observations and videos and interview transcripts.

Researcher's Relationship with Participants

Since I am acting as an educational assistant and researcher I may have a relationship to potential participant. Coercion will be prevented by nature of the study since I am not asking participants to adjust their daily activities.

Anonymity

In terms of protecting your anonymity I will not include identifying descriptions in in my original field notes or names in my interview transcripts.

Confidentiality

Your confidentiality and the confidentiality of the data will be protected by there being no identifying descriptions in original notes and interview transcripts, as well as notes will be stored in a password protected computer owned by Patricia Obee (me).

The data collected will be shared with my Norwegian supervisor, Ellen Sandseter for assistance and support on my own thesis research, but not for her personal use in her own projects/research.

Dissemination of Results

It is anticipated that the results of this study will be shared with others in the following ways: thesis, thesis defense and shared on the University of Victoria's library website "UVicSpace". There is potential for publications in academic journals and presentation at conferences with the results of this study.

Disposal of Data

Data from this study will be disposed of by the electronic data being erased and original field notes shredded upon completion of thesis defense.

Contacts

Individuals that may be contacted regarding this study include Patricia Obee and Dr. Nevin Harper, as well as Norwegian supervisor, Ellen Sandseter by email at Ellen.B.Sandseter@dmmh.no and by phone at +47 738 052 00.

In addition, you may verify the ethical approval of this study, or raise any concerns you might have, by contacting the Human Research Ethics Office at the University of Victoria (250-472-4545 or ethics@uvic.ca).

Your signature below indicates that you understand the above conditions of participation in this study, that you have had the opportunity to have your questions answered by the researchers, and that you consent to participate in this research project.

Name of Participant *Signature* *Date*

A copy of this consent will be left with you, and a copy will be taken by the researcher.

Appendix F - Verbal Consent

Verbal Assent from Children Script/Form

The following script will be read to children and children will be asked for verbal consent and/or if capable signing the following form. A Norwegian interpreter will be used in order to ensure informed consent from children.

Project Title: Outside Environments, Risky Play and Physical Activity in Early Childhood Education and Care (ECEC) Institutions
Investigator: Patricia Obee

I am doing a research study about outdoor play and physical activity. A research study is a way to learn more about people and environments. If you decide that you want to be part of this study, you will continue to play as you normally do outside, and I will be taking some notes of what I see you doing. This will happen during outside play time from now until Christmas time.

There are no more risks or dangers involved with being in this study than during normal outside play. There could be some benefits that comes out of you participating in this research such as different play structures and changes to the outdoor environment that could enhance your outside play.

If you do not want to be in this research study, that is okay.

When I am finished with this study I will write a report about what I learned. This report will not include your name or anything that would identify who you are.

You do not have to be in this study if you do not want to be. If you decide to stop after we begin, that's okay too. Your parents know about the study too.

If you decide you want to be in this study, please give verbal consent and/or please sign your name.

I, _____, want to be in this research study.

(Sign your name here)

(Date)

Appendix G - Certification of Approval HREB



Office of Research Services | Human Research Ethics Board
 Michael Williams Building Rm B202 PO Box 1700 STN CSC Victoria BC V8W 2Y2 Canada
 T 250-472-4545 | F 250-721-8960 | uvic.ca/research | ethics@uvic.ca

Certificate of Approval

PRINCIPAL INVESTIGATOR	Nevin Harper (Supervisor)	ETHICS PROTOCOL NUMBER	18-1015
		Expedited review - delegated	
PRINCIPAL APPLICANT	Patricia Obee Master's student	ORIGINAL APPROVAL DATE	2018 Oct 4
UVIC DEPARTMENT	Child & Youth Care	APPROVED ON	2018 Oct 4
		APPROVAL EXPIRY DATE	2019 Oct 3

PROJECT TITLE Outside Environments, Risky Play and Physical Activity in Early Childhood Education and Care (ECEC) Institutions

