Nature, Capabilities, and Student Well-Being:

An Evaluation of an Outdoor Education Approach

by

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ABSTRACT

An increasing number of children today are disconnected from nature. It has been argued that a disconnection from nature diminishes human well-being and impairs the capacity to live as fully human. The purpose of this research is to consider what impact outdoor learning may have on child well-being. The central question of my research is: *How does a particular approach to outdoor learning impact student well-being?* While the benefits of nature-contact towards well-being have been well-documented, there is a need for research documenting the impact of nature-benefit on well-being in a school setting. This study applies a qualitative case study within an appreciative utilization-focused evaluation to explore the quality of the impact of outdoor learning on student well-being. Through the lens of a capabilities approach, the study highlights an outdoor learning practice that provides opportunities for students to develop capabilities necessary for well-being. These stakeholder-identified capabilities include (a) to make choices about what to create; (b) to appreciate and care for nature; (c) to experience a connection to nature; (d) to ask questions we have about the natural world; (e) to explore student-generated questions and ideas about nature; (f) to voice questions and ideas, and listen to others' questions and ideas. The findings suggest that how the evaluated outdoor education approach provides opportunities for students to develop and enact the identified capabilities. My interpretation of the findings suggests that this capabilities approach to outdoor learning may provide a loose framework, in other contexts, for teachers concerned with the well-being of their students to consider. The study concludes with specific recommendations for a teaching practice that values child well-being.

Dedication

I dedicate this dissertation to my parents, Ed and Ruth, who gave me a childhood filled with love, immersed in nature. I also dedicate this dissertation to my wife, Teresa, who made many sacrifices on this journey. And finally to my three wonderful children, Erin, Dylan, and Justin – their excitement and wonder at the beauty and mysteries of nature has always been an inspiration.

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I would like to thank the entire staff of my field school for welcoming into their school community. In particular, I would very much like to thank members of the stakeholder group, including parents, the principal, and teachers, for their passion and involvement in shaping this study. I would also like to extend a special thanks to the three wonderful teachers and their delightful students who so generously allowed me to experience a truly innovative approach to education for well-being.

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CHAPTER ONE

Introduction

I grew up on a forested acreage on the outskirts of Thunder Bay. Our home was on the end of a gravel road that extended onto a path leading up to the top of a very old mountain. Growing up, we would sometimes hike that path to reach the mountain or more often take a shorter trail that illicitly cut through a nearby country golf course. We lived on five acres of aspen forest with a few spruce and birch trees in the mix. As children, we made paths through the forest and built forts out of deadfall. Looking back on those times, I recognize my childhood was ideal in many ways, but not because there weren't struggles. What made it ideal was the fact that it was a childhood raised in nature. I could step out my backdoor and spend the morning trying to catch toads or grasshoppers. I could sit and listen to the sounds of the aspen leaves in the wind. I could wander into our little forest, hear the crunch of dead branches under my feet or feel the tall grass brush up against the palms of my hands. I could hike up our mountain and experience complete and perfect solitude. Or I could simply just sit on the grass and stare. These were not places or experiences that I went to when I needed a break from the stresses of childhood – these were places I *lived*. It felt good to be in these places. These places and experiences fulfilled a need – a need to experience a connection to the natural world.

A number of years ago I read a book entitled, *The Last Child in the Woods* by the renowned Richard Louv. I was a teacher at the time, working at an inner city school in Surrey, British Columbia. Many of the children that I had taught, despite living quite close to a number of large urban parks and forests, spent very little time in nature. For

many students, much of their home life was confined to the indoors. This was a neighbourhood that experienced a relatively high incidence of violence and theft. Parents were understandably concerned for their children's safety. Recognizing this situation, a group of teachers at the school began taking the children on nature-orientated fields trips – many of them walking field trips to nearby parks. Some of those trips involved a tree and shrub-planting component as part of a program called, "Releaf" through the municipal Parks and Recreation department. During those field trips, I observed in the children a joy and wonder that I had not witnessed inside the classroom. The field trips certainly fulfilled a social need – the children chatted happily with one another on each of our journeys. However, I also witnessed in the children's interactions in nature, a persistent curiosity, a sense of awe, and at times, genuine excitement. Witnessing the children experience such feelings reminded me of my own early formative experiences in nature. Providing such experiences and opportunities for children fulfills an innate need to feel connected to nature. I strongly believe that people need nature in order to live well – but children particularly, as they grow and develop, need opportunities and experiences in nature in order to live well and to be fully human.

In recent years there has been growing interest in exploring what it means to live well, or to experience a sense of well-being. A number of influential organizations at the international, national, and regional levels have signaled the importance of human well-being through their initiatives. For example, the OECD's Programme for International Student Assessment (PISA) (an international survey evaluating education systems worldwide by testing 15-year-old students) included the assessment of student well-being in their latest survey (OECD, 2017a, 2017b). UNICEF releases an annual report card

presenting national rankings of well-being measures. The latest report ranks Canada 37th out of 41 rich countries in two domains, pointing to a lack of access to nutritious food for children and above-average rates of child homicide and teen suicide (UNICEF, 2017).

In 2010, the UK government launched a national well-being program to "start measuring our progress as a country, not just by how our economy is growing, but by how our lives are improving; not just by our standard of living, but by our quality of life" Since then, the government has collected statistics measuring well-being in order to inform national policy and decision-making (OFN, 2012). Here in Canada, the Canadian Index of Wellbeing (CIW) reports on the measures of eight interconnected domains that assesses the well-being of Canadians. According to the CIW, the purpose of the index is to provide, alongside GDP indicators, "the evidence needed to help Canadians make decisions that will build a society that responds to the call for greater fairness" (CIW, 2016).

At the regional level, the Ontario Ministry of Education recently adopted a well-being strategy with corresponding investments into resources towards implementation. According to the Ministry, the purpose of this initiative is to help students, "build the knowledge and skills associated with positive well-being so that they can become healthy, active and engaged citizens" (Ontario Ministry of Education, 2016). In 2009, the Alberta Ministry of Education proposed a K-12 Wellness Education framework. The goal of the framework is to describe the "fundamental concepts and inherent values of K–12 wellness education and to provide guidance for the future development and implementation of K–12 education wellness programs of study in Alberta" (Government of Alberta Education, 2009). It should be noted here that wellness and well-being appear

to be synonymous terms in their holistic outlook (a definition of well-being is provided below). Within Alberta's framework document, wellness is described as:

> …a balanced state of emotional, intellectual, physical, social, and spiritual well-being that enables students to reach their full potential in the school community. Personal wellness occurs with commitment to lifestyle choices based on healthy attitudes and action" (p. 3).

In British Columbia, the provincial health officer recently conducted a comprehensive analysis of the health and well-being of nearly one million children and youth in the province, focusing on a broad range of issues including economic, physical, mental, and emotional well-being. The report forms a baseline to measure change over time in order to inform initiatives in support of youth and child well-being (British Columbia Office of the Provincial Health Officer, n.d.).

While efforts such as the UK government's national well-being program and the reporting of the Canadian Index of Well-Being seek to benefit the general population, much of the emphasis has been focused on efforts to support the well-being of children and youth. This emphasis is no doubt in response to the growing increases in depression and anxiety reported among children and youth. According to Statistics Canada, in the year 2012, 11% of Canadians aged 15 to 24 met the criteria for depression. Among this age group, suicide is the second leading cause of death, representing nearly one quarter of all deaths (Findlay, 2017). Drawing from research from 1990-2007, similar findings indicate that one in five children and youth will experience depression by the time they turn 18, with between four and eight out of every 100 children and youth experiencing a major depression at any given time (AACAP, 2007). A recent survey commissioned by Children's Mental Health Ontario (CMHO) found of the 18- to 34-year-olds surveyed

across the province, 46 per cent had missed school due to issues related to anxiety (Ipsos Public Affairs, 2017). Other disturbing statistics cited by CMHO include:

- As many as 1 in 5 children and youth in Ontario will experience some form of mental health problem during their childhood and youth (MHASEF Research Team, 2015);
- 70% of mental health problems have their onset during childhood or adolescence (Government of Canada, 2006);
- 17% of children ages 2-5 years meet diagnostic criteria for mental health problems (Clinton, et al., 2014);
- Canada's youth suicide rate is the third highest in the industrialized world (Canadian Mental Health Association, n.d.).

At the same time as well-being among our children and youth is at low levels, children's connection to nature is vanishing. Time spent outdoors has taken a back seat to digital media. On average, youth are spending over 49 hours per week viewing media, with the vast majority having access to a bedroom television, video-game console, and a mobile phone (LaRosa, 2010). With the advent of wearable technology and virtual reality, that number is predicted to increase. While children are planted for over 7 hours per day in front of screens, on average they are reported to be spending 4-7 minutes per day in unstructured play outdoors (Louv, 2005). This is a substantial increase from previous generations, compounded by the fact that many children are multi-tasking their viewing, meaning they may be looking at their phone at the same time as they are watching television.

In addition to the time spent in front of screens, Canadian students are parked for 900 hours/year in schools – added to that is the time spent in structured extracurricular activities (OECD, 2014). Children live an increasingly structured existence with limited time to engage in outdoor play, or what Piaget (1962) calls the "work of childhood." As children's lives are largely dominated by adults directing their behaviour, or screens

dominating their attention, children have little opportunity to be outdoors and develop a sense of autonomy, to "tool around" and as a result feel less control over their lives. Without such opportunities, their connection with nature is lost.

The current state of child well-being is troubling. Fortunately, there is a considerable amount of research that points to the benefits of nature contact to human well-being (see Chapter 2). We need nature. As schools struggle to address the wave of depression and anxiety among children and youth, might we look to approaches to education that have sought to connect children with nature? How might such pedagogical approaches play a role in linking nature experiences with children's well-being? This is the problem I wish to address.

CHAPTER TWO

Literature Review

The following literature review is divided into four sections: (a) conceptualizing human well-being; (b) the capabilities approach to well-being; (c) humans' relationship to the natural environment and well-being; and (d) outdoor education and well-being.

The first section begins with an overview of various conceptualizations of human well-being across a range of fields of study. As part of the overview, approaches to well-being are discussed that focus on humans more generally, on the well-being of children and youth more specifically, as well as on students' well-being in schools. The second section narrows the focus to a particular approach to human well-being, namely the capabilities approach to well-being, which plays a central role for the theoretical framework of the study presented in this dissertation. A conceptualization of the capabilities approach is provided, followed by examples describing how the capabilities approach has been utilized with regards to child well-being. The third section presents the ecopsychology literature and other supporting research that contends that humans have a disconnected relationship with the natural world that in turn has a negative impact on human and planetary well-being. This leads to the fourth section which explores in the literature how schools, in particular outdoor education, played a re-humanizing role in their attempts to provide opportunities to repair the disconnected relationship between humans and the natural world.

Conceptualizing Human Well-being

General approaches to human well-being. Falkenberg (2014) offers an investigation of approaches to well-being in order to provide the basis for developing an assessment tool for well-being in education and schools. This analysis provides the basis for the assessment tools in this study. Falkenberg's conceptualization of well-being focuses on three central aspects:

- Where is well-being "located"?
- Who decides on who is well?
- What is the individual-versus-social aspect of well-being?

Within this analysis, human well-being is the "generic notion of what humans generally aim for when exerting their agency: to live well, to live a good life, to live happily, and so on… the concept of well-being is to capture what humans aim for when they exert their agency to live their lives one way rather than another" (Falkenberg, 2014, p. 78).

The literature identifies various capacities necessary to live well as we engage with the world. We require the capacity to experience emotions, pleasure, pain, and enjoyment of activities. We require the capacity to experience desire, need, and satisfaction (or dissatisfaction) with our lives. We also require the capacity to choose how we would like to live our lives. Falkenberg (2014) identifies these capacities as the "location" of well-being. In this manner, well-being may be located in:

- Feelings,
- Attitudes and experiences,
- Desire and need fulfillment,
- Life satisfaction,

- Rights and capabilities, and
- Living toward an ideal.

There are also approaches to well-being that draw on multiple locations, termed as, "multi-locational" approaches to well-being.

In the literature, well-being has been located in experiencing pleasurable feelings. These mental states may include sensory pleasures and "pleasures of the mind." While some philosophers and psychologists identify sensory pleasure as necessary for an aspect of well-being, Falkenberg (2014) argues against locating well-being only in the feeling of sensory pleasure, citing instances in which pain may be preferable over pleasure, and our ability to enjoy other mental states other than just sensory pleasure.

Well-being may also be located in our attitudes and experiences. We may seek out experiences based on our attitude towards those experiences. We may perceive certain positive experiences as "enjoyable" or negative experiences as causing "suffering" based upon our attitude concerning those experiences. As such, our attitudes towards certain experiences can lead to well-being.

Desires and needs approaches to well-being "define well-being as the satisfaction of someone's desires and needs, respectively, and such satisfaction will depend on a particular state-of-the-world to be the case, namely that state that would satisfy the person's desire or need" (Falkenberg, 2014, p. 82). Desires are categorized into two distinctions: actual desires and informed desires. Actual desire refers to locating well-being in the fulfillment of expressed desires (verbally or behaviourally). Informed desire are those desires not based on false beliefs.

Needs approaches view human well-being as the satisfaction of needs. Maslow's (1954) hierarchy of needs proposed that human behaviour is motivated by the fulfillment of needs. Max-Neef (1991) offered a list of nine fundamental human needs: subsistence, protection, affection, understanding, participation, idleness, creation, identity, and freedom. These needs are addressed in the form of "needs satisfiers", which are, as the name suggests, attempts to satisfy needs. The fulfillment of any of the needs contributes to well-being, while a deficiency in any of the needs results in a "poverty" of that aspect of well-being. Also, the interconnectedness of the needs is such that a satisfaction of one need may potentially lead to the impoverishment of another. In conjunction with the capabilities approach, discussed below, Max-Neef's fundamental human needs provides a foundation for the study of the impact of a pedagogical approach on student well-being. Max Neef's fundamental human needs will be discussed further in the methodology chapter.

Life satisfaction approaches to well-being mean to consider an overall assessment of an individual's life, also called subjective well-being (Diener, 2009). Subjective well-being is typically linked to studies that focus on different aspects of quality of life, particularly in the field of economics.

Rights and capabilities approaches locate well-being both in individual abilities and the conditions for a person to live life well. Human rights allow for conditions and opportunities for people to live a life that they value. Approaches under the rights and capabilities banner range from libertarians (the right to unrestrained freedom – as long as it doesn't interfere with the freedom of others) to capabilities approaches to well-being (given external conditions and internal abilities, what are people actually able to do and

be?). This investigation utilizes the capabilities approach to study the opportunities offered by a school program that impact well-being. More details regarding the capabilities approach will be discussed in the second section of this chapter.

Perfectionist approaches locate well-being in living toward an ideal that is external to an individual's own assessment, attitudes, or opinions regarding the ideal. As a result, perfectionist approaches are distinct from the other approaches, particularly with regards to rights and capabilities. As Falkenberg notes, "…perfectionism approaches articulate a quite specific way of living as the way of living well, while the latter type of approaches articulate contextual conditions (rights or capabilities) that allow for someone to live well in the way she considers appropriate for herself having the rights provided or the capabilities developed" (2014, p. 85).

What Falkenberg calls multi-locational approaches to well-being refers to those that draw on multiple approaches discussed above. Examples of this approach include:

- An approach to assess the quality of life commissioned by the French government, which included the subjective well-being approach, the capabilities approach, and the welfare economics approach (Stiglitz et al., 2010, chapter 2);
- Psychological well-being (e.g., Ryff & Singer, 2000);
- Positive psychology - flourishing or well-being includes positive emotion, engagement, meaning, accomplishment, and positive relationships (Seligman, 2011, pp. 16-20).

The second aspect of Falkenberg's (2014) analysis is based upon the question, who decides on who is well? In response to this question, a distinction between subjective and objective theories of well-being is established. Subjective well-being refers to well-being that is dependent on a person's own desires. Objective well-being refers to well-being that is independent from desires. (Griffin, 1986).

Falkenberg (2014, p. 87) distinguishes between subjective and objective well-being approaches along two dimensions. The first dimension positions along a spectrum who decides *how well* the person is. One side of this spectrum represents a reliance on the person's judgement of their own well-being. On the other side of the spectrum, the reliance is more outside of the person's judgement of their well-being. The second dimension positions who decides upon the *concept* to assess well-being. Again, on one side of the spectrum, the reliance is on the person's conception of well-being that is taken into account. On the other side of the spectrum, the person's conception of well-being is more outside of the account.

	Individual's conception to assess well-being	**Both individual and others' conception to assess well-being**	**Others' conception to assess well-being**
Individual assesses their own well-being	• Subjective wellbeing (Diener)	• Welfare approach (Sumner)	• Capabilities approach • Well-being (Seligman)
Both individual & others assess individual's well-being		• Objective wellbeing (Kahneman)	
Others assess the individual's well-being			• "Living towards an ideal" approaches

Figure 1. Subjective and objective dimensions of well-being.

Falkenberg (2014) cautions, "there is no "pure" subjective understanding of well-being, because our conceptualization of what it means for us to be well is at least in part

enculturated" (2014, p 88). Also, a distinction is made between the "experiencing self" and the "remembering self," noting Kahneman's (1999) experiments highlighting the discrepancy between our assessment of an experience in the moment or in retrospect. With this distinction in mind, life satisfaction is an example of a judgement through "remembering" our state of well-being. The in-the-moment "experiencing" judgements can be seen through Kahneman's (1999) concept of objective well-being. The subject, in-the-moment, judges a sequence of experiences to be "good" or "bad." The results are then calculated by an "objective outsider" to assess the individual's state of well-being during the experience. This assessment is a combination of individual and outsider judgement, which is why Falkenberg (2014) positions objective well-being at the crossroads between the objective and subjective dimensions.

A final important feature of the experiencing/remembering distinction is described in Csikszentmihalyi's (1990) idea of "being in flow." This is a state in which an individual is so engaged in work or play to a degree that they barely notice the passage of time. It is a state that is not described as pleasure in the moment, but upon reflection, a sense of well-being is often described. It is in this state of remembering that well-being is experienced.

The third and final aspect of Falkenberg's (2014) conceptualization of well-being describes individual and social perspectives on well-being. It is noted here that a social perspective is not included in all approaches to well-being. Under the banner of "social perspective", there are three identified lines of thinking in the literature. The first discussion concerns the "universal" and "culture-transcendent" nature of well-being and how it can be measured (Falkenberg, 2014). There are a breadth of opinions on this idea.

Some thinkers suggest well-being can be thought of in a descriptive, as opposed to prescriptive, way, and can be seen as universal across cultures (Seligman, 2002, p. 303). Another line of thought proposes that theories of well-being are profoundly value-laden and culturally integrated (Christopher, 1999; Christopher & Hickinbottom, 2008; Christopher, Richardson, & Slife, 2008). Specifically, individualism is thought to heavily influence Western ideas about well-being (Christopher, 1999, p. 142). The literature that highlights culturally diverse conceptions of happiness confirms the idea of a Western bias dominate in the well-being discourse (Christopher, 1999; McMahon, 2006). Christopher (1999) advises that, "understandings of psychological well-being necessarily rely upon moral visions that are culturally embedded and frequently culture specific. If we forget this point… we run the high risk of casting non-Western people, ethnic minorities, and women as inherently less psychologically healthy" (p. 149, as cited in Falkenberg, 2014, p. 89).

The second line of thinking regarding a social perspective of well-being asks the question, how do those who are being assessed for well-being, conceptualize well-being themselves? This question is particularly important for subjective well-being theories that require the individual to assess aspects of their well-being and makes use of the individual's understanding of well-being in the assessment (Griffin, 1986; Sumner, 1996). Subjective well-being theorists recognize that people's identified desires may not, in fact, contribute to their well-being (Griffin, 1986, p. 12), and may be incorrect on their life assessment (Sumner, 1996, pp. 158-171).

The third line of thinking suggests an interconnection between "societal well-being" and individual well-being (Prilleltensky & Prilleltensky, 2007). It is argued that

the well-being of families, organizations, communities, and so on impacts the well-being of individual persons. Falkenberg (2014) proposes two possibilities that arise from the interconnected aspect of societal and individual well-being:

> What might contribute to the well-being of one person or a particular group of persons, might impact negatively on the communal well-being… On the other hand, one might be able to conceptualize individual well-being in such a way that, for instance, communal well-being is an integral component of the former." (2014, p. 90).

"Economic well-being" may be argued to benefit the well-being of individuals, although some have suggested, as wealth has become increasingly concentrated, the result of focusing on GDP economic measures benefits fewer and fewer individuals (Jackson, 2009; Schumacher, 1973).

Falkenberg's (2014) comprehensive analysis demonstrates the interdisciplinary and complex nature of the concept of well-being. The multiple perspectives and complexity reviewed here should inform researchers investigating well-being:

> Because of the complexity of the notion of well-being, any concretization of the notion of well-being will have to (a) include judgment calls on which of the "locales" of well-being to give preference over which others, (b) consider power issues concerning those decisions and concerning decisions on who decides on students' well-being and their adequate preparation for living well in the future, and (c) deal adequately with the cultural embeddedness of any perspective on well-being" (2014, p. 91).

With reference to (a), the "locales" of well-being decided upon for this study included both needs fulfillment (Max-Neef, 1991) and the capabilities approach (Nussbaum, 2011; Sen, 2001). With regards to (b), the conception of well-being was drawn from participants within a needs/capabilities framework developed by Falkenberg (2018, in press) - more on this below. The assessment of student well-being was drawn from participants (including students, parents, and teachers) and from my own observations of

student engagement. In addition, the precise needs and capabilities were determined by the research participants. Regarding (c), the universality of the Max-Neef (1991)/Nussbaum (2011) human needs/capabilities approach model (developed by Falkenberg (2018, in press)) served to either expand or clearly articulate participant notions of well-being.

Approaches to the well-being of children and youth. Childhood well-being is conceptualized in various ways. A broad range of tools is used to assess child well-being. There are also a variety of child well-being initiatives that have various applications, such as how well-being is connected to child rights, socioeconomic status, bullying, and quality of life. There is growing agreement among researchers that both the present and future lives of children should be taken into account. Added to this increasing consensus, there is the belief that an assessment of well-being should include both subjective (meaning the child's perspective) and objective measures of child well-being.

While the conceptualization of *general* well-being is complex and conceived of in various ways across many disciplines, the literature that attempts to conceptualize *child* well-being faces additional complexities and questions. To begin with, child well-being includes both present and future dimensions. Certain opportunities may contribute to a child's well-being in the moment, while other opportunities may contribute to a child's future well-being in adulthood – and sometimes the two dimensions are at odds with one another. Societal context also plays a crucial role. Social context and structures influence child well-being in both impact and the competencies that are required. The importance placed upon the child's well-being, as well as competency expectations, may vary according to social status dictated by the social structures that the child is embedded

within. Of course, child well-being is also dependent on the support of parents, other family members, neighbours, teachers, and so on. Moreover, since the child is growing and developing, the requirements for well-being are constantly evolving.

A significant distinction between the conceptualization of adult and child well-being is the value placed upon the subject's voice. Compared with adults, children have been thought of as incapable of making judgements about the concept of well-being, as well as lacking the ability to judge their own well-being. This exclusion has been increasingly challenged by researchers (Ben-Arieh, 2005; Biggeri, Libanora, Mariani, & Menchini, 2006; Moore & Lippman, 2005).

Child well-being has been connected to the opportunities and freedom that children have available to them. As pioneers of this field, Sen (1999) and Nussbaum (2011) discuss the relationship between rights, freedom, and human development. Sen, and later Nussbaum, argue that economic growth is only valuable if it allows for opportunities for agentic human development. In other words, child well-being requires the investment of time and resources in order to provide opportunities for children to develop capabilities necessary for present and future well-being. Resources are the vehicle to providing children with agentic opportunities that are valued to develop to their fullest potential (Sen, 1999). What is valued will vary across communities and individuals. As a result the capabilities to reflect upon values, coupled with the freedom to choose, are essential. At a broader level, child well-being may be assessed based on the national level of well-being and the fairness of the distribution of resources. In Canada for example, well-being among children in most categories hovers around the global average among Western nations (UNICEF, 2017). However, when distribution across the

population is examined, Indigenous children have much lower levels of well-being, and much lower opportunities for the development of capabilities required for well-being (including lower access to resources to provide those opportunities) (Parliamentary Budget Officer, 2016; Statistics Canada, 2016).