RESEARCH TEAM MEMBERS None

DECLARED PROJECT FUNDING
Mfac Accelerate International, University of Victoria

DOCUMENTS INCLUDED IN THIS APPROVAL
 Parental Consent Form P_Obee.doc - November 16, 2018
 Request for modification.doc - November 16, 2018
 Interviews.docx - November 16, 2018
 Modification approval certificate.pdf - November 16, 2018
 Verbal Consent.docx - September 27, 2018
 Consent Form P_Obee.doc - September 27, 2018
 Verbal Consent.docx - September 04, 2018
 Appendix F - Project description.pdf - August 02, 2018
 Appendix E - Emails about Ethics.docx - August 02, 2018
 Appendix D - approved NOR -> ENG.docx - August 02, 2018
 Appendix C - kvittering - NSD Approval.pdf - August 02, 2018
 Appendix B - meldeeskjema - NSD Application.pdf - August 02, 2018
 Appendix A - NSD application NOR -> ENG.docx - August 02, 2018

CONDITIONS OF APPROVAL

This Certificate of Approval is valid for the above term provided there is no change in the protocol.

Modifications
To make any changes to the approved research procedures in your study, please submit a "Request for Modification" form. You must receive ethics approval before proceeding with your modified protocol.

Renewals
Your ethics approval must be current for the period during which you are recruiting participants or collecting data. To renew your protocol, please submit a "Request for Renewal" form before the expiry date on your certificate. You will be sent an emailed reminder prompting you to renew your protocol about six weeks before your expiry date.

Project Closures
When you have completed all data collection activities and will have no further contact with participants, please notify the Human Research Ethics Board by submitting a "Notice of Project Completion" form.

Certification

This certifies that the UVic Human Research Ethics Board has examined this research protocol and concluded that, in all respects, the proposed research meets the appropriate standards of ethics as outlined by the University of Victoria Research Regulations Involving Human Participants.

Appendix H - Interview Questions

Interviews Questions

Impacts of Physical Environment on Affordances in Risky Play in ECEC Institutions

Patricia Obee

Teachers:

1. How would you describe your role as a kindergarten teacher?
2. What pedagogical practice and theory do you follow/align with? How do children learn? What are important factors to have in the environment? In the daily routine?
3. How would you describe your attitude towards risk taking in your own life?
4. How would you describe your attitude towards risk taking in children's play at the kindergarten?
5. How would you describe the general attitude towards risk and challenge in Norway?
6. How would you describe your relationship towards the outdoors in your own life? How do you utilize the outdoors/or do you?
7. How would you describe your attitude towards outdoors at kindergarten? What is the role of outdoor environment in kindergarten?
8. How would you describe your attitude towards injuries that may occur through children's play? How about parent's responses to injuries?
9. How do the regulatory bodies in Norway influence your pedagogical practice in regard to children's play, and specifically risk taking in play?
10. How have the environmental interventions changed the children play? Your engagement as a teacher?

Parents:

1. How would you describe the role of kindergarten in your child's life?
2. What are some important factors in the environment and in your daily routine for you child's well-being and development?
3. How would you describe your attitude towards risk taking in your own life?
4. How would you describe your attitude towards risk taking in children's play at the kindergarten?
5. How would you describe the general attitude towards risk and challenge in Norway?
6. How would you describe your relationship towards the outdoors in your own life? How do you utilize the outdoors/or do you?
7. How would you describe your attitude towards outdoor time at kindergarten? What is the role of outdoor environment at kindergarten?
8. How would you describe your attitude towards injuries that may occur through children's play? How about the kindergartens role in injury prevention?
9. How does your child spend their time away from the kindergarten? After kindergarten? Weekends? Typical weekend activity.

Appendix I - OSRAC Manual for Physical Activity and Social Context

OSRAC-P TRAINING MANUAL 9
11:40 AM 7/2/12 (revised)

III. CODE DEFINITIONS

NOTE TO OBSERVERS: After recording the highest level of physical activity within a five-second observational interval, all subsequent codes for the other seven categories in that interval are coded based on the highest level of physical activity level observed and recorded (i.e., any code selected should correspond to the focal child's highest physical activity level for the observational interval). For example, if you see a child run, walk, and sit during a five-second observational interval, then the activity type (e.g., run, walk, sit) should be coded based on the highest level of physical activity level observed. In this example, run should be coded for Physical Activity Type.