Child well-being research has focused on developmental aspects of well-being and what helps children flourish (Moore & Lippman, 2005). For example, meaningful accomplishments have been shown to help promote happiness (Howell, 2009). A child's well-being also appears to be influenced by the groups of people that children compare themselves with (Carbonell, 2005). Longitudinal studies have explored the connection between well-being levels in children and future trajectories, such as unemployment (Caspi et al, 1998). Future research analyzing longitudinal datasets will allow for the study of factors that through engrained processes and dynamic factors perpetuate inequities among children, such as those described among Indigenous and non-Indigenous populations. Such research may examine how a more equitable distribution of resources and the allotment of opportunities for child development may contribute to a just provision for child well-being.

Approaches to student well-being in schools. What approaches exist that attempt to support child well-being in a school context? On one level, positive well-being has been shown to be connected to the success of a student's learning (Gutman & Feinstein, 2008). If you're miserable, it's hard to learn math. This has been the driving force behind many initiatives and research: in order for children to learn, they must first be well. A growing movement of researchers and practitioners have argued for child

well-being for its own sake. In other words, a broadening of the school's mandate - that children have the right to well-being, regardless of the effect on scores of learning.

During the period from 1950-2000, income and education in North America significantly increased while at the same time subjective well-being remained largely unchanged (Lane, 2000). Further, during this same time period adolescent life satisfaction had noticeably declined (Currie et al., 1998; De Fraine et al., 2005; Huebner, 2004). While researchers note a dynamic of variables that contribute to the decreasing sense of well-being observed among youth, adolescents spend a good deal of time in school and many are reportedly bored much of that time (Larson, 2000; Navarrate, 1999). The question then arises of whether high schools are in fact *contributing* to decreasing levels of well-being, instead of effectively addressing this troubling phenomenon. Given this declining trend, it would be hard to argue that, generally speaking, school initiatives have been successful in increasing a positive sense of well-being among youth. Despite this apparent failure, at least at the secondary level, it is still argued that one of the foundational purposes of schools is to promote children's long-term well-being (García Bacete, 2009; García Bacete & Martínez-González, 2006). As demonstrated below, the literature indicates that schools can play an important supporting role in the development of child well-being.

Prior to the 1970s, researchers widely believed that schools had little effect on child well-being (e.g., Rutter & Maughan, 2002; Scheerens & Bosker, 1997). While researchers *collected* data exploring child well-being prior to the 1970s, studies rarely focused on how schools might impact child well-being (Epstein & Karweit, 1983).

The first wave of large scale longitudinal studies investigating the impact of schools on child well-being discovered significant and positive findings (Rutter & Maughan, 2002). These studies demonstrated a sizeable difference among schools in their students' well-being, that there were significant enough dissimilarities among the schools in their students' well-being that could only be attributed to the schools themselves and not to any other variable. Vygotsky (1978) argued that the development of literacy greatly impacted student thinking and considered schools to be an important vehicle for child development and well-being overall. Research also demonstrates a positive association connecting school achievement, well-being, and strong mental health (Gershoff & Aber, 2006; Roeser et al., 1998; Samdal et al., 1999).

Noddings (2003) argues for a broadening of the role of schools to include the development of well-being and happiness in specific areas, including parenting, interpersonal growth, citizenship, and notably in the development of love for nature and attachment to place. Approaches to expand the purpose of schools to include the well-being of students, such as the approach advocated by Noddings, have the potential to expand the school system's narrow academic goals to a broader purpose that enables students to "live the good life" beyond the monetary conception of what this entails.

Research that highlights "successful" schools, particularly in underprivileged neighbourhoods (Slavin, 1998), often focuses on academic success rather than child well-being (Hedges et al., 1994). There is an emerging body of literature that attempts to fill this gap by examining how schools might influence child well-being. The ways in which schools positively impact child well-being are described in the literature as numerous and varied in their approaches.

The literature highlights schools that give voice to students and others involved in the school system, such as teachers and parents, with an emphasis on the student perspective. One such study asked students to describe the barriers to well-being within the school that they found most troubling (Hill, 2006). A plan was developed to remove or somehow address the barriers, with the help of psychologists and the appropriate school staff. Plans included strategies making the lunchroom a more hospitable place to eat, encouraging teachers to use more positive language in their interactions with students, and the placement and utilization of "worry boxes" in which students submit notes describing the aspects of school that they most loath. Also of particular interest for this study, students requested a provision for more field trips, with a common request for nature-discovery trips.

Another study in which students were asked to describe aspects of the school that got in the way of well-being through the use of daily journal writing pointed overwhelming to a significant bullying problem that had been largely unaddressed by school staff (Duckett et al., 2010).

A different approach identified in the literature is framed through a more positive lens – the needs of the students are identified, instead of the failings of the school. Student needs in this approach are not limited to the academic realm, but also includes friendship and social skills. One particular study involved identifying the needs of at-risk youth (Carmen et al., 2011). The authors here describe the identification of student needs leading to positive outcomes for the youth and also reported a significant investment of time and energy on the part of the school staff.

Research into school impact of child well-being clearly establishes the potential for schools to have a positive influence on students' happiness and well-being. While other influences also have a considerable effect, such as parents, friends, neighbours, et cetera, the effect that schools have is clearly demonstrated in the literature. Further, many of the encouraged practices taught within the school that impact well-being, such as the skill involved in making and maintaining friendships, are in fact very similar to those taught to children by parents and other caring adults.

The ways in which schools impact child well-being are diverse. That diversity is apparent in the way schools are structured, the programs offered, and the quality of the interaction that takes place among and between staff and students. Teachers, and others within a school, who place a value on the well-being of children and intentionally select approaches and design their teaching with the children's well-being in mind and not simply their academic abilities, point to the potential that schools can have in the lives of children.

The Capabilities Approach to Well-being

Gross Domestic Product (GDP) has for some time been the measure by which to assess a nation's quality of life. Nussbaum (2011), and earlier Sen (1992), have challenged this method of assessment. They argue that a nation with a high GDP may, in fact, *not* be an equitable or fair society. As Nussbaum contends, GDP does not describe "where the wealth is located, who controls it, and what happens to the people who don't" (p. 49). GDP excludes important factors in its attempt to assess quality of life. Do all citizens have access to clean water and good nutrition? Is health care and education equitably available to all?

A country can be considered rich through the lens of GDP measurements and at the same time have great inequity, as is the case in Canada as mentioned earlier, when examining the considerable disparities between Indigenous and non-Indigenous peoples, particularly with regards to health, access to education, and for too many, access to basic necessities such as clean water.

With this critique in mind, the capabilities approach offers an alternative measurement to GDP and the human well-being of a nation's citizens. Nussbaum's (2011) capabilities approach endeavors to express well-being in a constructive way. Nussbaum developed a set of core human capabilities needed for basic human well-being. Nussbaum's (2011) capabilities are argued to be universal and not culturally dependent. These capabilities, however, will manifest in different ways according to context and cultural influences. For advocates of human rights, Nussbaum's (2011) capabilities allow for a means to assess the well-being of a nation's citizens as well as the initiatives of governing bodies in their attempts to provide opportunities to develop these key capabilities required for well-being.

Presented as a framework that can be used in a variety of disciplines, Nussbaum (2011) offers the capabilities approach through the lens of social justice and equitable opportunities for human growth and development. Nussbaum's ten capabilities are as follows:

> **Life** – Being able to live to the end of a human life of normal length, not dying prematurely, or before one's life is so reduced as to be not worth living.
>
> **Bodily Health** – Being able to have good health, including reproductive health; to be adequately nourished; to have adequate shelter.

Bodily Integrity – Being able to move freely from place to place; to be secure against violent assault, including sexual assault and domestic violence; having opportunities for sexual satisfaction and for choice in matters of reproduction.

Senses, Imagination and Thought – Being able to use the senses, to imagine, think and reason – and to do these things in a "truly human" way, a way informed and cultivated by an adequate education, including, but by no means limited to, literacy and basic mathematical and scientific training. Being able to use imagination and thought in connection with experiencing and producing works and events of one's own choice, religious, literary, musical, and so forth. Being able to use one's mind in ways protected by guarantees of freedom of expression with respect to both political and artistic speech, and freedom of religious exercise. Being able to have pleasurable experiences and to avoid non-beneficial pain.

Emotions – Being able to have attachments to things and people outside of ourselves; to love those who love and care for us, to grieve at their absence; in general, to love, to grieve, to experience longing, gratitude, and justified anger. Not having one's emotional development blighted by fear and anxiety. (Supporting this capability means supporting forms of human association that can be shown to be crucial in their development.)

Practical Reason – Being able to form a conception of the good and to engage in critical reflection about the planning of one's life. (This entails protection for the liberty of conscience and religious observance.)

Affiliation

> A. Being able to live with and towards others, to recognize and show concern for other human beings, to engage in various forms of social interaction; to be able to imagine the situation of another. (Protecting this capability means protecting institutions that constitute and nourish such forms of affiliation, and also protecting the freedom of assembly and political speech.)
>
> B. Having the social bases of self-respect and non-humiliation; being able to be treated as a dignified being whose worth is equal to that of others. This entails provisions of nondiscrimination on the basis of race, sex, sexual orientation, ethnicity, caste, religion, national origin.

Other Species – Being able to live with concern for and in relation to animals, plants and the world of nature.

Play – Being able to laugh, to play, to enjoy recreational activities.

Control over One's Environment

> A. Political – Being able to participate effectively in political choices that govern one's life; having the right of political participation, protection of free speech and association.
>
> B. Material – Being able to hold property (both land and movable goods), and having property rights on an equal basis with others; having the right to seek employment on an equal basis with others; having the freedom from unwarranted search and seizure. In work, being able to work as a human being, exercising practical reason and entering into meaningful relationships of mutual recognition with other workers. (2011, pp. 33-34)

What opportunities or freedoms are equitably available to individuals in order that they may be able to develop and enact agentic capabilities? Nussbaum (2011) emphasizes the necessarily agentic nature of the capability – the individual has freedom and control over the capability. While the opportunity to develop capabilities towards well-being is made available, people can decide for themselves whether or not they want to enact that capability in a given situation. This emphasis of choice and agentic control is an important feature of Nussbaum's (2011) capability approach. Meeting basic human needs that contribute to well-being, and allowing for agency over the enactment of the capabilities relevant to a need, may be seen as a matter of social justice or an equitable distribution of opportunities necessary to live a good life. For example, a child may have a natural "ear" for music (an individual characteristic) but no external opportunity to experience or learn a musical instrument due to conditions of poverty (external features). For certain agentic capabilities to develop, opportunities must be available.

Schools may be seen as places where opportunities are made available to children to grow and develop. The nature of the school will dictate how narrow or broad (or how explicit or hidden) the opportunities for children to develop capabilities will be. For instance, one of the capabilities from this study is the ability to care for and appreciate

nature. This capability contributes to the fulfillment of the human need to give affection, in this case, with regards to nature. In this case, teachers provide students opportunities in the outdoors to practice this capability – for example, students suggest the removal of litter from a pond in order to preserve a livable habitat for the ducks and other animals – including the act of planning and reflecting on this action and the freedom to participate or refrain. In Riverdale's approach, the school researched for this paper, the student's voice is valued, and so as in the pond example, the idea to remove litter from the pond may come from the children themselves. The children know that they can suggest such ideas and are encouraged in this way (they have agency), and the teachers make this very clear and in doing so provide another opportunity, in this case the opportunity to develop *the capability to voice ideas and questions*, which contributes to the fulfillment of the human need to participate.

The 10 capabilities - life; bodily health; bodily integrity; senses, imagination and thought; emotions; practical reason; affiliation; other species; play; and control over one's environment are presented by Nussbaum (2011) as a proposal that should be revised and rethought over time (pp. 33-34). Nevertheless, Nussbaum (2011) contends that this collection of capabilities points to what each individual needs in order to meet the minimum starting point for a good life.

Humans' Relationship to the Natural Environment and Well-being

Ecopsychologists contend that people need nature. Humans have lived in a close relationship with the natural world for most of their existence as a species. However, most people today live distanced from nature, while seemingly unaware of the fact that they are still completely dependent (Naess, 1985; Roszak, 2001; Shepard, 1998). The

agricultural, industrial, and now digital revolution, each in their own way and to varying degrees, have ushered in a mode of living which has separated people from the natural world. While technological changes have benefited humans over the centuries, they have also diminished our relationship to nature, and by extension, our humanity. The premise that guides this literature review is this: When nature is made available to children in a school context, teachers have the chance to design opportunities for students to experience well-being. Teachers who make use of the outdoors have the chance to design opportunities for children to develop the type of capabilities that may lead to well-being now and beyond. For example, and with a clear connection to ecopsychology, children who experience certain types of intentionally designed opportunities for experiences that attempt to create a relationship between the student and nature may over time develop the capability to establish a lasting connection with nature. Providing children with opportunities in nature to nurture well-being will help address what ecopsychologists refer to as the necessary paradigm shift in our relationship with nature. The following section reviews the literature exploring the impact of nature on well-being, both empirically and theoretically, and maps out an alternative approach to our relationship with nature through the lens of ecopsychology.

How does a close relationship with nature benefit well-being? The literature in the following review can be categorized into two camps: empirical research, dominated by *environmental psychology*, and the theoretical field of *ecopsychology*. The field of environmental psychology is generally concerned with one central question: how does nature contribute to human health and well-being? This question reflects the dominant worldview that nature exists for our benefit. Alternatively, ecopsychology argues that the

natural world is integrated within our being, just as we are integrated within the natural world (Naess, 1985; Roszak, 2001). Ecopsychologists contend that once such a profoundly transformed consciousness takes hold in the human psyche, people's behaviour and priorities will be radically altered. They argue that our current perception towards nature is one of division. Nature is out there. We are obliged to use nature's "resources" for our benefit. Transforming this perception into one in which humans are dynamically integrated with all of life and life-giving elements, is at the heart of ecopsychology.

I have included the following review of the ecopsychology literature in order to locate my research in a conceptual understanding of "humans within nature." The core feature of ecopsychology, the ecological self, recognizes that people are embedded within nature (Naess, 1985). This notion is supported by the evidence provided by environmental psychology and other empirically-based fields, outlined further below. Rather than position the two fields in opposition, they are presented here as mutually supportive. The empirical evidence suggests numerous nature-related benefits for human health and well-being. This evidence supports the notion of the ecological self. In other words, we need, and are integrated within, the natural world.

Ecopsychology: People are embedded within nature. The development of an ecological self is a central focus of the multidisciplinary field of ecopsychology. The advance of an integrated relationship with nature benefits both individual and global well-being (Roszak, 2001). The New York Times published an article entitled, "Is there an ecological unconscious?" in which ecopsychology was described as a "revolutionary paradigm':

> Just as Freud believed that neuroses were the consequences of dismissing our deep-rooted sexual and aggressive instincts, ecopsychologists believe that grief, despair and anxiety are the consequences of dismissing equally deep-rooted ecological instincts. (Smith, 2010, para. 9)

Ecopsychologists argue for a reconnection with our "deeply-rooted ecological instincts."

Kahn makes an important distinction between ecopsychology and other more mainstream branches of psychology. Whereas fields such as conservation psychology focus on behaviour, ecopsychology focuses on how nature enhances the mind (Smith, 2010). Within the mind is what ecopsychologists call an ecological unconscious, which is the core of the human mind. By denying our connection, our sense of belonging within nature, we become part of a society in which anxiety, misery, and isolation become commonplace (Roszak, 2001; Shepard, 1998). A reconnection with the natural world involves an uncovering of our ancestral history on this planet and our current dependence within its systems (Berry, 1988).

To be cut off from the ecological self can lead to falling prey to the dominant consumer culture in an attempt to fill a void of spiritual emptiness and lack of meaning (Durning, 1992). Seen in this way, ecopsychology points to a collective pathology (Shepard, 1998). If we see our identity primarily revolving around our work, the car we drive, the clothes we wear, and the house we live in, then we may find ourselves collectively numb in the face of environmental destruction or species extinction (Fisher, 2013). Countering this apathy requires a focused reflection upon our human need for other people and our human need for nature (Thomashow, 1995).

In Western societies, humans are acculturated into a life which takes as a given that nature is there to serve us and has little inherent value in and of itself (Naess, 1985). If we have the means to extract what is needed or wanted for our own benefit, then we

have the right to do so, no matter what the consequences to other life forms or their habitats. This way of seeing ourselves in the world puts us at the top of the hierarchy.

Our distant and utilitarian relationship on the surface may appear advantageous; by having an arms-length relationship with nature, we are able to plunder without guilt, but upon closer reflection, we may also sense the futility of living a life separated from other life forms, confined to our homes, workplaces, malls, and digital devices. Cultures are relatively quick to adapt whereas species are slow to change. While many in modern Western culture may believe that an integrated relationship with nature is unnecessary, for most of our human existence we have lived deeply embedded in the natural world (Roszak, 2001). While our consumer culture addiction may be somewhat narcissistic and self-serving, our genetic make-up is virtually the same as our distant hunter-gatherer ancestors (van Wyck, 1997).

Humans are social beings. This may be in part why cities have become so increasingly populated. Vibrant and livable cities are responsive and linked to this need to connect with other people. However, humans are also animals that benefit from access to a view of water, trees, access to fresh air, rocks, other species, and so on (Selhub & Logan, 2012). Ecopsychologists argue that the current dominant perspective of humans as separate and superior to the natural world is an anomaly in human existence (Fisher, 2013). This “deviation” slowly emerged as a result of the rise of the agricultural age, urbanization, and the industrial and technological ages (Roszak, 2001). While all of these innovations led to positive developments, they also, to varying degrees, shifted human identity away from one that is embedded in the natural world. Ecopsychology is an approach to looking at our modern disconnection with the natural world as the central

cause of our current state of declining physical and mental health. While ecopsychologists do not tend to advocate for a return to a pre-agricultural or a pre-industrial/technological era (Roszak, Gomes, & Kanner, 2001), they do call for the recapturing of a more "truly human" identity (Fisher, 2013). Once such an identity takes hold, a change in the way we design and live in our cities, produce and consume our food and material goods, and utilize technology will naturally emerge. We see examples of this change in lifestyle in counterculture movements that reject rampant consumption and enslavement in stressful and purposeless work, and embrace what Elgin (2010) and others call, "voluntary simplicity." Those adopting voluntary simplicity move away from a lifestyle that is dominated by the cycle of overwork and overconsumption towards a higher quality of life where it is possible to, among other things, take notice and recognize ourselves as part of a web of life. Instead, as ecopsychologists argue, we live in an age of anxiety (Roszak, 2001). Anxiety is born out of a life that inhibits and restricts human potential. As beings with the perverse and inhuman perception that we are alone and isolated from the life and life-supporting systems around us, we live as anxiety-ridden aliens on a planet of strangers.

Environmental psychologists have developed a substantial body of research outlining the benefits of nature to human health and general well-being. Nature improves mood (Bratman, Hamilton, Hahn, Daily & Gross, 2015), living close to a park reduces the prevalence of diabetes (Christine, et al., 2015; Lunde, Hjellset & Høstmark, 2012), patients experience faster recovery times when they have a view of trees (Ulrich, 1984), and so on. The empirical research linking nature contact with human well-being has been very well documented. The research demonstrates humans benefit from nature, not

because of a natural entitlement to use nature as we please, but because we *are* nature. We cannot exist in a vacuum. Feeling happier after a walk in the park hints at our kinship to life. Feeling depressed after long hours indoors in a windowless room also hints at our kinship to life. A feeling of kinship with living and non-living elements points to an embedded relationship. This kinship, in time, may lead to a breakdown of division between human and non-human nature - the awareness that life and life-giving elements are dynamically self-embedded.

We need nature. The theoretical counterculture concept of an ecological self, an identity that is embedded within nature within the field of ecopsychology, is reinforced by the evidence of benefits-to-humans research gathered by environmental psychologists. With this in mind, the empirical evidence highlighting the benefits of nature contact to human well-being is presented next.

Environmental psychology and other empirically-based fields: People need nature. Our human longing to be with nature is well-documented in empirical research, and anecdotal evidence of the remnants of the human desire to connect with nature is commonplace. Many people still seek out activities such as canoeing, hiking, and gardening. Empirical research shows a preference for wild and rural nature over urban settings existing across ethnic, cultural, and social boundaries (Scopelliti, Carrus, & Bonnes, 2012). The revered biologist E. O. Wilson (1984) contests that we are innately designed to connect with nature. Wilson has coined this genetic disposition as "biophilia." According to Wilson, this disposition, being "soft-wired" in humans, will only flourish if it is allowed to develop, particularly during childhood. Children appear to be born with a built-in tendency to notice and emotionally connect with other forms of

life. Researchers have demonstrated that at as early as four months, infants can differentiate living from non-living forms, showing more interest in life (DeLoache, Bloom-Pickard, & Lobue, 2010).

When asked to name their most cherished memories as a child, many adults identify outdoor experiences (Thomashow, 1995). Despite this observation, childhood has taken place increasingly indoors over the past several decades (White, 2004). Since much of the research in this area tends to focus on a *physical* disconnection from nature, that is, spending more time indoors, it is suggested that a *physical presence* in nature is a first step to perceiving oneself as integrated in nature. Environmental psychologists, and researchers in other science-based fields, have explored three major areas investigating the effects of a disconnection from the natural world in the physical, cognitive, and social/emotional realms. The evidence below is organized along these domains.

Physical benefits. While research has shown that nature contact provides a range of physical, cognitive, and social/emotional benefits to children, researchers also describe significantly decreased rates of outdoor experiences in recent years (Faber Taylor & Kuo, 2006). Family schedules are full and children's lives are increasingly controlled and directed by well-meaning adults. Louv (2011) suggests there may be a connection between the modern structured, digital childhood and the alarming increases in obesity among children, declining social aptitude, and rising mental health illnesses among children. For example, while researchers have pointed to many possible causes of the current rate of obesity, it has been argued that the accelerating increase of childhood obesity over the past 50 years (4 percent in the 1960s compared to 20 percent in 2004)

provides indirect evidence of the effects of indoor, sedentary lifestyles separated from nature (Ogden, Carroll, Curtin, Lamb, & Flegal, 2010).

While time spent in nature has been shown to help with specific conditions, the benefits to humans, it is argued, has a universal effect. As Wilson (1993) contends, in order to live healthy lives, humans need contact with nature on a daily basis. Consistent contact with nature can add to many aspects of health and well-being. For example, research has demonstrated that sitting or walking in a park can lower stress hormone levels and high blood pressure (Taylor & Kuo, 2008). A brief walk in the park has also been shown to relieve mental fatigue and enhance concentration. Further, people who are in contact with green space have the lowest levels of health inequality related to poverty (Mitchell & Popham, 2008). For children, playing and learning in natural settings provides the foundation for optimal physical and mental development (Moore & Wong, 1997).

A recent Toronto-based study investigating the relationship between urban trees and human well-being uncovered similar results. The researchers found that residents living in neighbourhoods with many trees, particularly large trees, describe feeling healthier than residents in neighbourhoods with fewer trees (Kardan et. al, 2015). In addition to feeling healthier, the researchers also discovered lower rates of cancer, diabetes, heart conditions, and mental health illnesses among residents living in well-treed neighbourhoods. Another recent study, which reviewed previous research linking human well-being and nature, concluded that the importance of biodiversity to human well-being is “immense” (Sandifer, Sutton-Grier, & Ward, 2015). The study looked at specific physical and mental health outcomes and found that residents living in

neighbourhoods with ample natural areas live longer and experience lower rates of "anxiety and depression (especially), upper respiratory tract infections, asthma, chronic obstructive pulmonary disorder (COPD), severe intestinal complaints, and infectious disease of the intestine" (p. 6) compared with individuals lacking in nature contact.

Cognitive benefits. Research also demonstrates that experiences in outdoor natural settings cultivate healthy development in children through cognitive and sensory stimulation, in addition to the prospect for exploring, creatively engaging and tackling problems in a variety of ways; for example, children deciding how to build a fort in a forest (Cobb, 1977; Faber Taylor, Kuo & Sullivan, 2001).

A compelling body of research also suggests that nature contact may contribute to healthy child development (Louv, 2005, 2011). Play in nature has been shown to enhance creativity, independence, and cognitive and language development (Moore & Wong, 1997; Pyle, 1993; Wells, 2000).

Human habitation in an urban, built environment is a relatively recent phenomenon with mixed outcomes. While many positive aspects of urban life are apparent, city-living devoid of natural elements can take a toll on mental well-being (Lederbogen et al., 2011). Researchers have demonstrated that our brains react quite differently to urban and natural settings (Kim et al., 2010). Looking at urban landscapes has a typically negative impact while natural settings produce positive emotions and frames of mind. Conversely, cities with accessible green space have been shown to have a positive effect on mood and quality of life. A compelling body of research, dating back to the 1970s, provides strong evidence connecting well-being and health with nature contact in urban environments (Wolf, 2015).

In Japan, a line of study has emerged that explores the benefits of "forest bathing" (a restful visit to the forest for the purpose of mental and physical rejuvenation). Such research has extensively documented the belief in the restorative powers of forest bathing, describing a decrease in stress, anger, anxiety, depression and sleeplessness (for example, an extensive review of previous studies into forest bathing was conducted by Park, Yuko, Kasetani, Kagawa, & Miyazaki, 2010). Similar studies from across the globe have consistently replicated the findings of this body of literature. For example, a Canadian study found that youth associate feeling calm and peaceful with time spent in contact with nature (Woodgate & Skarlato, 2015). A further study found that nature contact decreases stress and aids in the treatment of a number of health conditions (Kahn, 1999). Other research also points to benefits from time spent in nature for children diagnosed with Attention Deficit Disorder, including improved concentration and attention span (Faber Taylor, Kuo & Sullivan, 2001; Faber Taylor & Kuo, 2009; Kuo & Faber Taylor, 2004). In addition, when people with dementia are given the opportunity to spend time in gardens, there is a marked decrease in agitation and aggression (Whear et al., 2014).

Social and emotional benefits. In the emotional and social realms, while children are losing the opportunity to experience nature directly, the research describes an increasing inability of children to relate to other people's life experience (Reed, 1996). The research describes the potential of frequent and regular contact with nature to enrich a child's ability to develop imagination, perceptual skills, empathy, and moral reasoning (Townsend & Weerasuriya, 2010). Outdoor play and learning has been linked to an increase in confidence, social skills, motivation, and concentration (O'Brien & Murray,

2007). Time spent in nature has also been shown to reduce anxiety and increase tolerance, self-control, and focus, as well as the development of a positive self-concept for both individuals and communities (Russell et al., 2013).

Several studies demonstrate that participants who have contact with nature have increased resilience to stress and are able to recover at greater rates to stressful situations than participants with no nature contact. For example, Wells and Evans (2003) found that children living in homes with high quantities of nature contact demonstrated significantly less psychological distress when met with stressful situations compared with children in homes with low quantities of nature contact.

Nature contact may also lead to greater social support. Hüttenmoser (1995) observed that children who habitually played outdoors in natural spaces had more than twice as many friends as children who were confined to indoor play because of parental concerns regarding busy local traffic. Another study found that natural settings encourage social interaction among children (Moore, 1986). The researchers also found that children who play together in nature have more positive feelings towards one another.

Many of the aforementioned benefits of nature contact are described in a study from the University of Illinois Landscape and Human Health Laboratory. The study focused on the effects of nature exposure in Chicago's inner city. The researchers studied the residents of a group of 28 duplicate high-rise buildings along a five-kilometer stretch of land surrounded with heavy traffic streets and rail lines. The stretch of property offered its residents two very different landscapes: one of lush trees, and the other, barren ground. The residents with the two different landscapes were studied and compared. The researchers limited the participants to the first few floors to ensure the residents had a

view of the outdoor landscape. The results included a wide spectrum of benefits. Living in buildings surrounded by a treed landscape was associated with greater levels of attention, greater effectiveness in dealing with important life issues, significantly lower levels of violence and aggression, lower levels of reported crime, and greater levels of social connectedness.

While experiences in nature can play an important role in physical, cognitive, and social/emotional development, nature contact can also encourage a sustainable lifestyle (Atchlet, Strayer, & Atchley, 2012; Kahn, 1997, 2002; Kellert, 1993, 1997, 2002). This represents a shift in thinking from *individual* benefits (for example, how will a relationship with nature improve *my mood*?) towards *universal* benefits (for example, how will a relationship with nature benefit the *common good*?). While individual and universal benefits are undoubtedly connected, they may not always be *perceived* to be connected. Education may play an important role in connecting the dots between individual and universal benefits to well-being that may emerge out of a renewed relationship with nature. In the following section I will review the literature connecting well-being and education.

Outdoor Education and Well-being

If, as ecopsychologists argue, we currently have a "wrong" relationship with nature that dehumanizes and stunts our capacity for well-being, how might outdoor education play a re-humanizing role? Outdoor education has taken on many forms for various purposes, including contributing to well-being. Some pedagogical approaches, while not primarily linked to outdoor education, have been expanded by some to include the outdoors as a source of inspiration.

How has outdoor education contributed to well-being?

If we are concerned about the well-being of our children then we need to ask the question, how has the outdoors been utilized in order to reconnect our children to nature and positively impact their well-being?

There are many people working in schools committed to a broader conceptualization of educating children that practice a diverse array of approaches to support student well-being; outdoor learning is one approach. Although the literature indicates that nature contact benefits human well-being, the review below focuses on outdoor learning in a school setting that supports child well-being.

The following section describes instances of outdoor learning designed to benefit student well-being. The subsections have been organized to correspond with elements of well-being organized under the following headings: opportunities to fulfill a social need; opportunities to fulfill a basic economic need; opportunities to fulfill the need for health, freedom, and control; and opportunities to fulfill the need for purpose. Some of the examples provided below will overlap into other categories.

Opportunities to fulfill a social need. In an educative setting, students may be provided with opportunities to work together and interact socially with other students and the caring adults in the school. Outdoor learning may provide more opportunities for social interaction and collaboration. For example, the Ontario-based EcoArtists Elementary Program challenges students to organize and present a two-day field trip for grade 4 students. After the delivery of the field trip, the grade 11 students gather to reflect on how the program could be improved. The excitement and opportunities for social

growth have been reported by both participants and organizers (see http://www.thedavinciprogram.ca/ecoartists.html).

Opportunities to fulfill a basic economic need. The negative effects of poverty may be potentially reduced by various school-led interventions, for example, breakfast programs, one-on-one support for students, resources for families. Given the research that suggests nature contact may benefit mental and physical health, outdoor learning may have the potential to mitigate some of the negative effects of poverty, including poor health, although there is currently no direct research that I am aware of to support this claim. One study exploring the well-being of a group of five-year old children in an urban setting found that, not surprisingly, hours of outdoor play and television viewing are associated with body mass indexes (Kimbro & Brooks-Gunn, 2010). It could be argued that a child's state in the classroom is often physically, if not mentally, similar to the passive state that is assumed in front of a television. At the very least, the lack of physical movement involved in an indoor approach to learning could not be reasonably said to improve physical well-being, particularly for students living in impoverished neighbourhoods who may already be spending a great deal of time indoors due to parental fears of neighbourhood violence (Kimbro & Schachter, 2011).

The Sustainable Schools Project in Vermont is an example of an outdoor program that had a positive effect on an elementary school that struggled with high poverty (Stone, 2009). As a result of the project, student reading scores went up 22%, math scores went up 18% and enrollment numbers increased as a result of parental interest in the program. The program involved a collaboration with a nearby 1,400-acre working farm and a number of community organizations, and direct civic engagement. The program adopts a

hands-on approach to learning – students learn how to grind wheat and bake bread from local farmers, investigate healthy nutrition with local co-op members, and explore sustainable community design with architects.

Opportunities to fulfill the need of health, freedom, and control. In a school setting, long-term health may be cultivated through strong curricular focuses on nutrition and physical activity that promote healthy lifestyles. As mentioned above, outdoor learning naturally requires more movement than the indoor classroom and is more conducive to cross-curricular movement activities and games. In addition, outdoor learning can allow more choice over what students learn, providing a greater sense of freedom. The Ten UP program is an example of a program that provides secondary students a sense of control and purpose over their learning as they seek to improve the well-being of their community. The program follows a school-within-a-school structure and includes around 80 students and four teachers. Students decide upon concerns and questions they have about their local community, while teachers provide support and negotiate the goals of the curriculum. Students develop social skills such as resolving differences, deciding upon and executing decisions for the common good (Ast, 1995).

Opportunities to fulfill the need for purpose. A sense of purpose is of great importance to well-being. Students feel a sense of purpose or meaning when they can connect the ideas that they learn about in the classroom with the outside world, especially when those ideas lead to actions that address local problems, for example, restoring a local stream, or planting a garden and donating vegetables to a local food bank. One of many anecdotal examples from the literature that support the need for purpose in an outdoor-based school setting is the case of a Northern California classroom that centered

its investigation around the question, “what can we do the help endangered species?” This question led to a student-driven project resulting in the restoration of a nearby creek (Goleman, 2012). The hope here is that by inviting students to investigate questions that they have about their world, by allowing them the opportunities to take action, such teachers may provide purpose to learning, and in effect may improve the quality of their students’ lives.

Summary

There is now a compelling body of evidence and theoretical discourse which indicates that knowing and experiencing nature benefits human well-being (e.g., Roszak, 2001; Russell et al., 2013). As a whole, the theoretical discourse of ecopsychology and the empirical research of environmental psychology and other fields together suggest that nature contact affords significant benefits to human health and well-being.

Outdoor education has been shown to play an important role in contributing to well-being. Pedagogical approaches that are not typically linked to outdoor education have also played a role in utilizing the outdoors in a way that benefits student well-being.

Approaches to education that make use of the natural world in this way may provide opportunities to develop capabilities required to fulfill human needs and positively contribute to well-being. Components of Falkenberg’s (2018, in press) individual well-being matrix, adapted from Nussbaum’s (2011) capability approach and Max-Neef’s (1991) fundamental human need conceptualization, serve as a framework for evaluating the positive impact of the studied pedagogical approach on student well-being. The individual well-being matrix and the fundamental human need conceptualization will be further explained in the methodology chapter.

This chapter presented an overview of the theories, research, and conceptualizations linked to this study. While a substantial amount of theoretical discourse and empirical research exists linking nature contact to well-being, there exists a gap in the literature describing the potential benefit of utilizing nature to develop capabilities linked to student well-being in a school setting. Since our children spend so much of their formative years in a school environment, largely indoors, research investigating the possible benefits of expanding the scope of the physical classroom to the outdoors is warranted. The conceptualization of well-being outlined in this chapter provides a framework to investigate the development and enactment of capabilities contributing to student well-being. The following chapter describes the methodology employed for this study.

CHAPTER THREE

Methodology

In order to investigate the positive impact of outdoor learning upon student well-being, I have conducted a qualitative case study within a utilization-focused evaluation in collaboration with parents, teachers, and administration. The evaluation is guided by an adapted appreciative inquiry approach and follows a theoretical framework adapted by Falkenberg (2018, in press) from Nussbaum's (2011) capability approach and merged with Max-Neef's (1991) fundamental human needs framework.

The case study evaluation assessed the positive impact of the pedagogical approach to outdoor learning on student well-being. The nature of a utilization-focused evaluation required the stakeholders have a say in the process in order to develop a sense of ownership and ultimately, so that the evaluation will be, in fact, used. This included what type of data will be gathered, how it will be measured and analyzed, and how it will be presented (Patton, 2008). Given the context of the setting and study, I have adapted the utilization-focused evaluation approach. The stakeholders determined the *what* of the study, meaning - what aspect of student well-being are you interested in investigating? I determined the *how,* that is, the research method. I have also integrated an appreciative inquiry approach to this utilization-focused evaluation, meaning the evaluation will focus upon the strengths of the program.

The school under investigation was selected based upon its reputation as having a unique approach to outdoor education. The school was recommended to me by faculty members here at the University of Manitoba. I also attended a presentation facilitated by the principal of the selected school that indicated to me that this may be a school that

would be appropriate for my study. At the time, there were not many K-12 schools in the province that utilized the outdoors in an integrative way. The focus of this investigation was narrowed to three classrooms based on advice from the principal and teachers from the school. These colleagues considered the three teachers' approach to offer a representative and exemplary model of the unique outdoor education model developed at the school.

I began this investigation by formally recruiting teachers and parents who are both involved in outdoor learning and who are interested in evaluating the impact of outdoor learning on student well-being. I identified a specific elementary school that fit this description. I engaged teachers and parents recruited from this school in a utilization-focused evaluation that investigates the positive impact of outdoor learning on student well-being. At the stakeholder focus group meeting, I presented the fundamental human needs framework (Table 1) and facilitated a discussion to determine the human needs the stakeholders would like to have investigated with regards to their unique educative approach.

Theoretical Framework

A fundamental aspect of human well-being is the development of a sense of agency and meaning in the way we live our lives (Nussbaum, 2011). A pedagogical approach that utilizes nature can provide that sense of agency and meaning for the many students and teachers who are eager to find the connections between what they teach and learn about in the classroom and what exists in the world outside of their school doors.

Through a Reggio Emilia-inspired approach, the outdoors may be utilized to provide opportunities to develop capabilities required to fulfill human needs and

positively contribute to well-being. In Max-Neef's (1991) fundamental human needs model, nine ontological human needs are identified (Table 1). These needs are considered universal across cultures; however, the way in which these needs are satisfied varies according to specific cultures and historical contexts.

To support the fulfillment of fundamental human needs, specific capabilities may be developed. An adapted version of Nussbaum's (2011) capabilities approach provided an appropriate lens to evaluate a capabilities-driven pedagogy (Falkenberg, 2018, in press). According to the capabilities approach, in order to assess whether or not people are living well we must begin with the question, what are people able to do and to be? What real opportunities are available to them in order to develop as "fully human"? Max-

Table 1

Max-Neef's Fundamental Human Needs Framework

Need	Being (Qualities)	Having (Things)	Doing (Actions)	Interacting (Settings)
Subsistence	Physical and mental health	Food, shelter, work	Feed, cloth, rest, work	Living environment, social setting
Protection	Care, adaptability, autonomy	Social security, health systems	Cooperate, plan, take care of, help	Social environment, dwelling
Affection	Respect, sense of humour, generosity, sensuality	Friendships, family, relationships with nature	Share, take care of, make love, express emotions	Privacy, intimate spaces of togetherness
Understanding	Critical capacity, curiosity, intuition	Literature, teachers, policies, education	Analyse, study, meditate, investigate	Schools, families, universities, communities

Table 1 (continued)

Participation	Receptiveness, dedication, sense of humour	Responsibilities, duties, work, rights	Cooperate, dissent, express opinions	Associations, parties, churches, neighbor-hoods
Leisure	Imagination, tranquility, spontaneity	Games, parties, peace of mind	Daydream, remember, relax, have fun	Landscapes, places to be alone
Creation	Imagination, boldness, inventiveness curiosity	Abilities, skills, work, techniques	Invent, build, design, work, compose, interpret	Spaces for expression, workshops, audiences
Identity	Sense of belonging, self-esteem, consistency	Language, religions, work, customs, values, norms	Get to know oneself, grow, commit oneself	Places one belongs to, everyday settings
Freedom	Autonomy, passion, self-esteem, open-mindedness	Equal rights	Dissent, choose, run risks, develop awareness	Anywhere

Note: Max-Neef, M. A. (1991). *Human scale development: Conceptions, applications and further reflections*. New York, NY: The Apex Press, p. 32.

Neef (1991) identifies nine fundamental human needs in order to live as fully human. Drawing from Nussbaum's (2011) capabilities approach, Max-Neef's (1991) fundamental human needs, and the well-being literature, Falkenberg (under review) has suggested an integrated framework for conceptualizing well-being. This framework served as a lens for evaluating the positive impact of the studied pedagogical approach on student well-being.

Falkenberg (2018, in press) conceptualizes individual well-being as consisting of five components:

1. Having agentic capabilities linked to fundamental human needs.
2. Experiencing situational opportunities to engage one's agentic capabilities,
3. Enjoying life.
4. Living a meaningful life.
5. Experiencing personal and communal connections that contribute to one's well-being.

The five interlinked components are based on the capabilities approach which sees human well-being as the ability to develop agentic capabilities in order to live a life that is seen as valuable (Nussbaum, 2011; Sen, 2009).

Falkenberg (under review) proposes an alternative to Nussbaum's (2011) central capabilities that draws from Max-Neef's (1991) framework identifying nine fundamental human needs. In order to fulfill the nine fundamental human needs, and by extension, individual well-being, people require suitable agentic capabilities.

Figure 2 positions Falkenberg's (2018, in press) five overarching components as having two pairs of dynamics at play. The first dynamic is the inner-outer pairing. The inner aspect refers to qualities within the individual. The outer aspect refers to the individual's environment or context. The second dynamic at work is the "life-chances"/"freedom" – "life-results"/"achievement" pairing. The "life-chances"/"freedom" aspect refers to *potential* qualities, while the "life-results"/"achievement" aspect refers to *realized* qualities. This study focusses on two of the components from the matrix: – the inner and outer aspect of the "life-chances"/"freedom" or:

1. Having agentic capabilities linked to fundamental human needs
2. Experiencing situational opportunities to engage one's agentic capabilities

	inner aspect		outer aspect
"life-chances"	having agentic capabilities linked to fundamental human needs		experiencing situational opportunities to engage one's agentic capabilities
"life-results"	enjoying life	living a meaningful life	experiencing personal and communal connections that contribute to one's well-being

Figure 2: Individual Well-Being. Reprinted from Falkenberg (2018). Reprinted with permission.

The precise phenomena explored in this study are the agentic capabilities linked to human needs and the opportunities that are intentionally provided by teachers for students to develop specific *capabilities* for the fulfillment of identified human needs. In this way, two questions can be considered (a) What opportunities does the pedagogical approach provide for students in order to develop and enact specific capabilities required to fulfill their fundamental human needs? (b) What is the positive impact upon students of the provision for opportunities to develop and enact specific capabilities?

As Wilson (1984) argues, a child may have an instinctive bond with living systems; however, without the proper *conditions* to nurture this innate attraction (or at the very least to not inhibit it), the child may lack the capability to experience the "life-results" that flow from a close relationship with the natural world. Central to this study is the investigation of the *conditions* provided by an outdoor approach and the positive impact they may have on student well-being.

An Appreciative Inquiry Approach to a Utilization-Focused Evaluation

Appreciative inquiry is a rejection of the deficit-based model of evaluation (what's wrong with this school?) in favour of an approach that focuses on an organization's strengths and successful innovations, seeking to increase these aspects. Watkins and Mohr define appreciative inquiry as:

> … a collaborative and highly participative, system-wide approach to seeking, identifying, and enhancing the "life-giving forces" that are present when a system is performing optimally in human, economic, and organizational terms. It is a journey during which profound knowledge of a human system at its moments of wonder is uncovered and used to co-construct the best and highest future of that system. The term "appreciative" comes from the idea that when something increases in values it "appreciates." Therefore, AI focuses on the generative and life-giving forces in the system, the things we want to increase. (2001, p. 14)

In this study, Riverdale (a pseudonym) is identified as a school that is performing at an optimal level with regards to the impact that their specific pedagogical approach has on student well-being. In this approach, the opportunities that are provided to students in order to develop certain capabilities represent the "life-giving forces in the system" or the things we want to see increase. How capabilities are developed and enacted will be of interest, not only to the teachers and parents of Riverdale, but also to those in the wider school system. Through a close investigation of their most positive initiatives, AI empowers participants to engage in a participatory study to enable transformational change.

As a pioneer of the appreciative inquiry approach, Cooperrider provides this foundational definition:

> [Appreciative inquiry (AI)] involves, in a central way, the art and practice of asking questions that strengthen a system's capacity to apprehend, anticipate and heighten positive potential. It centrally involves the mobilization of inquiry through the crafting of the 'unconditional positive question" often involving hundreds and sometimes thousands of people. In AI the arduous task of

> intervention gives way to the speed of imagination and innovation. Instead of negation, criticism, and spiraling diagnosis, there is discovery, dream, and design. (as cited in Watkins & Mohr, 2001, p. 14)

The Five Ds Model outlines the components of an appreciative inquiry. The Five Ds include:

1. A *Definition* Phase during which the goals, including the framing of the question and the inquiry protocol, the participation strategy, and the project management structure are developed.
2. A *Discovery* Phase during which members from the system develop an in-depth understanding of (a) the life-giving properties that are present in those exceptional moments when the organization is performing optimally in human, economic, and organizational terms, and (b) the structures, dynamics, and other associated conditions that allow those life-giving properties to flourish.
3. A *Dream* Phase during which system members create shared images of what their organization would look, be, feel, and function like if those exceptional moments and the life-giving properties in the system became the norm rather than the exception.
4. A *Design* Phase during which system members agree on the principles that should guide changes in the organization's sociotechnical architecture and develop the details of whatever changes are thought to be needed, based on the previously articulated guiding principles.
5. A *Destiny* Phase, sometimes called the Delivery Phase, during which the organization evolves into the preferred future image created during the Dream Phase using the work done in the Design Phase. (as cited in Watkins & Mohr, 2001, p. 25)

For the purpose of this study, the appreciative inquiry approach has been narrowed to the first two components of the Five Ds Model – the Definition and Discovery phases. Since the focus of this investigation is to explore the positive impact on student well-being of an outdoor learning approach, the remaining three phases go beyond the scope of this study. By shining the spotlight on this specific innovative approach to outdoor learning, stakeholders may have their approach clearly articulated, validated, and in turn may choose to increase the innovative aspects of the approach. Thereby, the stakeholders may use the conclusions of this study to be in a position to more clearly articulate their approach to parents and the wider community and increase the innovative aspects of their

pedagogical approach in ways that reflect their professional judgement as they reflect on how and to what degree they have used the approach.

The final three components of the appreciative inquiry Five Ds Model will be implemented outside the scope of this study. I will meet with the stakeholder group in order to present and discuss the findings of the evaluation. The Dream, Design, and Destiny phase will be used as a framework for an action-oriented discussion outlining how this participatory evaluation may inform future action. As cited above (Watkins & Mohr, 2001, p. 25), in the Dream Phase stakeholders will imagine what their school would be like if the outdoor education approach described in this study became the norm. What are the successes of the outdoor education approach that may allow the stakeholders to imagine new opportunities in the future? With regards to the results of this study, what are the stakeholders' aspirations for the future? What kind of future can they imagine for their school?

In the Design Phase stakeholders agree on the principles that should guide changes in the school's organization and develop the details of whatever changes are thought to be needed, based on the stakeholders' agreed upon principles. Based on the "best of what is" identified in the study and the stakeholders' identified aspirations for the future, how can stakeholders create an ideal for the school going forward?

In the Destiny Phase, the school evolves into the preferred future image created during the Dream Phase using the work done in the Design Phase. Stakeholders will create "what will be" by identifying how the identified design is delivered, and how it's embedded into the culture of the school and the community.