A. PHYSICAL ACTIVITY LEVEL CATEGORY AND CODES

The Physical Activity Level Codes represent five different levels of the intensity for the focal child's physical activity. The intensity level of physical activity is based on several considerations. Intensity may depend on (a) the speed or vigorousness of child movement ranging from slow easy to moderate to fast movements, (b) whether the movement is assisted by others, (c) whether the child movement is repeated within the observational interval, and (d) if there is any weight being moved, held, or translocated. If there are multiple body parts involved in the movement, the intensity is usually higher. Stationary activities represent a resting state or involve extremely limited or confined movement. Limb physical activity involves non-vigorous arm, leg, and trunk movements but no actual translocation from one place to another (i.e., remember "two-step rule" where both feet have to move to another spot for walking to be coded). Any activity normally classified as limbs, slow easy, or moderate can be "upgraded" to the next intensity code, if it is performed more vigorously or if the activity requires more effort (carrying a heavy object, pushing a swing). Can't tell is coded *only* if you cannot see the focal child or you really cannot determine a particular code within a category. Remember, the physical activity level is defined by what the focal child is doing during the five-second-observation interval.

Code	Code Names	Definition
1-Stationary	Stationary/motionless (Level 1)	<p><i>Stationary/motionless (resting state/motionless with head, finger, hand, or foot, or writing and drawing movement only and no major limb movement or two major joint movements)</i></p> <ul style="list-style-type: none"> • Sleeping, lying, standing, sitting, squatting, or kneeling • Riding passively in a wagon

OSRAC-P TRAINING MANUAL 10
11:40 AM 7/2/12 (revised)

Code	Code Names	Definition
2-Limbs	Stationary with movement of limbs or trunk (Levl 2)	<p><i>Stationary with easy movement of limb(s) or trunk (arm, trunk, or leg movements without moving the entire body from one place to another)</i></p> <ul style="list-style-type: none"> • Standing up, sitting down, bending and squatting, or kneeling down with limb or trunk movement • Holding an moderately heavy object while unsupported • Hanging or partially hanging off of something, leaning on a pole, fence, or wall (includes a partial climb - one leg up and arms holding on) • Swinging passively (being pushed by another), bending, digging in the sand, twisting • Throwing ball or object without translocating • Leaning back on arms while sitting down • Resting head on arms on a tabletop • Sliding down a slide (without pushing self) <p><i>Add-on rule example: Standing motionless while holding object (1) + moderately heavy object (1) = 2</i></p>
3-Slow-Easy	Slow/easy movement (Levl 3)	<p><i>Translocation (moving body from one location to another at a slow and easy pace)</i></p> <ul style="list-style-type: none"> • Walking <ul style="list-style-type: none"> • Walking at a slow or easy pace and focal child MUST translocate with BOTH feet (3 continuous steps) • Slow and easy marching (in place or translocating), crawling, skipping, hopping, jumping, rolling • Riding <ul style="list-style-type: none"> • Slow and easy cycling, skateboarding, roller skating, scooter • Slow and easy crawling on a flat surface • Swinging without assistance from others or leg kicks • Slow and easy tumbling/wrestling <p><i>Add-on rule example: Going down a slide (2) + pushing self (1) = 3 Throwing a ball (2) + heavy ball (1) = 3</i></p>