Utilization-focused evaluation, extensively articulated by Patton (1986, 1997, 2005, 2008, 2012), originates with the idea that the success of an evaluation should be determined by its usefulness and the degree to which it is actually used. Utilization-focused evaluation is built upon the assumption that if the people who are most invested (in the entity being evaluated) are an important part of the process of evaluation then they will be more likely to use the results of the evaluation. Coupled with an appreciative inquiry approach, a utilization-focused evaluation directs stakeholders to focus on the positive impact of the program. The results of an appreciative inquiry approach to utilization-focused evaluation may clearly articulate and shine the spotlight on an innovative approach, in turn encouraging further expansion and development. An appreciative inquiry approach to utilization-focused evaluation may be useful when examining a program that is exemplary in its approach. The results may be useful to those within the organization, helping them to further articulate and justify their innovative approach, as well as to consider expanding and further developing the approach. The results may also be useful to those interested in adapting the approach to their own contexts. In the realm of utilization-focused evaluation, Patton emerges as the leading authority. The following section draws from his detailed framework.

Utilization-focused evaluation is an evaluation process that is participatory and, as a result of this participatory element, is more likely to be used by its stakeholders. Throughout this process, the facilitator carefully structures the evaluation to be highly participatory, with the idea being that this will lead to stakeholders using the results of the evaluation, as well as what Patton calls, process use. Through the process of evaluation, stakeholders may come to adopt the cognitive and relational skills of effective evaluation.

As a result, a utilization-focused evaluation, in addition to increasing the likelihood of producing evaluation findings that are used, also has the potential to increase process use, thereby strengthening the program's capacity for further evaluative analysis and collaboration.

A methodology similar to utilization-focused evaluation is participatory action research (PAR). As with utilization-focused evaluation, PAR seeks to engage stakeholders in the process of research that may lead to positive change (Minkler, Blackwell, Thompson, & Tamir, 2003). In both approaches, stakeholders are recognized as having an important role because of their knowledge of the background, context, and social dynamics of the organization under investigation. Both approaches also seek to empower stakeholders by helping them to be in control of the research and innovative change within their organization. In the end, I selected utilization-focused evaluation, combined with appreciative inquiry, because of my familiarity and experience with the utilization-focused evaluation method, as well as utilization-focus evaluation's emphasis on intended use.

A major emphasis of utilization-focused evaluation is the development of stakeholder-supported criteria in the initial planning stages of an evaluation. Such an emphasis on the involvement of stakeholders in developing criteria for evaluation will in turn influence the effect of the evaluation. In other words, meaningful involvement of stakeholders in the process of evaluation leads to evaluations that are taken seriously by stakeholders. The role of the evaluator is to consider how the design and facilitation of the process of evaluation will impact its use. Patton often describes the emphasis in utilization-focused evaluation as "intended use by intended users." The questions to be

explored by the evaluator concern identifying the users of the evaluation and the specific uses of the findings. Moreover, as evaluations cannot be value-neutral, the question of whose values will be represented is of great significance. The evaluator develops an open and constructive relationship with stakeholders in order to help them determine the type of evaluation required.

As utilization-focused evaluation does not promote any specific framework or theory for evaluation, the focus identifies the evaluation tools that best fit the context of the program or organization being evaluated. Utilization-focused evaluation is a highly personal, situational and value-laden process in which the evaluator develops a working relationship with stakeholders to determine the kind of evaluation required, particularly the most appropriate content, model, methods, theory, and uses for the particular situation. Since the stakeholders have ownership in the details and process of evaluation, and feel a sense of ownership, they are more likely to use the results of the evaluation to take steps to improve their program. The utilization focused evaluation approach used in this study is combined with an adaptation of the, similarly participatory, appreciative inquiry process.

Research Methods

In the following subsection, I will describe the details of how the utilization-focused evaluation approach was applied in the investigation of the positive impact of the outdoor learning approach on well-being. The project proceeded along four phases:

1. Recruitment,
2. Construction of evaluation focus and structure (development of tools),
3. Data collection, and

4. Evaluation of data.

Recruitment. An elementary school site in the Canadian prairies was selected for study. The site was selected as an exemplary model of an effective outdoor learning approach. The recruitment and introductory phase is outlined as follows:

- The initial formal meeting with the principal was on December 9, 2015;
- The meeting with the staff to informally gauge interest in the study was on January 12, 2016; and
- The meeting with the staff to introduce the study and potential involvement of teachers, principal, parents as stakeholders was on November 14, 2016 (formal invitation email sent following the meeting).

After determining interest and presenting the idea of the study at two separate staff meetings during the previous year, I facilitated a focus group meeting on January 11, 2017. The purpose of the meeting was to gather interested stakeholders (parents, teachers, and the principal) and determine the precise focus of the study. I expressed my interest in their outdoor approach to learning and my wish to collaborate with them to explore the positive impact of such an approach on student well-being. During the meeting, I presented a framework of well-being and human needs (Max-Neef, 1991), and facilitated a discussion to determine which needs, listed in the, the stakeholders would like the study to explore.

Construction of evaluation focus and structure (development of tools). The evaluation focus and structure was determined by the stakeholders, first through the identification of specific human needs, and secondly through the selection of capabilities

required to fulfill the selected human needs. The chosen capabilities were identified and assessed through the analysis of observations and interviews.

Over the period of April to June, 2017, I interviewed eight teachers in three separate group interviews, the principal of the school, five parents in three separate group interviews, and two students in separate interviews, with their parents present. By listening for key ideas, words, or evolving themes, I used each successive interview to build a deeper understanding of a common approach taken to outdoor learning and evidence of the opportunities provided to students to develop capabilities that support well-being. I conducted two school context observations, four observations in a grade 1 and 2 classroom split, three in a kindergarten class (two of those days included a combined two kindergarten classroom outdoor excursion – see Appendix A for details). Building on the human needs that were previously selected by the stakeholders to focus the evaluation (during a focus group meeting earlier in the year), participants were asked during interviews to establish outdoor-education-linked capabilities for each of the identified needs. Participants were also asked to share evidence of the existence of opportunities in which those capabilities were developed. Once the specific capabilities were established, interview and observation protocols were developed. The purpose of the classroom observations was to look for further supporting evidence of opportunities in which the identified capabilities were developed.

I have adjusted the nature of this project in order to take into consideration the guiding philosophy behind the teachers" approach to education at the field site, namely a Reggio Emilia-inspired approach. While the school does not explicitly identify itself as a Reggio Emilia school, the teachers that I observed intentionally practice a Reggio-

inspired approach and have read and received training in this regard. A crucial part of the recruitment phase of this research is the process of identifying the way in which the Reggio Emilia approach to outdoor learning is realized and delivered. What is this approach? What do teachers, students, and parents do in a Reggio Emilia outdoor learning approach? These questions were explored in interviews and informal conversations with participants. The timeline for the focus group meeting, interviews, and observations are as follows. The stakeholder focus group meeting to establish the specific focus of the evaluation was on January 11, 2017. The principal, teacher, parent, and student interviews to establish capabilities and provide evidence of opportunities to develop identified capabilities took place from April through June, 2017. The observations looking for evidence of opportunities to develop identified capabilities and the positive impact of those opportunities took place from April though June, 2017. During this phase, stakeholders identified the aspects of well-being to assess the approach. Specifically, I presented Max-Neef's (1991) fundamental human needs model as a framework to help stakeholders determine what needs they are most interested in evaluating.

This research followed a case study method, involving a triangulation of data including observations and interviews involving two students, eight teachers, five parents, and the principal of the school. The observations and interviews were conducted over an eight-week period in the spring of 2017. Support for the case study design used in this research first included the participatory selection by stakeholders (teachers, principal, and parents) of what specific aspect of well-being would be the focus of the study. Once specific human needs were identified, the capabilities required to fulfill those needs were

identified and assessed through the administration and analysis of observations and interviews.

In order to help the stakeholders identify a specific student well-being focus, I presented the fundamental human needs framework (Max-Neef, 1991) and facilitated a focus group meeting in which participants selected the aspects of well-being for investigation. To contextualize this framework within a school setting, I presented Table 2 to stakeholders in order to aid in their selection of a student well-being focus (co-developed by Falkenberg, Krepski, and Link).

Table 2

Well-being in schools in Canada project: School/Institution human scale development (Adapted from Max-Neef, 1991).

	Subsistence	Protection	Affection	Understanding
To have opportunities:	To be fed before or at school	To feel safe at school	For others to care for student and for student to care for others	To explore curiosity
To actually:	Be fed	Feel safe	Feel cared for; or care for others	Explore curiosity
Participation	Leisure	Creation	Identity	Freedom
To have opportunities to participate in school:	For free time	To be creative	To build, craft, and live an identity	To build and to have agency
To actually participate:	Make use of free time	Be creative	Have/live an identity	Realize your agency

Note: Falkenberg, T., Krepski, H., & Link, M. (October 21, 2016). *Well-being in schools in Canada project: School/Institution human scale development*. University of Manitoba. Used with permission.

In the collaborative selection of a focus on student well-being, stakeholders decided upon six fundamental human needs to focus upon in order to assess the well-being of students, these were: creation, understanding, freedom, affection, identity, and participation. The nature of the questionnaires, observations, and interviews were then crafted to reflect these decisions. The results of the stakeholders" discussions and decisions are summarized below.

Evaluation of data. Data for phase one of the evaluation was collected during the focus group meeting on January 11, 2017. The meeting was digitally recorded and transcribed. The data were then analyzed, evaluated, and summarized. Data collection tools for phase two was developed based on the data collected in phase one. Following the gathering of interview and observational data in phase two, the data was then categorized, coded, and assessed for significance.

During the observations, I looked for evidence of activities or opportunities that helped to develop the identified capabilities listed below (see the italicized phrases).

- **Creation**

  In order to help fulfill the need of creation, the capability *to make choices about what to create* can be enacted.

- **Understanding**

  In order to help fulfill the need of understanding, the capability *to ask questions we have about the natural world* can be enacted.

- **Freedom**

  In order to help fulfill the need of freedom, the capability *to explore student-generated questions and ideas about nature* can be enacted.

- **Affection**

  In order to help fulfill the need of affection, the capability *to appreciate and care for nature* can be enacted.

- **Identity**

  In order to help fulfill the need of identity, the capability *to experience a connection to nature* can be enacted.

- **Participation**

  In order to help fulfill the need of participation, the capability *to voice questions and ideas, and listen to others' questions and ideas* [about nature] can be enacted.

As mentioned by participants in the focus group meeting and in many of the interviews, there is overlap between the capabilities required to fulfill the identified needs. Understanding, freedom, and creation are the most closely connected in the capabilities identified. According to the adult participants, understanding requires, as a starting point, the ability to wonder and ask questions. Freedom is required to both ask and explore questions and ideas. Creation requires the ability to choose what we wish to create. The capability to choose what we are curious about and wish to explore also helps to fulfill the needs of understanding and freedom. Understanding requires, as a starting point, the capability to ask questions, freedom requires the capability to explore student-generated questions, and creation requires the capability to choose.

The evaluation of the development and enactment of the identified capabilities are assessed based upon four criteria:

- Criterion 1: Are there many opportunities to develop and enact the capability? Is the capability infrequently developed or developed on a regular basis?
- Criterion 2: Is the provision of this opportunity to develop and enact the capability an integrated part of the approach and, as such, regularly developed and enacted? Is the capability valued in such a way that it is developed and enacted on a consistent and frequent basis?
- Criterion 3: Are all or most of the students involved in the development and enactment of the capability? Is the opportunity to develop and enact the capability designed in such a way as to encourage all or most of the students to be involved? Does there exist wide participation and engagement among the students in the development and enactment of the capability?
- Criterion 4: Are the opportunities substantial and closely linked to an authentic development of the capability? Do the students have agency over the enactment of the capability? Are there meaningful choices available as they enact the capability? For example, do the students have some control over how, when, or how long to enact the capability? Are the opportunities to develop and enact the capability meaningful and substantial? For example, in the case of the development of the capability for making choices about what to create, are the choices provided to students token choices or substantial creative choices that allow for many possibilities or that have a meaningful purpose? Is the opportunity

to develop and enact the capability designed in such a way as to be driven by purpose and involve a deep engagement among the students?

Data collection. Participant interviews and classroom/outdoor observations were used in obtaining the data for the study. These methods were used to triangulate or check the validity of the data (Lincoln & Guba, 1985). Additional methods conducted in the research to aid in the triangulation of data included member checking (Bogdan & Biklen, 1998; Lincoln & Guba, 1985; Patton, 2012) and determining reliability through patterns (Scheurich, 1996). These methods were used to offset observer bias (Gay, 1996).

Participants in semi-structured interviews. Teachers, parents, and the principal from the stakeholder group were formally recruited for participation in semi-structured interviews. Members of the stakeholder group were informed in writing that they had the option of participating in the second phase of this study if interested. Participants from the stakeholder group were contacted for recruitment through the principal. A letter of invitation to the teachers, parents, and the principal of the school under investigation was sent requesting their participation, and in the case of the parents, their permission to interview their children. Invitations to students to participate in interviews were limited to the parents of the stakeholder group. I also sent an invitation letter to the principal (see Appendix B – E). Along with the principal, eight teachers, five parents, and two students (via their parents) were accepted as participants. Participants were contacted through email to arrange a meeting time, date and location that was convenient for them.

Parents who indicated that they would act as participants in the study were sent an email asking if they would approve of the participation of their child or children in an interview for the study. I also sought the permission of the students themselves.

The sample group for the scope of this study was comprised of eight teachers, five parents, a principal, and two students. The total number of participants was 15 individuals.

Participants in classroom/outdoor observations. I conducted nine observations during the months of April, May, and June. I requested the permission of all of selected teachers to conduct observations in their classrooms through a letter delivered via email through the principal (see Appendix F). Due to limitations of resources and time, I selected the classrooms to be observed with the most extensive Reggio Emilia outdoor learning approach (based on data collected during the interviews in March and April and recommendations from the colleagues of teachers who were selected). Once the classrooms were selected, the parents of the children in these classrooms were contacted through a letter delivered via email through the principal (see Appendix G). Once the parents indicated whether or not they would consent and were comfortable with their child being part of a classroom observation, and they had the chance to speak with their child themselves to confirm whether or not their child would consent and would be comfortable with a classroom observation, I arranged an appropriate time that was convenient to the teachers and students to conduct my observation. Prior to my observation, I also requested the children's permission through a "circle time" talk in which I offered a simple explanation of my study and a verbal request of their permission. For the students and/or parents who did not consent to being a part of the observation component, I provided those students a fun sticker, of their choosing, to wear during the observation in order to remind me of their opting out. I also provided a different type of fun sticker to the remainder of the class as well (so as to avoid having

students opt out in order to get their hands on a fun sticker). I also indicated this "sticker" arrangement to parents in the invitation letter. Although all children were present for classroom observations, I only recorded the interactions and behaviours of those children whose parents had given consent in my field notes. In the three classes observed, about half the parents agreed to classroom observations in Ms. Carson's (57%) and Ms. Berry's (56%) classrooms and just over a quarter of the parents agreed to classroom observations in Ms. Jensen's classroom (28%). The data collection for the interviews and observations was concluded, as outlined by Lincoln and Guba (1985), when the sources of evidence had become exhausted and data became predictable.

Data analysis process. The case study analysis process utilized is a combination of methods suggested by Stake (1995, 2010), Yin (2003, 2009) and Rubin and Rubin (2005). This case study provides a description of the positive impact an outdoor approach may have on student well-being. The subsequent analysis and interpretation offers a description of major themes identified regarding the development of student capabilities through a specific approach to outdoor learning. Stake (1995) says there are two strategic ways that researchers gain meaning about cases. One is through direct interpretation and the other, "through aggregation of instances until something can be said about them as a class" (p. 74). Stake reasons that both of these strategies are necessary with case study analysis, with the most important meanings appearing repeatedly.

Credibility for this study was based on the validity of the instruments used and the internal validity of the study. Credibility here is upheld by (1) sustained engagement (the study was conducted over a two-month period), (2) careful observation, and (3) triangulation (observations were utilized to contribute to the reliability of the findings)

(Lincoln & Guba, 1985). The findings were used to address the central question of this research: *How does a particular approach to outdoor learning impact student well-being?*

I analyzed interview and observation data using protocols that reflect opportunities, in an outdoor learning context, to develop capabilities that may potentially contribute to student well-being. These capabilities, identified by participants in the second phase of the research, may help fulfill the human needs identified by the stakeholders in the first phase of this study, as described earlier. The data were categorized, coded, and assessed for significance. Data analysis is the process of moving from raw interviews and observations to evidence-based interpretations in order, "to discover variation, portray shades of meaning, and examine complexity" (Rubin & Rubin, 2005, p. 202). To engage in this data analysis, interview transcripts were organized into data units with reference to the identified capabilities. After these common data units were recognized, the process continued by sorting the data from each capability into examples of opportunities provided to develop and enact the capability. Each capability was assessed according to four criteria (listed below). Finally, the impact of the pedagogical approach to providing opportunities to develop and enact the capability was analyzed and assessed.

The case study evaluation attempts to describe the impact an outdoor approach may have on student well-being. Specifically, the impact described outlines the development and enactment of capabilities, within the studied approach, that support student well-being. The following chapter presents the analysis and findings of

opportunities provided at Riverdale school to develop specific capabilities and their impact on well-being.

CHAPTER FOUR

FINDINGS AND INTREPRETATION

I investigated the question, *How does a particular outdoor education approach impact student well-being?* Based on the stakeholders' selection of specific needs and capabilities, I analyzed the interview and observational data for the provision of opportunities for students to develop and enact the identified capabilities. Based on these data I evaluated the positive impact of the approach to develop and enact these capabilities, and ultimately the well-being of the students.

A utilization-focused evaluation is the type of evaluation approach used in this study. A utilization-focused evaluation requires the stakeholders to have a say in the process in order to develop a sense of ownership and ultimately, so that the evaluation is, in fact, used. The stakeholders and participants determined the focus of the evaluation based on the following questions:

1. What needs as aspects of student well-being are you interested in investigating? and
2. What student capabilities are required to fulfill those needs?

The results of their discussions and decisions are summarized below, displayed here again for the sake of convenience. The findings of the evaluation are presented in six sections, each discussing one of the six capabilities identified by the participants.

- **Creation**

  In order to help fulfill the need of creation, the capability *to make choices about what to create* can be enacted.

- **Understanding**

  In order to help fulfill the need of understanding, the capability *to ask questions we have about the natural world* can be enacted.

- **Freedom**

  In order to help fulfill the need of freedom, the capability *to explore student-generated questions and ideas about nature* can be enacted.

- **Affection**

  In order to help fulfill the need of affection, the capability *to appreciate and care for nature* can be enacted.

- **Identity**

  In order to help fulfill the need of identity, the capability *to experience a connection to nature* can be enacted.

- **Participation**

  In order to help fulfill the need of participation, the capability *to voice questions and ideas, and listen to others' questions and ideas* [about nature] can be enacted.

The criteria for the evaluation of the approach are presented, followed by the six sections. Each section will be structured as follows:

1. One or more examples from the observation data illustrating opportunities for students to develop the respective capability, and an analysis of a range of data and findings, and interpretation of these data in light of the evaluation criteria;
2. An evaluation of the approach to develop each capability;

3. An overview of how the studied outdoor education approach provides for opportunities to develop and enact the respective capabilities.

The examples of the capabilities drawn from the observation data are presented in narrative form. The analysis part consists of a two-part structure in which the data are analyzed with respect to the evidence that demonstrates:

a) opportunities to develop and enact the capability
b) students taking up the opportunities to develop and enact the respective capability

The evaluation assesses the positive impact of the approach on student well-being through the development of the capability, for example, the development of the capability to make choices about what to create may help to fulfill the need for creative work. The evaluation focuses on the above structure in the analysis. The evaluation criteria are presented next. The final subsection looks at how the studied outdoor education approach provides for opportunities to develop and enact the respective capabilities.

Evaluation Criteria

This section describes the criteria used to evaluate the approach with respect to each of the identified capabilities, displayed here again for the reader's convenience.

Criterion 1 (Frequency): Are there many opportunities to develop and enact the capability? Is the capability infrequently developed or developed on a regular basis?

Criterion 2: (Integration): Is the provision of this opportunity to develop and enact the capability an integrated part of the approach and, as such, regularly developed

and enacted? Is the capability valued in such a way that it is developed and enacted on a consistent and frequent basis?

Criterion 3: (Participation): Are all or most of the students involved in the development and enactment of the capability? Is the opportunity to develop and enact the capability designed in such a way as to encourage all or most of the students to be involved? Does there exist wide participation and engagement among the students in the development and enactment of the capability?

Criterion 4: (Purpose): Are the opportunities substantial and closely linked to an authentic development of the capability? Do the students have agency over the enactment of the capability? Are there meaningful choices available as they enact the capability? For example, do the students have some control over how, when, or how long to enact the capability? Are the opportunities to develop and enact the capability meaningful and substantial? For example, in the case of the development of the capability for making choices about what to create, are the choices provided to students token choices or substantial creative choices that allow for many possibilities or that have a meaningful purpose? Is the opportunity to develop and enact the capability designed in such a way as to be driven by purpose and involve a deep engagement among the students?

The observational data presented below in narrative form in each of the six capabilities was originally recorded with pen and paper, and then within one or two days, typed into a document and added to the database. Upon typing up the field notes, I added certain remembered details and attempted to create a narrative flow to the observed events. I have inserted them here as direct quotes and have referenced them using the

following system. I have used numerical keys to represent data method, interview/observation event, and transcript/field notes paragraph from which a quote or description is taken. Each key consists of a three digit number. The first digit refers to the data method, the second digit refers to either the interview or observation event, and the third digit refers to the paragraph number in the interview or observation data.

Data Methods

1 = Interview

2 = Observation

Interview Event

1 = Teacher Group A – April 21, 2017

2 = Principal – April 24, 2017

3 = Teacher Group B – April 28, 2017

4 = Parent Group A – April 28, 2017

5 = Parent Group B – May 10, 2017

6 = Parent C – June 2, 2017

7 = Teacher Group C – June 2, 2017

8 = Student A – June 16, 2017

9 = Student B – June 16, 2017

Observation Event

1 = School context observation - April 24, 2017 (morning)

2 = School context observation - May 10, 2017 (morning)

3 = Ms. Carson's classroom – May 26, 2017 (morning)

4 = Ms. Jensen and Ms. Berry's classroom – May 26, 2017 (afternoon)

5 = Ms. Carson's classroom – June 2, 2017 (morning)

6 = Ms. Carson's classroom – June 9, 2017 (morning)

7 = Ms. Jensen and Ms. Berry's classroom – June 9, 2017 (afternoon)

8 = Ms. Carson's classroom – June 16, 2017 (morning)

9 = Ms. Berry's classroom – June 16, 2017 (afternoon)

For example, 2.3.8 refers to:

2 = Data method - *observation*

3 = Observation event - *Ms. Carson's classroom on May 26, 2017 (morning)*

8 = *Paragraph* 8 in my field notes.

Note that Ms. Carson is a pseudonym. Pseudonyms are used for all other study participants as well.

Throughout the analysis below, following the observational example, I have made abbreviated reference to each of the criteria in the following way – Criterion 1 = (Frequency). The analyzed data that is linked to the criteria will be referenced in the evaluation section.

Capability 1: To Make Choices about What to Create

> **Observational example: Creating a garden plan.** Ms. Carson, the grade 1/2 teacher who had agreed to allow me to observe her class over the coming weeks, was busy talking to a group of students when I first walked into her classroom. As she spoke, she glanced over and gave me a smile and wave. A parent helper, Ms. Orr, came over and introduced herself. Ms. Orr told me that she has a son in Ms. Carson's class and volunteers once a week in the classroom, as well as helping out with other duties in the school. Looking around the room, I observed the same warm lighting I observed earlier coming from floor and table lamps around the classroom. One of the lights was made of the branches from a pussy willow tree. Much of the furniture and other materials were made of wood and other natural materials. There was very little plastic in the room. Tables and chairs were kid-sized and there were baskets of books by comfortable nooks for reading. A "Jack and the Beanstalk" inquiry was displayed by the window, complete with plant

journals, books, and of course, beans growing up a trellis. There were arrangements of materials found in nature, including flowers, a log with deeply grooved bark, and small stones that the children had painted small pictures upon. On the wall there was a shelf displaying various artistic creations – on the top shelf there was a sign that read, "Choose creatively and with purpose… choose with your whole heart." Another display featured, "collections and treasures" of natural materials used in art works.