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Code	Code Names	Definition
4-Moderate	Moderate movement (Level 4)	<p><i>Translocation (moving body from one location to another at a moderate pace)</i></p> <ul style="list-style-type: none"> • Walking <ul style="list-style-type: none"> • Walking at a brisk or rapid pace • Walking up at least 2 stairs or a hill • Two repetitions of skipping, hopping, jumping, leaping, kicking, or galloping • Riding <ul style="list-style-type: none"> • Two repetitions of cycling at a moderate pace • Climbing <ul style="list-style-type: none"> • Climbing on monkey bars, jungle gym, fence • Climbing backwards up a slide or an incline (or stairs) with arm usage • Hanging from bar with legs swinging • Tumbling <ul style="list-style-type: none"> • Two repetitions of a forward or backward roll • Fighting or wrestling at a moderate pace • Swinging with legs kicking
5-Fast	Fast movement (Level 5)	<p><i>Translocation (moving body from one location to another at a fast or very fast pace)</i></p> <ul style="list-style-type: none"> • Running • Walking up 3 or more stairs or an incline fast or with vigorous arm movement • Three repetitions or more of skipping, hopping, jumping, leaping, kicking, or galloping • Riding <ul style="list-style-type: none"> • Three repetitions or more of fast cycling, skateboarding, roller skating, scooter • Three repetitions or more jumping jacks or jumping rope • Three repetitions or more of tumbling • Vigorous fighting or wrestling • Climbing <ul style="list-style-type: none"> • Translocating across bars with hands while hanging <p><i>Add-on rule: Walking (3) + carrying very heavy object like another person (2) = 5</i></p>
Can't Tell	Cannot Tell	<ul style="list-style-type: none"> • Cannot Tell

Code	Code Names	Definition
Solitary	Solitary/alone	<ul style="list-style-type: none"> Engaging in an activity alone and not in proximity to children or adults Being in an activity area alone, clearly without peers or adults
1-1 Adult	One-to-one with adult	<ul style="list-style-type: none"> Engaging in an activity with or in proximity to only an adult Being in an activity area with only an adult
1-1 Peer	One-to-one with peer	<ul style="list-style-type: none"> Engaging in an activity with or in proximity to only a single peer Being in an activity area with only a single peer
Group Adult	Group with adult	<ul style="list-style-type: none"> Engaging in an activity with or in proximity to one or more peers and an adult Being in an activity area with one or more peers and an adult
Group Child	Group without adult	<ul style="list-style-type: none"> Engaging in an activity with or in proximity to two or more peers, without an adult in the group Being in an activity area with two or more peers, without an adult in the group
Can't Tell	Cannot tell	<ul style="list-style-type: none"> Cannot tell

- Group composition should be coded first by interaction, then by proximity.*** "Looking" by either the focal child or by someone towards the focal child does not constitute interaction. When inside, proximity is based on defined areas when applicable. For example, if the focal child is alone in the large block area, and other children/adults are in the sociodramatic area, code = solitary if there is not interaction with the focal child. In non-clearly defined areas inside or when outside, proximity is based on a 5-foot parameter measure. Anyone outside of 5 feet of the focal child should not be considered in group composition. Proximity can also be determined by parallel play (someone slightly outside of the 5-foot parameter, but engaged in activities matching that of the focal child).
- Remember that group composition is based upon the focal child's interaction/proximity to other children or to 1 adult.*** If the focal child is interacting or in proximity to no other children, but to multiple adults, code = 1-1 adult. Also note that while teacher and parents

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contribute towards group composition, observers do not unless they are specifically interacting with a child for a necessary non-routine, non-observational purpose.

- ***"Passing through" a group or by another adult or child is considered being part of that group if it occurs during the 5-second observation window.*** If the focal child is interacting with another child(ren) or adult(s) or in proximity to others at all during the observation period, group should be coded as the appropriate option other than solitary. This includes a walk-by during nap (code = 1-1 adult), running by another child while outside (code = 1-1 peer).
- **Solitary** should be coded when the focal child is alone for the full 5 seconds and does not interact with, or come in proximity of another child, group of children or an adult.
- **Group adult** should be coded when the focal child is engaged with an adult who is part of a group of children, i.e. the focal child asks the teacher a question while playing in the sociodramatic area and the teacher is reading a story to a group of 3 children in the book area, code = group adult.
- **1-1 adult** should be coded when the focal child is engaged with an adult who is in proximity to, but not interacting with a group of children, i.e. the focal child is talking to a teacher who is cleaning the table and is in proximity to children playing in the large block area, code = 1-1 adult.