School had not yet begun and the classroom was humming with excitement. A small circle of children excitedly chatted with each other by the coats and cubbies. A group of three girls followed their teacher, Ms. Carson, around the room, telling her stories, as she gathered a few materials on the carpet area. A few of the students approached me to find out who I was and what I was doing. Also present were a small group of visiting teachers from another school division. The room was abuzz. It had been eight years since I had been in an elementary classroom (I was a teacher for 13 years) and I was immediately swept up and reminded of the energy. Noticing that all told there were six adults in the room, I jokingly said to Ms. Carson, "You're obviously comfortable with extra adults in the room." She laughed and said, "And the kids don't seem to mind either, bless their little hearts." Shortly after, Ms. Carson signaled for the students to join her on the carpet. She took attendance and introduced me. As we planned, I gave a "kid-friendly" version of my research and distributed two different types of stickers that indicated to me whether I had permission from their parents to take observation notes on their child's behaviour and interactions. (2.3.1-2.3.3)

Later that morning, in order to introduce the "planning a garden" activity, Ms. Carson asked a student with a gardening book to share what she was reading. Ms. Carson used this as a jumping off point to talk about the transplanting of the sunflowers and beans that they had been growing in the classroom. There was a discussion about when it would be safe to do so. Today was May the 26th. One of the students suggested that the temperature of the inside soil should match the temperature of the outside soil. Ms. Carson asked the students why this might be so. There was a bit of discussion here with one student suggesting that it would feel like home to the plant.

Ms. Carson went on to tell the children a story. "When I was a little girl, my mother did garden plans and kept them in the cupboard above the stove. I remember that very clearly. Ever since we got garden beds here at the school we have had the opportunity to plant gardens – I was very excited when that happened. And now we can make garden plans too." Many of the children expressed delight at the idea of a garden plan – either by bouncing in their sitting position, smiling, looking wide-eyed at their classmates, and even a few cries of excitement ("Yaah!"). The children began their work together with Ms. Carson on a garden plan, brainstorming different plants that could be planted (in addition to the sunflowers and beans that the children had been growing in the classroom from seed). Strawberries, watermelon, tomatoes, regular flowers were all suggested. "Why do we want to plant flowers in our vegetable garden?" Ms. Carson asked the children. A few students talked about the importance of bees as pollinators.

> "We are going to take our wonder wagon outside with us," Ms. Carson told the children, "so that we have all the materials we might need to create a garden plan – which might include a picture or some writing. And what better place to make our garden plan than sitting beside the garden beds? In our Journey Books, I would like each of us to make a garden plan. So we are going to do a quick wonder wagon shuffle to make sure that we have everything we need."
>
> Ms. Carson walked over to the wonder wagon did a quick double-check to make sure that all the items for the garden plan activity were in place. The children lined up and when they were all ready, filed out the door with the wonder wagon in tow.
>
> The children walked outside towards the greenhouse and the raised garden beds and sat along the walls of the gardens with their drawing and writing materials – a few of the children needed a gentle reminder about the task. The day was bright and sunny, but also quite windy, and some of the children moved into the greenhouse and worked inside in order to get out of the wind. The children were very animated and all mostly excited and focused on their garden plans. (2.3.6-2.3.10)

Analysis: Opportunities to develop and enact the capability of making choices about what to create. In the above example, the students were provided with the opportunity to make choices about what to create in terms of a garden plan and, ultimately, a garden (Frequency; Integration). In this way, the creative work involved here was meaningful, as the drawing up of these plans will lead to an actual vegetable garden (Purpose). Ms. Carson began with a collaborative discussion about what could potentially go into a garden plan. Student choices were, of course, confined to vegetables and flowers that would be suitable to the climate zone but beyond that, the choices were not limited (Purpose). Ms. Carson created an environment in which most students were comfortable to offer their creative choices for their garden plan (Participation). After the brainstorming discussion, the students were given the opportunity to represent their garden plans through pictures and words, by choosing from a collection of drawing tools – crayons, markers, paints, et cetra (Purpose). There was no cookie-cutter, "choose from these three options for your garden," approach to the creation of this garden. The garden

plan was by the students' choosing (Purpose). The creation of the garden plan represents a purposeful creative endeavor because it is the first step in the creation of an actual garden of life, of food. The garden plan represents an empowering opportunity to make choices about what to create (Purpose). The impact of this opportunity could be felt before it even began. Ms. Carson's classroom had been growing beans, as part of a "Jack and the Beanstalk" inquiry, as well as sunflowers, and Ms. Carson had earlier informed the children that this opportunity to plan and grow a garden was on the horizon. The anticipation to engage in this creative process was obvious and when the children realized that today was the day, they were clearly excited (Participation). All the students observed were quite eager to engage in discussion in appropriate choices and, later, hands-on creative work in considering and drawing up the choices for the creation of a garden plan (Participation; Purpose).

During the observations witnessed within Ms. Carson's classroom, this kind of opportunity was integrated into student activities whenever possible. In these situations, the children were encouraged to make choices about what to create within an open-ended structure (Frequency; Integration).For example, this opportunity to engage in creative work in which students have an open-ended opportunity to choose what to create is evident on the displays of the walls in the three classrooms I observed (Frequency; Integration). Each collection of art projects demonstrated a diverse representation (Purpose). One example, in which the children were invited to create an art piece to represent the cold of winter – upon inspection it was clear that no two were alike. In another example, a student that I interviewed talked about an art project in which he was

asked to represent his imagination – he had to choose how to represent that. In the end, he used an image of slime. He was the only one to make that choice (Purpose).

The opportunity to make choices about what to create was integrated over all witnessed aspects of creative work in the classrooms that I observed, as well as in the descriptions from the interview sessions (Frequency; Integration). Ms. Carson's writing program, for example, provided many opportunities for purposeful and creative writing activities. One such writing project was a book called "The School of Fairy Tales and Wonder!" (Frequency; Integration). This was a culmination of the students creating a physical representation of a fairy tale world, (Frequency; Integration) in conjunction with time spent reading, exploring, and discussing fairy tales. The project was a collaborative effort through various periods of writing and negotiating the storyline among the children. Ms. Carson reported that this endeavor took a great amount of collaboration to create the story and agree on the ideas. In this way, the students were limited only by what could be agreed upon (Purpose). This negotiation involved the children's understanding and experience with the fairy tales that they had been reading and the structure and arc of what makes up such a story. The students were also invited to individually represent one page of the story in the form of an illustration of their choice and making (Frequency; Integration). As in other instances, such as the clay making of the small world (described below), the teacher provided guidance in the form of a helpful technique or, in this case, models of a typical fairy tale, after which, the children are invited to participate in a creative act that allows for choice (Purpose). In other words, a helpful structure or technique is provided in pursuit of creative work, not a restrictive one. Nor are the students left to fend for themselves (Integration). The distinction here

could be likened to an art student showing up on the first day of class, being handed a piece of paper and a pencil, and told to simply start drawing as opposed to being taught certain techniques of representation and once those techniques are understood to some degree, given meaningful choices and control over what to represent. In this way, an activity will be purposeful and have a degree of agency when certain questions are within the control of the student, such as, How long will I spend on this art piece? Do I have meaningful choices to make about the art piece? Do I feel some measure of motivation to engage in this pursuit? In the case of the production of the book, "The School of Fairy Tales and Wonder!" Ms. Carson reported that the students were very eager to engage in this creative work (Participation). That eagerness may be owing in part to one of the purposes behind this book, which the students were made aware of; that is, to have the book laminated, bound, and published in the school library, and available for all to read (Purpose). Providing opportunities to make choices about what to create is made all the more powerful and interesting to students when these creative choices, and the resulting outcome, have meaning.

Another two examples demonstrating an open-ended design allowing for choices in creative work were shared during an interview session with Ms. Jensen and Ms. Berry. They described activities in which kindergarten children were invited to create magical worlds. In the first activity, the students were invited to create a small magical world in the forest using clay (Frequency; Integration). They were asked to consider what would be needed in a small magical world, provided the necessary resources, in this case, clay, as well as the teaching of age-appropriate techniques in working with clay, and then allowed free reign (Purpose). The second example involved garden gnomes. (Frequency;

Integration) Garden gnomes were discovered in the forest, along with a letter. The letter informed the class that the village of the garden gnomes had been destroyed and that the gnomes were in need of help. For the Kindergarten children, what was presented to them was indeed a purposeful activity, because through their eyes these gnomes were homeless and needed a place to live (Purpose). The children decided that they could use "nature treasures" that they had collected on a recent field trip to a farm (rocks, sticks, tree cones, etc.) to create a village for the garden gnomes (Purpose). The choices again were only limited to what one might imagine a garden gnome would need to as part of their village (Purpose). Ms. Jensen and Ms. Berry also reported, not surprisingly, that the interest and excitement in engaging in these creative projects was universally felt by all of the children (Participation). These creations led to writing projects in which students were provided with opportunities to make choices about the nature of their stories (Frequency; Integration; Purpose).

This approach stands in stark contrast to the all-too-common bulletin board displays of duplicate student art or what one might call clone art. The need for creative work may not be satisfied by simply replicating what one is told to copy. In order to develop the capability to make choices about what to create, open-ended opportunities for creative work are needed - opportunities for agentic control - to make choices about the nature of the creation without coercion or unnecessary restrictions. Having this opportunity for creative work lies at the very heart of what it means to be human.

What value does this outdoor education approach have? How does offering opportunities to make choices about what to create positively impact the future potential for student well-being? By providing many substantial opportunities to make choices

about what to create, one could assume that this approach will lead to students developing and enacting the capability for creative choices and creative work beyond the school environment and into adulthood. If we accept the notion that creative work is a fundamental human need, as Max-Neef (1991) argues, then it is important to recognize the great value in this approach to providing the basic provisions for human well-being.

An evaluation of the studied outdoor education approach in terms of the provision of opportunities to develop and enact the capability "making choices about what to create".

Criterion 1. There were many opportunities to develop and enact the capability of making choice about what to create demonstrated in the observation and interview data. The following examples are discussed in the above analysis section (marked with "Frequency"). These include:

- Garden Plan – brainstorming discussion and creation through writing and drawing;
- Diverse art projects and activities;
- A representation of a fairy tale world;
- Writing projects and activities, such as, "The School of Fairy Tales and Wonder!";
- Illustrations for the fairy tale book;
- A representation of a small magical world in the forest with clay;
- A representation of a garden gnome village with "nature treasures';
- Writing projects and activities stemming from the magical world and garden gnome village creations.

Criterion 2. Opportunities for the development and enactment of the capability to make choices about what to create are an integral part of the teaching practice in the classrooms observed and the interview data collected. These opportunities are developed regularly and consistently. The rationale for providing opportunities to make choices about what to create is central to the teachers' belief that children are creative beings. The following examples are discussed in the above analysis section (marked with "Integration"). These include:

- Garden Plan – brainstorming discussion and creation through writing and drawing;
- Diverse art projects and activities;
- A representation of a fairy tale world;
- Writing projects and activities, such as, "The School of Fairy Tales and Wonder!";
- Illustrations for the fairy tale book;
- A representation of a small magical world in the forest with clay;
- A representation of a garden gnome village with "nature treasures';
- Writing projects and activities stemming from the magical world and garden gnome village creations.

Criterion 3. All of the students observed were involved in developing and enacting the capability. The following examples are discussed in the above analysis section (marked with "Participation"). These include:

- Garden Plan – brainstorming discussion and creation through writing and drawing;

- Diverse art projects and activities;
- A representation of a fairy tale world;
- Writing projects and activities, such as, “The School of Fairy Tales and Wonder!”;
- Illustrations for the fairy tale book;
- A representation of a small magical world in the forest with clay;
- A representation of a garden gnome village with “nature treasures’;
- Writing projects and activities stemming from the magical world and garden gnome village creations.

Note: Concerning classroom observations, not all of the students’ parents in the classrooms observed signed consent forms. As a result, I was not able to observe and report on all students in the classrooms.

Criterion 4. The opportunities to make choices about what to create were substantial, meaningful, deeply engaging, and provided for agentic control. The following examples are discussed in the above analysis section (marked with “Purpose”). These include:

- Garden Plan – brainstorming discussion and creation through writing and drawing;
- Diverse art projects and activities;
- A representation of a fairy tale world;
- Writing projects and activities, such as, “The School of Fairy Tales and Wonder!”;
- Illustrations for the fairy tale book;
- A representation of a small magical world in the forest with clay;

- A representation of a garden gnome village with “nature treasures’;
- Writing projects and activities stemming from the magical world and garden gnome village creations.

How the studied outdoor education approach provides for opportunities to develop and enact the capability “making choices about what to create”. Teachers drawn to the idea to link outdoor education to student well-being from a human needs and capability perspective might wonder how the studied outdoor education approach provided students with the opportunity to develop and enact the capability of “making choices about what to create.” In this section I describe the types of activities and their characteristics, and how they may provide such opportunities.

Many of the activities observed and described by participants that provide opportunities to develop and enact the capability “making choices about what to create” share the characteristic of using the outdoors to spark the children’s imagination. Children were invited to create various representations in a forested area, using elements from nature, such as sticks, rocks, and clay. These representations included fairy tale worlds, gnome villages, and other small magical worlds. By using the outdoors to provide opportunities to develop and enact the capability to make choices about what to create, the children had arguably more choices about what kind of world to create (varied, non-uniform materials, such as sticks, and more of them) and more choices of how to create their world. They also had the magical essence of a forest to feed their imagination. For example, when the children built the gnome village, many of them, through their sense of fantasy and imagination, believed that gnomes were in fact living in the village.

Many of the various art and writing projects, whether they were created by the children in the classroom or outside, were inspired by the children's outdoor adventures, including hikes in the forest, explorations in the pond, or encounters with forest tent caterpillars.

There is also the idea that children see a "product" at the end of a process where they made the decisive decision in the planning and execution phase: the initiatives where student-initiated and the activities linked to these initiatives were student-directed. The teacher provided the "frame" for these initiatives, namely that those were linked to the outdoors.

The blueprints led to the planting of actual gardens, as the construction of the gnome village led to the building of homes for actual gnomes (from the child's perspective). The creation of the blueprints for the garden, as with the construction of the gnome village, required meaningful choices. The art projects, while often teaching a specific technique, allowed for choice in the subject, again, often connected to an experience in the outdoors. Upon completion of the garden and art projects, children saw an end product where they made significant decisions in the planning and execution. These initiatives were instigated by the students and the activities linked to these initiatives were student-directed. The teacher provided the frame for these initiatives, namely that the initiatives were linked to the outdoors.

This outdoor education approach provides the opportunities to develop and enact the capability, making choices about what to create by using nature to spark the children's imagination, create magical worlds in the forest with natural elements, again, using the

outdoors to feed the children's imagination, and through outdoor adventures, inspire art and writing projects.

Capability 2: To Ask Questions about the Natural World

> **Observational example: The forest tent caterpillars on the window ledge.** Towards the end of the garden plan development, some of the children discovered a cluster of forest tent caterpillars on an outside window ledge of the school. Magnifying glasses and small containers were quickly retrieved by the children from the wonder wagon. After the children had a chance to examine the caterpillars, Ms. Carson gathered the kids around a bench by the window ledge where the tent caterpillars were discovered. Ms. Carson modeled/posed some age-appropriate questions: Why did they gather here? How long would it take to get around if you were that small? The children, for the most part, were too interested in simply observing the caterpillars. Ms. Carson seemed to recognize this and abandoned this questioning approach and allowed the children to return to simply observing the caterpillars.
>
> As my weeks with Ms. Carson and her children progressed, I would often observe this patience and attunement with seeing the world through a child's eyes, deciding when it is developmentally appropriate to interject with a question, and keeping open to and deciding upon teachable moments in nature.
>
> Many of the children eventually went back to their garden plans and after a time, the children were instructed to clean up the materials and return them to the wonder wagon. During this cleanup transition, there was a lot of continued discussion among the children and Ms. Carson regarding the tent caterpillars. Towards the end of the conversation, I heard Ms. Carson exclaim, "That's a fabulous question!" and I noticed she wrote the child's question on a pad of paper. (2.3.10 - 2.3.12)

Analysis: Opportunities to develop and enact the capability of asking questions about the natural world. In the above example, Ms. Carson provided an opportunity for students to ask questions about the natural world (Frequency). Earlier that morning, towards the end of an outdoor garden planning session, Ms. Carson noticed a group of students gathered around a window ledge of the school observing a cluster of tent caterpillars. Ms. Carson recognized the educative potential of the moment and rather than calling the students back to the task they had been invited to undertake. She saw this

situation as a teachable moment (Integration). In this way, the students had agentic control over their curiosity. The students had the opportunity to respond to their curiosity without having their curiosity hampered by a rigid lesson plan or strict rules regarding proper behaviour while engaged in a task (Purpose). To be sure, lesson plans and rules exist in Ms. Carson's classroom, but when opportunities such as this arise, opportunities that may lead to moments of awe and wonder and perhaps questions about the world, in these situations, Ms. Carson's lesson plans and rules are flexible (Purpose).

It is also important to note, there is a significant distinction between an indoor and outdoor approach to providing opportunities to ask questions. In the indoors, generally a much more controlled environment, a teacher can often anticipate the questions that might be asked, and indeed create opportunities that might provoke curiosity and wonder with the anticipation of certain questions (Purpose). This may also be the intention in the outdoors – a certain site may be visited with the expectation that the children will encounter squirrels and they in turn may observe them and have questions about the squirrels' behaviours. Nevertheless, often in the outdoors things happen that are not expected. Throughout my observations, Ms. Carson demonstrated an ability to be open to the unexpected, attuned to the children's reaction to the unexpected, and able to respond in the moment in order to make decisions about the opportunities that the encounter may offer the children. This was the case when providing and being attuned to opportunities to develop and enact the capability to ask questions about the natural world (Purpose). Furthermore, this was also the case when looking for other opportunities to develop capabilities such as appreciating and caring for nature, as well as connecting to nature, as discussed in the sections below.

In this situation, Ms. Carson tried to facilitate a discussion by posing and modelling questions about what was going on but soon realized the students needed time to simply observe the caterpillars. In this way, Ms. Carson did not coerce the children into having *her* discussion or answering *her* questions. Instead she let them revel in paying attention to the caterpillars. Soon, a discussion evolved spontaneously, and I saw Ms. Carson paying close attention. The discussion eventually culminated in a student posing a question about the presence of the caterpillars, which Ms. Carson quickly writes down, expressing her delight. These instances are examples of the provision of the enactment and demonstration of agency by the students with respect to the capability of asking questions about the natural world. I observed that Ms. Carson listens closely for moments like these and always carries a pad of paper and a pen during all outdoor adventures in order to record any questions that the students have about the natural world. In this approach to teaching, teachers use some of these questions as the focal point of a class-wide inquiry. In this way, children pose questions not simply to have them immediately answered by the knowledgeable teacher present, but because they know well that their questions will be taken seriously and may lead to a rich investigation. During the interview sessions, teachers, parents, students, and the principal, shared a number of other opportunities to develop and enact the capability to ask questions about the natural world.

All the teachers and parents described occasions for children to observe some phenomena in nature, and how such occasions often lead to the children asking questions (Frequency; Integration). These questions flow naturally from most of the children

observed and are, as with imagination, a significant part of what it means to be a child (Participation; Purpose).

For example, over the past year in Ms. Carson's classroom, the nearby forest was a frequent walking field trip destination. There was a period of time in the late part of the winter in which there was a thaw and then a deep freeze, resulting in a lot of ice over the landscape, roads, and sidewalks. This ice made it difficult and unsafe to reach the forest and there was a long period over which the children, much to their disappointment, could not safely visit the forest. Once the snow lifted and the ice melted, the children were eager to return. During an in-class discussion, Ms. Carson invited the students to ask questions that they would like to investigate regarding the forest upon their return. There was one shared question that the students were interested in: how had the forest changed now that the snow had lifted? Some of the children had more specific questions: was the big bouncy branch that the children would play on still there? Were specific items that they remembered – certain rocks, saplings, birds, and squirrels – still going to be there? In this case, all of the children had questions, and these were questions the children were eager to investigate (Frequency; Integration; Participation; Purpose). Because of the integrated nature of the teaching approach that encourages children to ask questions, the children were quite used to these opportunities (Integration). The students seemed used to asking questions about what they truly wondered about that may later lead to a meaningful investigation. During every one of my observations with Ms. Carson, Ms. Jensen, and Ms. Berry's students, I witnessed a teacher writing down the questions of the children (Integration; Purpose). These recorded questions would sometimes lead to a

class-wide inquiry, as in the case of the forest tent caterpillars on the window ledge encounter and the forest-after-the-snow-lifted investigation.

Another example is provided during an exchange between Ms. Jensen and Ms. Berry, as they described opportunities for students to ask questions as they experience a return field trip to a local farm (Frequency; Integration; Purpose). Ms. Jensen and Ms. Berry overheard the children comment on the difference in the size of the cats and wonder why there was such a dramatic change during such a short period. (1.3.28, 1.3.30) Ms. Jensen and Ms. Berry also mentioned in their conversation that children, in this example and elsewhere, noticed that they are often listening to the children talk and then writing down their words. (1.3.87-1.3.91) Ms. Jensen described it this way:

> There are some moments in the classroom where, if I know they're busy doing play or something and they say something absolutely wonderful, I'm like, "Just wait! Just wait! I want to write it down," and I run and get my piece of paper. And they see me writing down what they have to say." (1.3.91)

Ms. Berry describes the attitude that the teachers take to the curiosity of the child as "responsive to their interests." (1.3.107)

Ms. Berry went on to talk about the use of a provocation – a strategy within the Reggio Emilia approach that involves providing an intriguing opportunity or placing in the classroom on in the outdoors something that will "provoke" a response. "So for instance, about robins, if we were outside, the next day I would probably set out a bird's nest that I had maybe gathered previously, some books about birds, and then maybe even an iPad." (1.3.109) Ms. Jensen described a similar experience:

> I would do that prior to them coming in the next day. So during play and explorations in kindergarten, they can go off to play and participate in explorations and do something self-initiated. But those ones who often were very interested the day before will choose to go [to the bird table] because they're

> captured by it. And then I'm kind of on the sidelines looking on and I'm there to be responsive again and know when to kind of jump in and out to provide more. For instance, we were interested in owls at one point because a little boy had seen owls. (Frequency; Integration; Purpose) His parents sent pictures to school. He did a little sharing about these owls that he saw. Well, that day we brought owl books into the classroom and the kids looked on the iPads and they found information [about questions they had]. (1.3.111)

In this example, the sighting of owls by one of the children, along with pictures sent to school of the owls for a nature sharing presentation, presumably led to student-generated questions. This in turn led to investigations into owls, along with a drawing and writing activity to represent the results of the investigation. The key phrases here from Ms. Jensen are, "responsive" as in responsive to the interests and questions of the children, and "fancy footwork," meaning providing opportunities for students to bring meaningful representations or artifacts from nature (nature sharing) and then listening and making on-the-spot decisions about purposeful questions that the students generate based on those sharing sessions (Frequency; Purpose).

Previous to this part of the discussion, Ms. Jensen and Ms. Berry described the use of a "provocation" in order to spark curiosity and questions. This technique of provocation has been reported and observed by Ms. Jensen and Ms. Berry to be successful in providing opportunities for students to ask questions. By recognizing and honouring the children's sense of curiosity and awe when met with the wonders of the natural world, the opportunities for meaningful investigations are endless (Purpose).

This capability was also described from the perspective of parents, Mr. and Ms. Check, as they prepared with their child for a nature sharing activity (Frequency; Integration; Purpose).

Ms. Check:

> One of David's first sharing things - his second sharing was a nature sharing. The kids were encouraged to go out with their parents outside of school and bring something in from nature. We went and found a mushroom that we then researched because we wanted to make sure it wasn't poisonous [laughter] but also so he could - he could tell the class what kind of mushroom it was. So we learned about it that way. (1.4.133)

Discovering the mushroom, with the idea of the nature sharing presentation in mind, provided an opportunity for David and his parents to ask questions and try to find the answers. The nature sharing presentation itself provided an opportunity for David's classmates to ask questions as well. In this way, the nature sharing activities act as a child-generated provocation technique (Frequency; Integration; Purpose).

Mr. and Ms. Check also described in their child a change, with regards to the natural world, since beginning school in Ms. Jensen's classroom. This was demonstrated for them, as will be further detailed in a later section, by the care that their son, David, would take in ensuring that all litter be removed from any natural environment setting that he encountered ("No animal will die on my watch!" as Mr. Check likes to quote his child as saying). Ms. Check also described something else flourish, "more than I've ever seen," namely David's curiosity (Frequency; Integration; Purpose). Ms. Check described investigations of local mushrooms, ice formations, and animal track identification, all that David instigated:

> This wasn't for school, but we went out to go [and explore the lake]. The ice can freeze rather interestingly along the lake. We went out to check it out there. There was a lot of ice formations this year where the waves come up [on the shore and freeze]… it was pretty rough and it froze into to the tree. So we've gone exploring, and we found animal tracks. When we got home, we researched what kind of animal tracks they were… even though it wasn't school. (1.4.149)

Ms. Check, a teacher herself (at a local high school), along with her husband, clearly have responded to and have nurtured David's curiosity. However, Ms. Check also notes, quite animatedly, Ms. Jensen's approach and its effect on David: "It's all that connection, right? The curiosity, it comes home. He leaves here [school] and it's not over for him. Whatever kick he's on from school, he's into it. It comes home. And whatever he's doing here transfers, more than I've ever seen. And I've been a teacher for 10 years." (1.4.156) Mr. Check adds to this observation of an integrated sense of curiosity about the world that transcends the borders of the school:

> I just think that because they take it outside of the four walls of the classroom, it doesn't just end up at the 9:00 to 3:30. I think it ends up part of their lives rather than [just school] – because it's not seen as school. And it is school, and they know it's learning, and they know it's school. But because it's not in a classroom, it doesn't feel like the traditional sit at a desk - it's more easily transferred to the rest of their lives. (1.4.216)

As Mr. and Ms. Check have seen and described in their son, the many opportunities that Ms. Jensen has provided for children to ask questions in a school and outdoor setting, the way these opportunities to ask questions integrates everything that Ms. Jensen does, has, for David, transferred into daily life outside of the school as well (Frequency; Integration; Purpose).

In a later interview, Mr. Check and his son, David, described David's questions and investigation into a plant, discovered on a school nature adventure, that was really "pokey," as he and his class tried to figure out what it was, as well as his questions and investigation into animal tracks in the snow discovered on a family nature adventure (Frequency; Integration; Purpose).

Another student, Charlie, described a situation similar to David's description – the discovery of an unknown prickly plant, presumably a recent event fresh in each of their memories (Frequency; Integration; Purpose). Charlie described the instance upon when he saw a unique plant and didn't know what it was and so he asked his fellow students. (1.9.1) This led to an inquiry later on in the classroom. Charlie described another instance, this with the prickly plant: "Once we found a bush and then we never knew if it was prickly or not. So I went close to it and it kind of poked me." (1.9.57) Charlie enthusiastically described in length the process of their discussion and how they came to identify the bush, "And we kept on researching about it. But finally, I looked at my tree and the other [picture of it], and I figured out that it was, well, one of them was like the pokey trees [in my yard]. It has sharp spikes and berries on it." (1.9.58; 1.9.70) The opportunity to ask questions, in this case, what is the name of this plant? led Charlie's group to a purposeful and authentic mission (Purpose).

Two other parents, from two different families but with children in the same classroom, discussed the example of a nature sharing presentation/inquiry and the teachers' rationale for providing this opportunity for children.

Ms. Anderson, described how her child's curiosity connected his school life with his life on his grandparents' farm (Frequency; Integration; Purpose).

> My parents have a farm… he [my son] was walking [with his grandpa] and they found cow bones. So they think a coyote probably got the cow from the neighbors. And so he… had this experience of how nature works. And then he actually brought them… to share these cow bones (which I now have in my house [laughs]) with the class. (1.5.36)

Ms. Anderson talked about how the presence of cow bones in the classroom led to an igniting of the children's curiosity. (1.5.36) In this way, the child's experiences and

questions about the world are valued and utilized to build capabilities, such as articulating questions (Purpose). Asking questions about the natural world is an important first step in an inquiry. This initial step is fostered by the fact that the questions asked by children are taken seriously by the teacher and may serve as the springboard for an inquiry (Purpose). As the opportunities to ask questions are allowed to flow naturally from the children about a subject of interest, and are not a mandatory requirement (write down three questions that you have about crows for homework), the students have agency over the development and enactment of this capability (Purpose).

Later in the interview, Ms. DeAngelis and Ms. Anderson discussed the rationale behind making provisions to develop and enact the capability of asking questions about the natural world and cite the example of the children asking questions about the identity of animal prints and the investigative work that goes with it (Frequency; Integration; Purpose). Ms. DeAngelis animatedly described the enthusiasm for which she has observed the children ask questions and the open response:

> It's like, one student asks a question and then they'll investigate that, instead of being like, "This is what we're learning today." If something comes up and the students are interested in it and passionate about it, as long it's applicable, they'll go with it, and they'll let them do it - and that's good for that student's confidence. It's good for the rest of them to be able to go with someone else's idea and jump in on it and all work together. So it's really good for them. (1.5.72)

Ms. Anderson went on to describe how the "amazing teachers we have here" will take their students on a walk and, "then somebody sees a print from an animal and they tell the teacher and everyone gathers around and they discuss what it is. It's a lot about building their character." (1.5.78) Ms. DeAngelis describes this character building as they come to feel valued as individuals, "their ideas are important." (1.5.79) She also

talked about the excitement the children feel when they discover an answer to a question that they have, such as the questions and researched discovery of real live animal prints in the snow. (1.5.82)

In the previous statements, Ms. DeAngelis and Ms. Anderson highlight the high level of student interest and the fact that "they're all involved" (1.5.139) in the investigation (Participation; Purpose). Again, the connection between questions asked and taken seriously by teachers that, as a result, lead to investigations provides a strong motivation for students to ask questions in the first place (Purpose).

If the need to make sense of and try to understand the world around us is fundamental to human well-being, then as the participants have identified, asking questions about the natural world is a crucial capability on the road to understanding the world.

An evaluation of the studied outdoor education approach in terms of the provision of opportunities to develop and enact the capability "asking questions about the natural world".

Criterion 1. There were many opportunities to develop and enact the capability of asking questions about the natural world demonstrated in the observation and interview data. The following examples are discussed in the above analysis section (marked as Frequency). These include:

- Observing and asking questions about the forest tent caterpillars on the window ledge;
- Asking questions about the state of the forest after the snow had melted (in anticipation of a return visit);

- Asking questions during a return field trip to a local farm as the children noticed the changes from last time they had visited;
- Asking questions during a child's presentation of pictures of owls that the child and his family had seen (nature sharing session);
- Asking questions during David's preparation and presentation of pictures of mushrooms David and his family had found (nature sharing session);
- Asking questions about ice formations on the shore of a lake and animal prints found in the snow (outside of school and homework assignments; the animal prints recollection was described by both Ms. DeAngelis and child participants in separate interviews);
- Asking questions about the characteristics of a "pokey" plant in order to identify its name (both student participants separately described this experience);
- Asking questions during a child's presentation of pictures of cow bones and deer antlers that the child had found with his grandpa (nature sharing session);
- Asking questions about the identity of animal prints found in the snow during a walking field trip nature walk (as described by two parents).

Criterion 2. Opportunities for the development and enactment of the capability to ask questions about the natural world are an integral part of the teaching practice in the classrooms observed and the interview data collected. These opportunities are developed regularly and consistently. The rationale for providing opportunities to ask questions about the natural world is central to the teachers' belief that children are inquisitive beings. Moreover, children should be provided the opportunity to ask questions about what they encounter in the natural world. In this approach to teaching and learning, these

questions are the foundation for investigative, meaningful work that may in turn fulfill the fundamental human need for understanding. The observed teachers looked openly for opportunities for their students to ask questions in all facets of the classroom and the outdoors. Some of the parents described this capability to ask questions about the natural world as transferred beyond the classroom into the everyday life of their children. The following examples are discussed in the above analysis section (marked with "Integration"). These include:

- Observing and asking questions about the forest tent caterpillars on the window ledge;
- Asking questions about the state of the forest after the snow had melted (in anticipation of a return visit);
- Asking questions during a return field trip to a local farm as the children noticed the changes from last time they had visited;
- Asking questions during a child's presentation of pictures of owls that the child and his family had seen (nature sharing session);
- Asking questions during David's preparation and presentation of pictures of mushrooms David and his family had found (nature sharing session);
- Asking questions about ice formations on the shore of a lake and animal prints found in the snow (outside of school and homework assignments; the animal prints recollection was described by both Ms. DeAngelis and child participants in separate interviews);
- Asking questions about the characteristics of a "pokey" plant in order to identify its name (both student participants separately described this experience);

- Asking questions during a child's presentation of pictures of cow bones and deer antlers that the child had found with his grandpa (nature sharing session);
- Asking questions about the identity of animal prints found in the snow during a walking field trip nature walk (as described by two parents).

Criterion 3. All or most of the students observed, or described by participants, were involved in developing and enacting the capability to ask questions about the natural world The following examples are discussed in the above analysis section (marked with "Participation"). These include:

- Observing and asking questions about the forest tent caterpillars on the window ledge;
- Asking questions about the state of the forest after the snow had melted (in anticipation of a return visit);
- Asking questions during a return field trip to a local farm as the children noticed the changes from last time they had visited;
- Asking questions about the identity of animal prints found in the snow during a walking field trip nature walk (as described by two parents).

Note: Concerning classroom observations, not all of the students' parents in the classrooms observed signed consent forms. As a result, I was not able to observe and report on all students in the classrooms.

Criterion 4. The opportunities to ask questions about the natural world were substantial, meaningful, deeply engaging, and provided for agentic control. The following examples are discussed in the above analysis section (marked with "Purpose"). These include:

- Observing and asking questions about the forest tent caterpillars on the window ledge;
- Asking questions about the state of the forest after the snow had melted (in anticipation of a return visit);
- Asking questions during a return field trip to a local farm as the children noticed the changes from last time they had visited;
- Asking questions during a child's presentation of pictures of owls that the child and his family had seen (nature sharing session);
- Asking questions during David's preparation and presentation of pictures of mushrooms David and his family had found (nature sharing session);
- Asking questions about ice formations on the shore of a lake and animal prints found in the snow (outside of school and homework assignments; the animal prints recollection was described by both Ms. DeAngelis and child participants in separate interviews);
- Asking questions about the characteristics of a "pokey" plant in order to identify its name (both student participants separately described this experience);
- Asking questions during a child's presentation of pictures of cow bones and deer antlers that the child had found with his grandpa (nature sharing session);
- Asking questions about the identity of animal prints found in the snow during a walking field trip nature walk (as described by two parents).

How the studied outdoor education approach provides for opportunities to develop and enact the capability "asking questions about the natural world".

Teachers concerned with linking outdoor education to student well-being through a human needs and capability lens will be interested in how the studied outdoor education approach provided students with the opportunity to develop and enact the capability of "asking questions about the natural world". This section describes the types of activities and their characteristics that this approach is using and how they may provide such opportunities.

In this outdoor learning approach, influenced by the Reggio Emilia philosophy, teachers take note and document questions that the students have about the world. These questions may form the basis of inquiry projects. As the principal, Ms. Kitamura, noted:

> If you provide students opportunities to ask questions, to identify something that's unfair, so social justice issues, if you give them opportunity to, so under participation, to collaborate, to work together, to listen to each other that this, not only does it have a benefit to learning, but it also has a benefit the students' well-being and their capacity for well-being beyond the school years. (1.2.123)

This "benefit to the students' well-being and their capacity for well-being beyond the school years" is linked in the approach to exposure to the natural world. Ms. Carson described the role of the outdoors as a tool to "accelerate" learning and provide opportunities to ignite curiosity.

> You're not learning in nature. You're learning with nature… We're not taking our silent reading outside. We're not replacing what we could do in a classroom. It's kind of the same as technology. If I'm replacing a paper and pencil task with a tablet, I'm just replacing, right, as opposed to accelerating what I could do with the technology. So it's almost approaching nature in that way, that it's accelerating their learning. It's deepening their learning. And it's authentic… You can teach them about animal habitats on a piece of paper and they can observe things in a book, but when you actually go outside, and they find an ant hill, and they find worms, for them then their observation skills are actually being used. (1.1.17)

Utilizing the natural world as a great tool to ignite curiosity taps into a wonder that, as Ms. Berry argued, is already present:

> I think a lot of kids already have so much curiosity about the world around them. And giving them that opportunity to be in that outdoor space and giving them the chance to have the time to just sit and look closely and not be expected to do maybe specific things. But just that they're open to look and see what they want to see. (1.3.16)

By going out into nature, it is possible to encounter a rich web of potential questions and mysteries, no matter whether these opportunities were intentionally planned or hoped for or unexpected occurrences. Ms. Jensen articulates this point:

> All the opportunities that the outdoors provide, I think. For questioning and wonder, there's so many things out there that are at their fingertips. (1.3.15)

One of the parents, Ms. Check, reiterated this idea:

> Well, I think the ability to go and be inspired by something in the world is important to allow kids to have questions and build the capability of asking good questions. And the more experience they have, the better. So being outside allows them to grow that curiosity. (1.4.6)

This approach to inviting the students to ask questions about the natural world is integrated into every part of learning. As one of the teachers commented:

> It all comes in part that with ownership over their learning too, right? Because that's not just outdoors, like we do that in the classroom too with their inquiry work. Well, I want to learn about this or I'm wondering about this, and we use that to drive where we're moving to next or which part that they're most interested in. (1.1.245)

Here we see the development and enactment of the capability to ask questions within the classroom support the outdoor education approach to develop and enact the capability to

ask questions about nature. The indoor approach to develop this capability strengthens the contributions of the outdoor approach.

The prior allusion to "provocation" is in reference to a technique in which the teacher intentionally creates an encounter between the student and an object of curiosity, something that provokes an interest, for example, a multilayered, colourful rock or the sounds of a bullfrog in a pond. Such encounters may lead to questions that are later explored together. For example, Ms. Jensen described the integrative reach of the development of this capability, recounting examples of opportunities to ask questions about the natural world:

> It's trying to do that in every part of our teaching, but especially in the outdoors. If they say, "What's this?" Well, what do you think that is? What part of the plant is that? Or… what is that hanging from the greenhouse? if they're wondering what a spider web is and having them come up with and exploring those answers themselves. (1.3.25)

Another distinction worth emphasizing is the fact that some provocations are intentionally planned and others are not, for example, the discovery of an army of forest tent caterpillars on the school window ledge or a butterfly alighting on a child's shoulder. The important characteristic of this outdoor approach is the teacher's practice of providing unplanned provocations, the moments of delight and wonder that nature offers up. This, of course, requires a teacher's ability to be open to the provision of such unplanned provocations and the ability to recognize the arising of such openings.

As the principal, Ms. Kitamura, pointed out, the provoking of students to asking questions, for instance about the natural world, are not in conflict with the need of teachers to teach a given curriculum, but rather provide opportunities for students' questions and passions to be linked to the curriculum:

> [It's] something so much more powerful where we noticed that if we bring in students' passion, intertwine it with inquiry, open up our questioning and set up provocation so that we're always intertwining curriculum, interests and being responsive, then it becomes more than that. It becomes we're igniting some of their passion, some of their interests… it's an investment because it's authentic to their interest. (1.2.44)

During another interview with Ms. McComb, a resource teacher, and Ms. Johnston, a music education specialist, the connection is made between initiating the process of understanding through questions and purposeful engagement.

Ms. McComb:

> Knowing that they can take risks, or find out what they want to know, and initiate that conversation with their peers and the adults. Understanding that they can be curious about something, like in nature. They see the whole process, and that they can take that curiosity, or that wonder, and research it, and find out about it. And be able to document it and talk about it. Share with their classmates and their teachers. (1.7.2)

Ms. Johnston:

> It's an absolute connectedness that, they come back, their writing stems from that, their inquiry, their explorations that they might create next are usually stemmed from those rich experiences. (1.7.81)

Ms. McComb:

> And I do think part of it is teachers were seeing that when they were bringing nature into their classroom how much the children's wonder was being sparked and how much engagement. (1.7.148)

Ms. Johnston:

> It's all been partners. It's been all-encompassing. But I do believe it all started, to go back to Reggio, and developing our Reggio philosophy, and environment as a third teacher. (1.7.155)

In the Reggio Emilia philosophy, the "third teacher" is the classroom environment. Malaguzzi, the founder of the Reggio Emilia approach, describes the three teachers to be adults, other children, and their physical environment (Edwards et al., 2012). Teachers design the classroom environment in a thoughtful way in order to provoke curiosity and

imagination, and support student engagement. Such a classroom environment is designed to provide opportunities for children to question, explore, play, and create. A typical Reggio Emilia class includes well-organized areas in the classroom for different types of engagement, including: individual, quiet engagement, areas for small and large group discussion, spaces for inquiry and creative work, and spaces for imaginative play (Edwards et al., 2012). As Fraser (2012) describes it, such a classroom also recognizes the child's voice:

> A classroom that is functioning successfully as a third teacher will be responsive to the children's interests, provide opportunities for children to make their thinking visible, and then foster further learning and engagement. (p. 67)

The child's voice is represented in the design of the classroom concerning the questions investigated and the opportunities for creative work and play. As Heard and McDonough (2009) observe:

> We need to think about creating classroom environments that give children the opportunity for wonder, mystery and discovery; an environment that speaks to young children's inherent curiosity and innate yearning for exploration is a classroom where children are passionate about learning and love school. (p. 2)

In the studied outdoor education approach, the third teacher extends to the natural world. "Wonder, mystery, and discovery" can all be readily fostered through immersion in the outdoors. The children's questions and interests are recognized and reflected in the way in which engagement in outdoors is designed. By extension, the experiences in the outdoor, third teacher, environment can also act as provocations for inquiry and creative work and play in the indoor environment.

This outdoor education approach provides the opportunities to develop and enact the capability of asking questions about the natural world by using nature as a "third teacher" to spark the children's curiosity, encouraging them to ask questions about what

they encounter. As described above, this outdoor education approach is an adaptation of the Reggio Emilia philosophy, in which students are provided with a provocation or something that ignites their curiosity, thereby leading to an inquiry project. Provocations in the Reggio Emilia philosophy typically happen within the classroom. The adaptation here, and what makes this an outdoor learning approach, is the use of nature to provoke curiosity.

Capability 3: To Explore Student-Generated Questions and Ideas about Nature

> **Observational example: The pond exploration.** In Ms. Carson's classroom, upon arriving before the bell, there were many children already in the classroom ready for the day. There was a lot of excitement as the children knew that they would be going on an outdoor adventure that day to the pond. After the bell rang and the children gathered on the carpet, Ms. Carson began her introduction to the morning plans. Not long after, the fire drill rang and the kids quickly lined up and were led out the door. When they returned, the energy was even higher. Somehow, Ms. Carson was able to regain their attention as she led a discussion about safety around the pond. This was truly a discussion and not a lecture about safety. While Ms. Carson guided the conversation to remain on the point of the discussion (safety around a pond), she allowed interjections and contributions to the conversation from the students. There were stories from the children about boots stuck in the mud, and stories of bug bites, sunburn, and how we might prepare or lessen the risk of these things. The talk was peppered with questions from Ms. Carson.
>
> During this interaction and in others, I observed in Ms. Carson many strong qualities – patience, empathy, respect for the inquisitive nature of children, and more generally a respect for childhood…. During this discussion, Ms. Carson listened intently, nodded in understanding, and when appropriate, smiled and sometimes laughed along with the students' stories. After the students' contributions, Ms. Carson shared with the class her Risk Assessment Plan for the trip to the pond. She asked for and added the students' ideas to the plan. Once the plan was finalized and reviewed, the children were asked to line up with their pond gear - water bottle, hat, rubber boots, etc.
>
> Upon arriving at the pond, a short walk from the school, one of the children vigorously pointed out the prairie grasses along the pond. Ms. Carson smiled and said that yes, the grass [that they had planted] is doing well. Before the children descended upon the pond, Ms. Carson asked them one last time to review their safety plan and then provided a net dipping demo from the equipment in the wonder wagon.

The children all appeared to be very excited to begin their exploration of the pond. The muddy shores of the pond did not slow them down and when one of them would get stuck, one of their friends would quickly pull them out. At one point, one of the children announced to his friend in a loud voice, "If I get stuck in the mud, pull me out. I'll do the same for you!" The net dipping was the main attraction and the children would eagerly share what they had found and displayed in their small containers. The boots stuck in the mud became a type of play, almost a chance to practice helping each other out of a bind. One child called, "Dang it! I've been here too long – pull me out!" and a friend quickly ran to the rescue and tugged him out. "Thanks! You don't want to be in there as long as I had! When you're in that long and you're pulled out, your boots make a sound like a kiss!"

There was much excitement as the children observed what they had each gathered in their viewing containers and tried to match it up with reference cards and books. Some of the children voiced questions about the insects, which Ms. Carson noted down.

One of the children decided that she wanted to bring her collection of pond critters back to the classroom. One of her classmates told her bluntly that this was a very bad idea and that this was their home. A heated discussion ensued, and Ms. Carson listened patiently. When the discussion seemed like an intervention was required, Ms. Carson signaled that it was time to gather up the equipment and return it to the wonder wagon. Once this was done, Ms. Carson facilitated a discussion around the question of whether it is fair or respectful to bring the pond insects back to the classroom. The discussion centered around the reasons, which the children all provided. Some of the children said the insects need a proper home/ecosystem and food to survive. Others thought it was unfair to separate the water insects from their families. In defense of adopting the pond insects as pets, the child described the home that they had created for the critters in their plastic containers and her ability to care for the pond insects. In the end, all of the children released their insects back into the water, even the one who had brought up the idea (although she was still not happy with the outcome of the conversation). Ms. Carson would later share with me the importance of understanding and appreciating where children are at, developmentally and individually, again, this seems to be, in part, the source of her patience and understanding.

Before leaving, the class took a moment to offer gratitude to the pond through a silent reflection, which the children all observed despite the still-fresh, heated discussion, not to mention the excitement of the pond exploration. About one minute into our walk past the high school and back across the field, Ms. Carson dramatically signaled for everyone to crouch down, be silent, and to look to a nearby tree. There in the tree was a blue jay, with its familiar, raspy cluck, and up ahead there was a robin hopping around on the grass. The children could barely contain their excitement. Some of the children began to shuffle closer to the birds. Two of the boys got into an argument over how close you should crawl. Ms. Carson picked up on this and managed to patiently quell the argument while

still allowing the children a chance to appreciate and enjoy the encounter with the two birds. (2.5.2 - 2.5.6)

Analysis: Opportunities to develop and enact the capability of exploring student-generated questions and ideas about nature. In the above example, the students were provided with opportunities to develop and enact the capability of exploring ideas and questions about the natural world through a nature adventure to the local pond (Frequency; Integration). Perhaps the most obvious example of opportunities for exploration included the exploring of questions about pond insect identity, such as. "What is this thing?" through the collection and observation of water insects and the use of insect guidebooks and resource cards. Most of the children observed were involved in this type of exploration (Participation). The students also had the freedom to explore and simply observe pond insect behaviour without the obligation to determine the name attributed to the insect or any other question imposed upon them (Frequency; Integration; Purpose). A central purpose of nature adventures, such as this one, is to provide opportunities for children to ask and then later explore questions and ideas about what they encountered (Purpose). To this end, Ms. Carson took note of some of the students' questions as potential sources of inquiry for the future.

At the pond, children also explored student-generated ideas/strategies regarding pond safety (Frequency; Integration; Purpose). For example, they explored strategies to avoid being stuck in the mud and experimented with ways of helping their classmates get out of the mud (Ms. Carson also ensured that the children were well-versed in the critical rules; for example, no wading into the water, as well as situations in which an adult should be alerted).

Finally, the children also had the opportunity to explore and voice ideas and questions regarding the ethics of keeping pond insects as classroom pets in an unplanned discussion at the end of the nature adventure (Frequency; Integration; Purpose). Both sides of the discussion were heard, and an "age-appropriate" dialogue took place, carefully facilitated by the teacher. While the one child who was in favour of adopting the pond insects as pets was not allowed to bring them back to the classroom, she was provided the opportunity to argue her point (Purpose).

Overall, the pond experience demonstrated an approach in which the children's ideas, discoveries, and contributions in helping one another, are valued and seen as a potential source for further exploration (Purpose). This type of approach is the basis for providing opportunities for exploring ideas and questions about nature.

In an interview, Ms. Baker described a student-led instance of the development of exploring questions and ideas (Frequency; Integration; Purpose):

> I think they take it to such a different level, like the connections they make. We were doing rocks and minerals, and… one day we just went to the beach to play, well, to explore. And the boys were digging, digging, digging, and they're like, "Ah, this is like the layers in the earth because we hit clay, and look at how the rocks change," and all of a sudden it was like, [anything you could get them, they would read] a paper or a video, it just was like, bam, all of a sudden, and they were showing me, and we were taking pictures, and it was like, and I didn't tell them to go and they were just digging and playing, digging and playing, and then all of a sudden this [inquiry] was all pulled in and it made sense. It all came together. (1.1.108)

When Ms. Baker said that, "It all came together" she was referring to the investigation that was sparked out of the desire to explore questions that occurred to the boys during a deep dig on the beach. The provision of the opportunity for the boys to explore their questions about the layers of soil that they encountered was made available through the awareness, on the part of the teacher, of the boys' excitement and curiosity, and an

attunement to the questions that they wished to explore (Purpose). It was also made available through the freedom afforded by the teacher for the children to explore such questions. The teacher provided support in the form of appropriate resources and the flexibility within their "rocks and minerals" theme to explore their specific questions about layers of soil discovered on a local nature adventure.

The freedom to explore questions and ideas about nature is also supported by the teachers' openness to take the children outside in order to explore queries – sometimes at the children's request (Purpose).

Ms. Englund:

> …it's been their part in the outdoor learning experience in fostering their passion for the outdoors and for nature and for preserving our environment and with those type of things - so that when we are coming across a concept or asking a question, their go-to is, "Well, we should go outside to explore that." It becomes that they recognize the outdoors as a resource to them that can teach them and that is a place where they can learn just as much as going to the library or in the classroom. So they almost start to see nature in a way a little bit differently than just somewhere I go to play. (1.1.12)

Ms. Carson:

> But without such strict parameters. And that's another thing that I think's really important and because it happens in the classroom too, they don't see mistakes. We've tried so hard to let them see opportunities as to opposed to, so then when they do have those choices, because years ago when we first . . . were embracing the Reggio philosophy, and you would say, "Well, you have choice." What do you mean I have choice? Can you just choose for me? Where do you want me to go? What do you want me to do next? And so it was really scary to them, and I think we just don't see that anymore. (1.1.117)

The transformation from a child who asks, "Can you just choose for me?" to one who asserts "Well, we should go outside to explore that" is arguably attributed to the meaningful opportunities for exploring questions and ideas about nature (Purpose). Opportunities to explore ideas are afforded through the *value* that teachers place on

children's ideas, as well as the resources and support needed to explore and try out ideas (Purpose).

Ms. Baker:

> Well, all over the school they're doing things. The kindergarten's right now--today in class they decided that on Monday they're going to have a litterless lunch day. But they made it across the school. (1.1.201)

Particular ideas and questions for exploration, as has been demonstrated, often come from the students. However, in this pedagogical approach, teachers will sometimes begin with a general idea or question and allow the children to explore more specific ideas or questions, as in the example below (Frequency; Integration; Purpose).

Ms. Berry:

> I think like a couple times that we've gone out with like a far more specific purpose was the one day that we were just curious about lines in nature. So we spent time just investigating for like, what lines do we notice in nature? And what kind of lines do we notice? And the patterns that they were seeing. And then we went out again with our learning buddies and that time we were specifically looking for letters in nature. So where can we find those? (1.3.55)

Ms. Jensen:

> And prior to going out looking for lines, we had read a really great book. It talks about lines and then part of it was they're aligned in nature and that kind of just going out, just that connection to literacy. (1.3.56)

The children were introduced to the idea that lines may be found in nature. The children now had the freedom to explore this idea by looking for these lines themselves and choosing what to represent in order to confirm this idea. As an experiential activity – seeing the lines in nature firsthand and then having an opportunity to represent those lines – the experience was an authentic one (Purpose).

Ms. Jensen describes the importance of providing opportunities for the exploration of questions and ideas that come from the children (Purpose). "Because what

my students choose to do in the classroom or outside is highly dependent on what they're interested in." (1.3.134) Ms. Jensen went on to describe a personal experience outside of the school environment:

> …I was outside with my nephew who happens to be in one of the other kindergarten classes. And we were walking through the bush together, and he excitedly called me almost like, "Hey! What is this thing?" They're fish eggs - and he wanted to know about them and wanted to know why they were there. "Why are they all lumped together like that?" Just being willing to explore why. (1.3.249)

Here we see on the one hand, a natural curiosity about a discovery, and on the other, an opportunity to explore that discovery (Purpose). A deep understanding of what it means to be a child, that is, in part, a curious being interested in exploring the mysteries of the world, informs this approach. In order to provide opportunities to explore questions and ideas about the natural world, the teacher recognizes the innate curiosity of the child and makes provisions to allow the child to develop and enact the exploration capability (Purpose).

Ms. Check described a story in which the children in her son's classroom had a theory that there were leprechauns in their room.

> It's not outdoors. This is leprechauns in the classroom, right? They were determined there were leprechauns in the classroom. Without Ms. Jensen planting anything or contributing to it, they found clues in the classroom that indicated to them that there had been leprechauns in there. They spent all day putting these theories together. She's like, "I didn't set anything up. They just did it [laughter]." So then after that, I think we helped plant some stuff in the room. (1.4.48)

In this example, allowing children to explore ideas includes a recognition of both a natural curiosity and a rich imagination. The expression that I have heard many teachers

at Riverdale use to describe this way of thinking is, “honouring the child” or “honouring childhood” (Purpose).

An evaluation of the studied outdoor education approach that provides for opportunities to develop and enact the capability “exploring student-generated questions and ideas about nature”.

Criterion 1. There were many opportunities to develop and enact the capability of exploring student-generated questions and ideas about nature demonstrated in the observation and interview data. The following examples are discussed in the above analysis section (marked with “Frequency”). These include:

- Exploring questions about water insects at the local pond;
- Exploring the behaviour of water insects at the local pond;
- Exploring questions about water insects back in the classroom inspired by the trip to the local pond;
- Exploring ideas and strategies to avoid being stuck in the mud and strategies to help classmates get out of the mud at the local pond;
- Exploring (and voicing) ideas and questions regarding the ethics of keeping pond insects as classroom pets;
- Exploring questions and ideas about soil layers sparked by a dig at the local beach;
- Exploring questions and ideas through direct observation in nature (seeing nature as a library or classroom);
- Exploring and implementing school-wide ideas, such as the litter-less lunch;

- Exploring ideas and questions about lines in nature – what lines do we notice in nature?;
- Exploring questions about fish eggs outside of school;
- Exploring ideas and theories about the presence of leprechauns in the classroom.

Criterion 2. Opportunities for the development and enactment of the capability to explore student-generated questions and ideas about nature are an integral part of the teaching practice in the classrooms observed and the interview data collected. These opportunities are developed regularly and consistently. The rationale for providing opportunities to explore student-generated questions and ideas about nature is central to the teacher's belief that children are naturally inquisitive beings that require opportunities to explore questions and ideas that they have about nature. In the development of a connection and relationship with nature, teachers also provide opportunities for children to explore action-orientated ideas (for example, the litter-less lunch initiative). As a result, the capability to explore student-generated questions and ideas about nature is developed and enacted in an integrative way at appropriate times. The following examples are discussed in the above analysis section (marked with "Integration"). These include:

- Exploring questions about water insects at the local pond;
- Exploring the behaviour of water insects at the local pond;
- Exploring questions about water insects back in the classroom inspired by the trip to the local pond;
- Exploring ideas and strategies to avoid being stuck in the mud and strategies to help classmates get out of the mud at the local pond;

- Exploring (and voicing) ideas and questions regarding the ethics of keeping pond insects as classroom pets;
- Exploring questions and ideas about soil layers sparked by a dig at the local beach;
- Exploring questions and ideas through direct observation in nature (seeing nature as a library or classroom);
- Exploring and implementing school-wide ideas, such as the litter-less lunch;
- Exploring ideas and questions about lines in nature – what lines do we notice in nature?;
- Exploring questions about fish eggs outside of school;
- Exploring ideas and theories about the presence of leprechauns in the classroom.

Criterion 3. All or most of the students observed, or described by participants, were involved in developing and enacting the capability to explore student-generated questions and ideas about nature. The following examples are discussed in the above analysis section (marked with "Participation"). These include:

- Exploring questions about water insects at the local pond;
- Exploring the behaviour of water insects at the local pond;
- Exploring questions about water insects back in the classroom inspired by the trip to the local pond;
- Exploring ideas and strategies to avoid being stuck in the mud and strategies to help classmates get out of the mud at the local pond;
- Exploring (and voicing) ideas and questions regarding the ethics of keeping pond insects as classroom pets;

- Exploring questions and ideas through direct observation in nature (seeing nature as a library or classroom);
- Exploring and implementing school-wide ideas, such as the litter-less lunch;
- Exploring ideas and questions about lines in nature – what lines do we notice in nature?;
- Exploring ideas and theories about the presence of leprechauns in the classroom.

Note: Concerning classroom observations, not all of the students' parents in the classrooms observed signed consent forms. As a result, I was not able to observe and report on all students in the classrooms.

Criterion 4. The opportunities to explore student-generated questions and ideas about nature were substantial, meaningful, deeply engaging, and provided for agentic control. The following examples are discussed in the above analysis section (marked with "Purpose"). These include:

- Exploring questions about water insects at the local pond;
- Exploring the behaviour of water insects at the local pond;
- Exploring questions about water insects back in the classroom inspired by the trip to the local pond;
- Exploring ideas and strategies to avoid being stuck in the mud and strategies to help classmates get out of the mud at the local pond;
- Exploring (and voicing) ideas and questions regarding the ethics of keeping pond insects as classroom pets;
- Exploring questions and ideas about soil layers sparked by a dig at the local beach;

- Exploring questions and ideas through direct observation in nature (seeing nature as a library or classroom);
- Exploring and implementing school-wide ideas, such as the litter-less lunch;
- Exploring ideas and questions about lines in nature – what lines do we notice in nature?;
- Exploring questions about fish eggs outside of school;
- Exploring ideas and theories about the presence of leprechauns in the classroom.

How the studied outdoor education approach provides for opportunities to develop and enact the capability "exploring student-generated questions and ideas about nature". Closely linked to the capability to ask questions about the natural world is the capability to explore student-generated questions and ideas about nature. One naturally leads to the other. Exploring ideas and questions is also clearly linked to *voicing* ideas and questions. The participatory voicing of ideas and questions may surface at any point during the inquiry or action process. In addition, the drive to explore questions and ideas about nature may be motivated by the wonder and curiosity that children have in their encounters with the richness of nature. The overlap among capabilities in the pedagogical approach to provide opportunities for student development has been described on numerous occasions by teachers, parents and the principal during interviews and the focus group meeting, as well as witnessed repeatedly during the observation sessions. Perhaps the reason that the freedom to explore student-generated ideas and questions about nature seems to overlap with the other capabilities to such a significant degree lies in the notions of childhood that are fundamental to the pedagogical approach. As stated in criterion 2, the rationale for providing opportunities to explore ideas and

questions is central to the teachers' belief that children are naturally inquisitive beings that require opportunities to explore questions and ideas that they have about nature. Providing opportunities to explore questions and ideas taps into children's natural curiosity and inquisitiveness. In the development of a connection with nature, teachers also provide opportunities for children to explore action-orientated ideas (for example, the litter-less lunch initiative).

With these overlaps of capability in mind, how does the studied outdoor education approach provide for opportunities to develop and enact the capability "exploring student-generated questions and ideas about nature"? In this pedagogical approach, the freedom to go outside and explore questions and ideas about nature is described by Ms. Carson as student-led and authentic. The decision is not dictated by schedules or routine. As a result, children experience a significant degree of agentic control over the demands of their curiosity. Experiencing a degree of choice and control, as was discussed in the literature review, positively impacts a sense of well-being. For example, Ms. Carson described that the children's wish to explore questions and ideas is sometimes the reason they will decide to go outside:

> And sometimes even it's their inquiry work in the classroom that has driven you to go outside. It's not, "Oh, it's Thursday. We're going outside today," or, "It's this moment. This is what we . . . " - It's - "No, I want to learn about this." Well, where can we go to do that? So, again, giving them power in their choice and in their ideas. Honouring those, too, as best we can. But not when it's minus 45 [laughter]. (1.1.54)

Through the use of nature to explore questions and ideas, children may experience a sense of freedom. The impact of such freedom is arguably one of empowerment. The very fact that students are provided with opportunities to explore their questions indicates that their questions are important. To be recognized in this way is empowering. The

impact of providing opportunities to explore questions and ideas about nature is also described as empowering in the development of skills such as critical thinking, innovative skills, and literacy. The approach makes the development of these skills meaningful, because the capabilities are developed and enacted in an authentic setting: the natural world.

Ms. Baker:

> It builds those critical thinking and those innovation skills. (1.1.64)

Ms. McComb:

> When kids are excited to write about something, they write [laughter]. (1.7.87)

Writing, thinking, creating something drawn from student-generated questions and explorations—to relate this to real-life experiences in nature—can clearly be meaningful and exciting work for children. As well in this approach, the freedom to respond to the demands of curiosity about the natural world is extended to the teacher as well:

Ms. McComb:

> Well, along with being purposeful… it is that the teacher has the flexibility within their framework that they know when an idea is inspired within the room, they are going to go with it. So, if it is something that comes up about frogs and habitats and they're going to the forest, they're going to the pond [instead]. It's not like, "Oh, that's for well next month, we're learning about that." It will be pushed aside. [Instead] it's brought to the forefront as being pretty significant and certainly, [the teachers here] know how to intricately weave in the guidance to help that learning become very rich and meaningful. (1.7.102)

The impact of the outdoor education approach to providing opportunities to explore questions and ideas is also described as positive with regards to children's confidence in themselves and their comfort level with making a mistake. As Ms. Carson described the attitude of the children, "they are so familiar with the experience [of exploring in nature] and the reason behind it that they seem to just embrace it when we go outdoors." (1.1.130)

The way in which the outdoor education approach provides opportunities to explore questions and ideas includes cultivating an environment in which children trust teachers to support them in their endeavours, struggles, mistakes, as well as in the excitement of their explorations. This type of environment helps children feel cared for, supported, and valued. While this supportive attitude may certainly also be present within the walls of a classroom, supporting opportunities for the development and enactment of the capability to explore questions and ideas, particularly with regards to nature, is intuitively more authentic if explored first-hand in nature. In order to explore questions and ideas about a farm, for instance, going outside to the farm to explore those questions and ideas is arguably more engaging then reading about it in a classroom.

Mr. Check described the benefit of having opportunities and freedom to explore questions and ideas in his retelling of a nature adventure story that involved an exploration of options when faced with a real-life problem:

> I would say [the development of] analytical thinking [is a benefit to the children], which you could then break down to problem-solving - for example . . . I saw on Twitter, one of the classrooms last year, they were out doing one of their nature explorations, which they do a lot up here. And they hadn't planned for the fact that there was water in the ditch for where they wanted to go. So they had to figure out how to build a bridge to get across to go where they wanted to go. So when they do that, that problem solving outside as opposed to just talking about how you're going to do it, then I think that would lead to [the development of problem-solving] as well. (1.4.8)

Mr. Check described the transition their son, David, experienced as he first entered the school.

> Most of his experiences had been so structured that it was pretty foreign [when David first came to the school]. (1.4.60)

Mr. and Ms. Check went on to describe the opportunities that Ms. Jensen provides her students to explore ideas and questions and the resulting impact.

Ms. Check:

> I think a lot of Ms. Jensen's day is just that, freedom, where they have choice. [David] has found confidence in his learning because he doesn't have to fit a certain mold, right? Whether it's indoor or outdoor, he finds something he's passionate about and he can do it . . . because he can write about the leprechauns, or the fish, or whatever makes sense. So his confidence just grows. (1.4.68)
>
> I'm a teacher, so seeing my kid flourish . . . and I don't know if he would have done this well in kindergarten had he had to sit in a class. I can tell you he would not have done as well. He cries when school cancels because of bad weather [laughter]. (1.4.67)

Most children, especially at the primary level, need to move and are not well-equipped to "sit in a class" all day (Kohl & Cook, 2013).

Ms. Carson describes a weaving-in-and-out-of-confidence during opportunities that allow for growth and development. Sometimes there is a misstep and help is needed from the teacher, but such "weaving-in-and-out" opportunities are necessary for growth. (2.5.12) A near universal truth that I have observed, if there ever was one, is that teachers and administrators have an obsessive concern for the safety of the children under their care. As a parent, I take comfort in this obsession. However, there exists a risk that this concern may escalate to a level that is ultimately a hindrance to child development. For example, a parent who encourages their children to stay indoors during the cold part of the winter for fear that the children may be exposed to frostbite or worse, may have the best of intentions for the safety of those children. However, since the cold part of winter in Winnipeg may last anywhere from two to four months, this kind of "imprisonment" could potentially have a negative effect on the children's physical and mental health, as well as a possible detrimental effect on their appreciation for the outdoors in winter, as in, winter is something to be avoided and waited out. (It should also be mentioned that winter gear, should a person be in a position to access or afford it, makes it possible for children to comfortably play, for at least a short time, in the outdoors even on the coldest

of days). Seen in this light, denying children the freedom to explore, and by extension play, in the outdoors may have a negative impact on their physical and mental well-being.

In addition to natural curiosity and creative ability, Ms. Carson notes that anyone who spends anytime around children will recognize that children need to move. Children cannot be reasonably expected to sit in a classroom all day. Ms. Carson has also observed that the children who struggle most with sitting still for long periods are completely transformed when they are outside; they are in their element and their mood lifts. (2.5.22)

Ms. Carson also described teaching in nature as having the impact of a "great equalizer." In the outdoors, children who struggle with literacy or numeracy may have opportunities to demonstrate other skills, knowledge, and strengths. (2.5.13) The other children also may see them in a new light, further bolstering the confidence of children who have trouble sitting for long periods.

This pedagogical approach provides opportunities to go into nature and also affords extra chances for movement. The teachers describe a characteristic that they have observed in children, namely, to be a child is to want to move. This attunement to childhood has a substantial effect.

During the boots-stuck-in-the-mud "emergencies," described in the observational example at the start of this section, some of the children tried to take on a caring role in their efforts to either help or guide their peers in strategies to get themselves out of the mud or prevent themselves from getting stuck in the mud in the first place. This is an example of an experience in nature that is not planned ahead of time by the teacher, but that the teacher recognizes in the moment as positive and seizes on as an opportunity for growth, in this case, an opportunity presents itself for a child to help a friend.

In this pedagogical approach, Ms. Carson is alive to these types of opportunities that offer themselves up in nature. Life outside of the classroom is certainly more unpredictable. While Ms. Carson always ventured out-of-doors with a plan - anticipating, preparing for and mitigating any possible risks - she also kept a watchful and open mind with regards to the children's responses and queries in what they encounter. This approach allows for opportunities for children to explore questions and ideas that they have about nature. I have also observed this openness in other classes at Riverdale, as well as during interviews with parents and teachers in their descriptions of teachers' openness to "educative moments."

Ms. Carson described being keenly aware of the fact that she cannot compete with the brilliance of a bald eagle soaring overhead, even if she is on the cusp of making an important point. In these moments, Ms. Carson patiently stops, and then models and reflects the excitement and wonder that the children experience in these moments. In the case above, in the children's encounter with a blue jay and a robin, Ms. Carson herself modeled the sense of wonder. Ms. Carson described to me later the importance of modeling an appreciation and wonder for the big and little moments that can be observed on a nature walk. Ms. Carson also talked about the importance of being flexible and responsive to educative moments, especially moments that lend themselves to feelings of appreciation and wonder in the natural world and the opportunities that these moments bring for asking and exploring questions. A sense of wonder appears to be a significant factor in the desire to explore questions and ideas about the world. Again, this sense of wonder and curiosity, and the opportunity for the questions that they afford, is more easily available when children are taken into nature.

In separate interviews, both Ms. Jensen and Ms. Carson referenced the sentiment of Baba Dioum's famous quote, "In the end we will conserve only what we love; we will love only what we understand; and we will understand only what we are taught" and perhaps, what we long to explore (Mellichamp, 2013, p. 163). The impact of providing opportunities to ask and explore questions and ideas about nature for children may inspire a life of meaningful action towards the evolution of an ecologically sound culture.

Capability 4: To Appreciate and Care for Nature

> **Observational examples: Close encounters with bees, spiders, and ants.** On the return journey from the garden planning a few weeks earlier, Ms. Carson led the children around the school a different way to the side entrance, during which the children noticed some bees had landed on a collection of dandelions. This type of encounter of recognizing an opportunity to stop and allow the children to experience wonder would repeat itself many times during my visits. In a moment such as this, when the lunch bell was about to sound, I would imagine Ms. Carson would be eager to get the children back to the classroom. Instead, she took notice of the children's wonder and encouraged them to look closely. Not long after, the children noticed a spider's web dangling between a honeysuckle tree. Some of the children were concerned about destroying the web and directed Ms. Carson and the rest of class back and then around the other side of the tree and out of harm's way. Ms. Carson smiled as she watched this intervention on behalf of the spider and her web. (2.3.13)
>
> As I would come to know Ms. Carson's approach to providing opportunities for caring for and appreciating nature, I would see a version of this scenario played out a number of times. In my observations, what came across clearly to me was the fact that Ms. Carson truly cares for and deeply empathizes with the children and what it means to be a child – this is true in their encounters with nature and in other situations as well. Love models kindness is how Ms. Carson puts it. (2.5.7)
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> In addition to Ms. Carson's grade 1/2 classroom, I also observed two kindergarten classes. Over the year, these two classes would often get together when going outside on "nature adventures." On one afternoon, the two teachers, Ms. Berry and Ms. Jensen, invited the children over to the carpet, introduced me, and the activity for the afternoon. The eagerness to escape to the outdoors was hard to miss. The room seemed to vibrate with the energy and restlessness of the children. I was amazed by the teachers' ability to hold the attention of these 5 and 6 year-old children, and explain the upcoming activity. I noticed a number of children eyeing up the wonder wagon parked by the door, whispering to their friends and pointing to the wagon. Ms. Jensen told the children that they would be

going out to the tennis court area. There they would have a choice of two activities. The children could either explore the area for plants, bugs, caterpillars, and other creatures (with the help of the tools from the wonder wagon – magnifying glasses, small viewing containers, reference books, etc.), or they could engage in clay making, representing some of the plants and animals in the area (Ms. Jensen took a moment to review the "Barbara Reid" technique that they had previously tried out which involves using plasticine to make pictures). The children quietly walked to the back exit doors, and then, as the tennis courts were in view, the teachers allowed the children to run if they wished. Most took their teachers up on this and ran off in glee, whooping it up. Shortly after the rest of us began walking towards the tennis courts with the wonder wagon in tow, one of the students came racing back, very excited. "Ms. Jensen, come quick! Come and see this!" Without hesitation, Ms. Jensen broke into a full-out run, following the excited child towards her discovery.

To a tennis player, the cracks in the old tennis courts, with weeds pushing through, would be a sad sight. To this group of kindergarten children, it represented a whole world to explore. Many small bugs and caterpillars could be found here among the plants in the cracks, but especially ants. The children's excitement was through the roof as they sleuthed around the courts to find, capture, and observe these little creatures. I also noticed in both teachers a reflecting back of this excitement as the children shared what they hand found. Both Ms. Jensen and Ms. Berry were quite enthusiastic about the children's discoveries, as they listened and sometimes encouraged the children in their adventure. There was a group of seven children in particular who were yelping in delight at the discovery of a cluster of very small bugs that they had never seen before. Ms. Berry was caught up in the excitement and asked the children, if they wanted to know what the bug was - where could they find something like that out? Instantly one of the kids ran to the wonder wagon and returned with a small reference book. They soon discovered, with a bit of help, that these were most likely clover mites.

Looking around the tennis courts, I noticed that every single child was very actively involved in looking for bugs. At the exact opposite end of the tennis court, a single boy began yelling a word over and over in a voice so loud I was amazed that it came from a five year-old child. The word was - ANT! ANT! ANT! The children, closest to me, immediately went running with their magnifying glasses in hand.

As I scanned the tennis courts, I noticed too that no child was on their own in their search. All of the children were either paired or grouped with others as they explored. I wondered if there was a kind of contagious aspect to the joy I was witnessing as the children observed these ants. I also noticed that when I walked over to the group who had chosen the clay-modeling outdoor station, just outside of the tennis courts on a giant blanket strewn across the grass, that the gender division was similar, that is, a fairly even split of boys and girls, to what I observed on the tennis courts. The children involved in clay-making appeared to be quite focused on their craft, despite the whoops and hollers of their nearby classmates. The distinction between the two groups was striking, the clay-makers

appeared to be in a type of quiet flow. When I asked a couple of them to tell me about what they were doing, they seemed to be oblivious, as with the yelps from the tennis court, to outside distractions their focus was so intent. The group on the tennis court, by contrast, seemed to be encompassed by one dominant feeling, pure joy and excitement. “We found a baby ant!” came one holler. Many of the children came running to see.

As we walked back to the school, I discussed with Ms. Berry and Ms. Jensen the high level of excitement among the children that I had witnessed and how I also saw this in the two of them. Ms. Jensen talked about seeing all the little wonders of nature through the eyes of a child to be a joy and a reawakening. Ms. Jensen also described some of the children who appeared shy in an indoor setting often become quite extroverted in this kind of outdoor adventure setting. (2.4.1 - 2.4.5)

Two weeks later, as the children gathered on the carpet, Ms. Berry asked everyone to describe their mission today. The class had received an ant colony container for the classroom and had managed to find a queen ant on an exploration on the previous day. Today’s mission, as the children explained, was to find 20-30 ants to join the lonely queen. The best place to find ants was, of course, the “reclaimed-by-nature” tennis courts. As in previous nature adventures, the children also had the option of participating in clay modelling. As all of this was being explained, I observed that many of the children were in less of a sitting mode and more of a runner’s start mode. To say they were excited would be an understatement; the children were absolutely ecstatic. Ms. Berry asked the children to line up quietly, as she patiently waited until they were quiet enough to lead them through the hallways to exit the school.

As we left the school, there seemed to be a collective sigh of relief. This was Friday afternoon in kindergarten. The children had been trying their best to observe “proper” classroom behaviour – indoor voices, sitting nicely, etc. But now that the children were outside, all of that suppressed energy could now be released. The children tore across the field towards the tennis courts, howling like banshees. The children in charge of pulling the wonder wagon broke into a gallop and nearly lost control as they careened down the sloped sidewalk outside the back door. “Carefully, carefully,” called out Ms. Berry.

The scene at the tennis courts was one of sheer joy. The children scrambled around with magnifying glasses and small jars. Some were intent on first creating a suitable, temporary habitat for the ants before trying to find any. Others dove right into the hunt, “Found one! I need a jar!”

Ms. Berry, as I had observed in the classroom, used such opportunities to build on the child’s problem-solving skills. “OK, where do you think you can find one?”

A parent volunteer and one of the children came running over. “Show Ms. Berry the ant you found – it’s the one from our bug book.”

“Wow! Very exciting!”

Another child roared as she came running from the other side of the tennis court, “I got an ant! I got an ant!”

> "Now you just have to get it into the container," Ms. Berry said, "OK, now how are you going to get that ant into the container? What can you do?"
> The children found a piece of paper to scoop up the ant – Ms. Berry commented on their "good teamwork."
>
> As I had observed before, the children all seemed to be working in small groups or with partners. The nature of their mission lent itself to working together, and the children engaged in this collaborative work with a determined focus and great energy. Towards the end of the afternoon, I commented to Ms. Berry, "The kids are really excited to be doing this, eh?" Ms. Berry replied jokingly, "Yes they are, but now the problem is - how are we going to get them back inside?" (2.7.1 - 2.7.7)

Analysis: Opportunities to develop and enact the capability of appreciating and caring for nature. In the above examples, the students were provided with many opportunities to develop and enact the capability of appreciating and caring for nature. (Frequency) All of the teachers observed integrated opportunities to develop and enact this capability into planned and unplanned events (Integration). In the case of Ms. Carson and her students' "close encounter with bees and spiders" – an unplanned event on the walk back to the school – the opportunity was made available in two ways. First of all, it was made by a classroom culture of respect. Ms. Carson and the other teachers at Riverdale have fostered in their classrooms a culture of respect and caring towards nature (Integration). For example, a child at Riverdale upon discovering a large beetle will more likely say something like, "Wow, check this out!" instead of, "Eew, gross!" (Appreciation). Similarly, a child from Riverdale would be more likely to ensure that the beetle is able to safely cross the sidewalk without being accidentally stepped on than instead to stomp the life out of the little critter (Care).

Secondly, as with the development and enactment of other capabilities, such as asking questions, teachers are flexible and open to unplanned opportunities. When these opportunities arise, the teacher does not stand in the way. If the child wishes to stop and

appreciate a flower (stop and smell the roses), or care for a beetle as it crosses a busy sidewalk, the teacher recognizes the opportunity. The teacher may reflect the child's care and appreciation, call other children over, or sometimes simply just allow the child to enjoy the moment, or act of care, themselves. In the "encounter with bees and spiders" event, Ms. Carson recognized an opportunity for the authentic development of the capability to appreciate nature when she witnessed the children stopping to observe the bees hovering among the dandelions (Purpose). Ms. Carson recognized an opportunity for the authentic development of the capability to care for nature when she complied with the children's orders for her and the class to turn back and go the other way around the tree in order the protect the spider's web from harm (Purpose).

Over the observation sessions I spent with Ms. Carson and the other teachers, I would see these moments, these unplanned but recognized opportunities, repeat themselves many times (Frequency). In this case, most of the children observed engaged in the enactment of the capability to appreciate nature (they stopped to appreciate the bees), and all of the children engaged in the enactment of the capability to care for nature (they willingly submitted to the requests/demands to walk the other way around the tree to avoid damaging the spider's web) (Participation). Finally, the close encounters with bees and spiders were both unplanned events; the engagement in the appreciation and care for nature was solely the choice of the children. The conditions for this engagement, as described above, were orchestrated by the teacher, but the decision to enact the capability was child-driven (Purpose).

The second case, "close encounters with ants," is an example of a planned opportunity, namely, the opportunity to appreciate and closely observe ants (as they were

collected in clear containers), as well as care for them in the careful handling and subsequent release to their natural habitat (an old tennis court!). It is difficult to capture in words the great level of excitement and joy that I witnessed among the children during this observation (Purpose). All of the children on the courts were thoroughly engaged in the development and enactment of the capability of appreciating and caring for nature (Participation; Purpose). (I suspect they also enjoyed the challenge of finding and carefully "capturing" the ants). Some of the students chose to create suitable temporary environments in the containers that held the ants (Care). Others chose to find other types of insects and to try to identify and learn about them with reference books in the wonder wagon (Appreciation). Students also had the option of engaging in a clay-making representation of local plants and animals (Appreciation). The choice over what to do and how to do it – whether it was clay-making or appreciating and caring for insects – was with the children (Purpose).

Ms. Carson described a practice in which the children express gratitude towards the Earth when leaving a visited site, in this case, the nearby "forest':

> So for them, going into, I mean, we do call it a forest, it's not particularly a forest, but it's a wooded area. But going into that, it's a space that when we get there, we have a meeting circle. When we leave, we show our gratitude towards the Earth. So that becomes such a big part of what we're doing too. (1.1.17)

The gratitude practice represents an authentic opportunity for children to develop the capability to appreciate nature (Purpose). After spending time at a natural site, exploring and enjoying the space, the children have the opportunity to recognize and express their appreciation (Purpose). The practice is voluntary: the times I observed the practice, all the children appeared to willingly and solemnly participate (Participation; Purpose).

Another teacher, addressing Ms. Carson, commented on a birdseed feeder to care for "animals in our community."

> Well, one of your [students] today… they said, "Oh… do you remember when we put [out] the birdseed feeders?" We made birdseed feeders and put them out in the winter to help our animals in our community. And he said, "Can we go and check because remember we saw some deer prints, and we need to go check and see if we need to put more food out." (1.1.209)

Here we see an authentic expression of the capability of care for nature, not only in the original, meaningful, activity of creating a birdseed feeder, but in also the child's expression of concern that the feeders may be cleaned out (Purpose).

Ms. Carson described an awareness exercise used to provide the children an opportunity to appreciate nature.

> It's an awareness, though, that we've worked to build for [the children] too, to be able to see that when you are out in nature if you're just still, and you just be. Quite often, when we get to the forest that is our first [thing we do] when we meet in the circle. It's just silence, to just pause, and just listen. Until a car drives by [laughter]. (1.1.266)

The experiential nature of many of the practices and activities that Ms. Carson and her colleagues and their students engage in represent substantial and meaningful examples of opportunities to appreciate and care for nature (Frequency; Purpose).

Ms. Jensen described the use of the wonder wagon for providing opportunities for the development and enactment of the capability of appreciating nature (Frequency).

> Each classroom has a wagon equipped with anything needed to go out into nature and make discoveries, buckets for gathering water or magnifying glasses. It depends [what we're doing]. And we've also equipped them with books that are all about bugs and birds and trees that they can use when they're out there. If they find a leaf that they wonder about they go to the little book, and they find the leaf that matches and they find out for themselves what kind of tree it is based on the characteristics of the leaf they're looking at, and the same with bugs. What else is in there? We have butterfly nets, but we take out different things at

> different times. But a lot of it too is we don't necessarily always have an exact plan. We sometimes do, but then sometimes we don't so that when they do get out there, they're still left open to wander. We haven't told them exactly how to think or what to think, so they go out there and follow their own interests sometimes and use what's in the wagon. (1.3.40)
>
> We roll it out a little different, too, at the beginning of the year. We're more specific about how it looks to use the items in your wonder wagon, right? There's a little bit of teaching about how to be respectful with the materials, or what we use them for. We model that where they pick up on it and then we see them using it in that way outdoors. So as the year goes on some days we go out, and we're investigating nature at this time of the year. So the other day we went out with our wagon to the old tennis court that's overgrown in our yard, and then I kind of wondered, "Well, what are they going to find? Oh, I hope there's something." And then when I got up there actually I noticed that somebody had gone and pulled out all the weeds out of the cracks in the old tennis court. And I thought, "Oh no, this is going to be just an absolute mess. We're not going to have anything to look at." Those kids spent probably 45 minutes so engaged without being distracted by anything, looking at different things. We had some finding moss in the cracks. Some were counting bugs as they put them in the bug catcher. Others found little vines coiled up on the link fence that it's enclosed in. You counted. There were just different things going on everywhere. And then some were picking up litter - decided that there was too much garbage around the outskirts and they were going to save teacher that day, which a whole other inquiry has come about from. So that's what one little adventure with the wonder wagon looked like. (1.3.41)

During the nature adventures with the wonder wagon, children are provided with substantial opportunities in which they have control over what to focus on, observe, and appreciate in nature (Purpose). All or most of the children were reportedly engaged for 45 minutes, "without being distracted by anything" (Purpose).

The opportunities to enact a capability, such as care for nature, that are most clearly under the child's agentic control are the instances when the idea to act in a caring way comes solely from the child (Purpose):

> I think that connects back to the discussion that we were having about the going out during their free recess choice time and their choosing to clean up garbage because they care for the earth and they see that's not the way that we should be treating it. (1.3.236)

Collecting litter is a concrete and age-appropriate way in which children may express care for animals and nature. Mr. and Ms. Check also describe their son, David's, eagerness to ensure that, "No animals will die on his watch" (Purpose).

Ms. Check:

> He's been very focused on garbage lately outside and litter. That's been his focus. (1.4.17)

Mr. Check:

> No animals are going to die on his watch picking up the garbage. (1.4.18)

Ms. Orr, from her perspective as a parent volunteer, described appreciation and care in terms of the development of an understanding. She described substantial opportunities to develop this understanding in a nature adventure at the pond (Purpose).

Ms. Orr:

> Well, there's understanding about nature but there's also understanding that you can enjoy it. When we were at the pond today, they enjoyed it. They picked the snails, but then they understood that they had to release them back, so that's another part of the understanding. Rather than just understanding about the nature itself, that we can enjoy it, but you have to kind of leave it where it comes from, too. (1.6.4)

Ms. Orr goes on to describe the innate appreciation and affection that we all may possess, providing examples from that particular day of Ms. Carson's children "blowing the little white seeds of dandelions" and observing the gratitude practice by the pond:

> So, I think sometimes kids can get an affection from outside. It's a different kind of affection than you get from your parents. (1.6.107)
>
> It's, you see a butterfly and you fall in love with it because it looks pretty, right? Or you find a seashell that's closed and, oh, you just love it because it's a mystery on the inside. Is there a pearl in there? (1.6.109)

The opportunities here to develop and enact appreciation and affection for nature are described as meaningful and compelling (Purpose).

Mr. and Ms. Nodding's son, David, described a few examples of enacting the capability to appreciate and care for nature. "When I was at school on Monday, sometimes I find garbage and sometimes I put the garbage in the garbage can." (1.8.66) "And one time I found an elastic on the road, and I picked it up." (1.8.74) "What if a bird found it on the road and tried to eat it?" (1.8.83)

Again, these actions by David, as described by his parents, are extensions of the opportunities provided at school to care for nature (in addition to the opportunities that family and community also provide, as is the case with all of the capabilities). This act of care is voluntarily, and eagerly taken up by David on his own time because he sees the work as meaningful (Purpose).

Charlie also described one of his efforts to care for wild birds in his yard, "Usually, around the house I do lots of things to help nature. One time I saw a nest that was blown down, and so I grabbed lots of mud and I put grass on it, and I left it there, and eventually I saw birds coming near it." (1.9.16)

It is important to recognize the significance in a child taking action, however big or small, in the care and appreciation of animals. Charlie's action here was completely autonomous and clearly stemming from a genuine concern for the neighbourhood birds and their home. For Charlie and David, their actions were meaningful and self-directed (Purpose).

This outdoor education approach is described by teachers and parents as having a positive impact on the children's well-being in the school and at home. Based on the premise that people have a fundamental human need for affection (in this case an

affection in our relationship to the natural world), it is important for teachers to provide opportunities to develop and enact an appreciation and care for nature.

An evaluation of the studied outdoor education approach that provides for opportunities to develop and enact the capability "appreciating and caring for nature".

Criterion 1. There were many opportunities to develop and enact the capability of appreciating and caring for nature demonstrated in the observation and interview data. The following examples are discussed in the above analysis section (marked with "Frequency"). These include:

- Appreciating bees and caring for spiders (Close Encounters with Bees and Spiders);
- Appreciating and caring for ants and other insects (Close Encounters with Ants);
- Appreciating a natural space through the "gratitude practice';
- Caring for animals through the creation and maintenance of a birdseed feeder;
- Appreciating nature through an awareness exercise;
- Appreciating nature with the tools in the "wonder wagon';
- Caring for nature through the removal of litter from natural habitats;
- Appreciating and caring for snails during the nature adventure to the pond;
- Caring for animals in the neighbourhood through the removal of litter;
- Caring for wild birds in a student's backyard through the repair and replacement of a broken nest.

Criterion 2. Opportunities for the development and enactment of the capability to appreciate and care for nature are an integral part of the teaching practice in the classrooms observed and the interview data collected. These opportunities are developed regularly and consistently. The rationale for providing opportunities to appreciate and care for nature is central to the teachers' belief that the care and appreciation of nature is an important aspect of living in balance with nature and healthy child development. As such, opportunities for the development and enactment of the capability to appreciate and care for nature are planned for in an integrative manner. The teachers also watched for unplanned opportunities to appreciate and care for nature in outdoor settings. The following examples are discussed in the above analysis section (marked with "Integration"). These include:

- Appreciating bees and caring for spiders (Close Encounters with Bees and Spiders);
- Appreciating and caring for ants and other insects (Close Encounters with Ants);
- Appreciating a natural space through the "gratitude practice';
- Caring for animals through the creation and maintenance of a birdseed feeder;
- Appreciating nature through an awareness exercise;
- Appreciating nature with the tools in the "wonder wagon';
- Caring for nature through the removal of litter from natural habitats;
- Appreciating and caring for snails during the nature adventure to the pond;
- Caring for animals in the neighbourhood through the removal of litter;
- Caring for wild birds in a student's backyard through the repair and replacement of a broken nest.

Criterion 3. All or most of the observed students were involved in developing and enacting the capability to appreciate and care for nature. The following examples are discussed in the above analysis section (marked with "Participation"). These include:

- Appreciating bees and caring for spiders (Close Encounters with Bees and Spiders);
- Appreciating and caring for ants and other insects (Close Encounters with Ants);
- Appreciating a natural space through the "gratitude practice';
- Appreciating nature through an awareness exercise;
- Appreciating nature with the tools in the "wonder wagon';
- Appreciating and caring for snails during the nature adventure to the pond.

Note: Concerning classroom observations, not all of the students' parents in the classrooms observed signed consent forms. As a result, I was not able to observe and report on all students in the classrooms.

Criterion 4. The opportunities to appreciate and care for nature were substantial, meaningful, deeply engaging, and provided for agentic control. The following examples are discussed in the above analysis section (marked with "Purpose"). These include:

- Appreciating bees and caring for spiders (Close Encounters with Bees and Spiders);
- Appreciating and caring for ants and other insects (Close Encounters with Ants);
- Appreciating a natural space through the "gratitude practice';
- Caring for animals through the creation and maintenance of a birdseed feeder;
- Appreciating nature through an awareness exercise;
- Appreciating nature with the tools in the "wonder wagon';

- Caring for nature through the removal of litter from natural habitats;
- Appreciating and caring for snails during the nature adventure to the pond;
- Caring for animals in the neighbourhood through the removal of litter;
- Caring for wild birds in a student's backyard through the repair and replacement of a broken nest.

How the studied outdoor education approach provides for opportunities to develop and enact the capability "appreciating and caring for nature". Participants describe appreciation and care stemming from the development of empathy. The question, how does the outdoor education approach provide opportunities to develop and enact the capability "appreciating and caring for nature" may be extended to include the development and enactment of the capability to experience empathy. Children may develop and enact an appreciation and care for nature through the teachers' guidance and modelling in helping the children empathize with their classmates and with animals encountered in the outdoors and in the classroom.

Ms. Jensen:

> …you're appreciating everybody's contributions and everybody for who they are. Because we do that in our classrooms so much, too. I think that's one of the most important ones for me of all… because you need that culture of caring and kindness with nature and with each other. (1.3.70)

This approach is described as having a profound impact on the well-being of the children in the way they relate to each other and the elements of nature that they encounter. Two parents described the modelling and value of kindness and care and the effect it has on the children.

Ms. DeAngelis:

> I've seen such a gentleness from the teachers, they're kind of the example of authority to the kids and the way they're, they are all gentle and affectionate. And that's going to teach the kids to act in that way too, instead of more like, "I'm the boss. What I say goes. You listen to me. End of discussion." That's kind of more traditional. (1.5.121)

Ms. Anderson:

> Kind of like seeing the value [of a caring approach]. [The teachers] definitely do that. They see the value. (1.5.123)

Ms. Berry offered an example of the way appreciation for nature may be modelled:

> What pops into my head is even just like, sometimes when I get a class, and it's one of our first visits out, they see a spider because it's in the fall, and some kids scream, "Ahh! Spider!" And then I always model going down low and being, "Oh my goodness! Look at it!" And showing them how I'm appreciating it and then just kind of adding, "What do spiders do? And why are they so important?" And then you notice even as moments go on and as days go on, they're even just not afraid anymore, and they're appreciating it without even being fearful of it. And that goes with other things in nature like the mud that we get stuck in when we go on great adventures. It's like, look at how much fun this is, and you hear the sounds of the mud. So that's appreciation. (1.3.72)

Ms. Jensen described the modelling of care and kindness as including the outdoors, family, and classmates:

> It's a strategy really. It's a strategy to model kindness. It's a strategy to model affection for the outdoors and the affection for each other as well in the family and in the classroom. (1.375)

Opportunities to develop and enact the capability to appreciate and care for nature are also provided through a gratitude practice. Before leaving a natural site, such as a pond or forest, the students take a moment to offer gratitude to the land through a silent reflection. Children may develop the capability to appreciate nature through awareness activities, such as the one in which, upon arrival at their destination in the forest, children sit and simply listen in silence to the sounds of the birds, leaves, wind, and so on.

Opportunities to develop the capability for appreciating nature may also be provided through resources such as the wonder wagon. The wonder wagon consists of many tools for examining life, such as magnifying glasses and clear containers, field guides to identify insects, mammals, birds, and plant life, as well as artistic materials, such as paper, pencils, crayons, paints, paintbrushes, clay, and plasticine, for capturing and appreciating the beauty that is encountered. The wonder wagon is brought along on outdoor adventures for the students to explore and appreciate nature. The students are given choice over how to engage in these explorations and what tools to use. At the beginning of the year, as well as throughout the year when necessary, teachers spend time facilitating discussions around caring and respectful engagement in the outdoors that will cause the least amount of harm to the natural environment that is being explored. Crucially, ideas such as, “Don’t harm the animals or their habitat,” come from the students through skillful teacher facilitation. The teacher, and later the students, model the capability of care and appreciation for the plants and animals discovered on their outdoor adventures.

Care and appreciation for nature will sometimes lead to student-initiated action, such as litter patrols. These actions, whatever they may be, were again student-generated and supported by teachers through, facilitated discussion, help with planning, and dealing with logistical concerns.

This outdoor education approach provides the opportunities to develop and enact the capability, appreciating and caring for nature by using elements of nature to develop empathy. Children may also develop empathy through the modelling of empathy by the teacher and fellow students. Through the development of empathy, appreciating and

caring for animals in the classroom and in the outdoors is also closely linked to the appreciation and care that the children experience in the classroom. Children are also provided opportunities to develop enact appreciation and care for nature through a gratitude practice, awareness activities, and the use of resources such as those found in the wonder wagon. Finally, through the development of care and appreciation for nature, teachers are open and responsive to student ideas and calls for action in the students' efforts to care and appreciate the natural world.

Capability 5: To Experience a Connection to Nature

> **Observational example: "If your heart feels love in nature, you feel love in nature."** I entered Ms. Carson's room after the morning recess to find the children all gathered on the carpet. Ms. Carson was sharing a tweet sent to them by a student teacher that had spent her practicum block with Ms. Carson and her children. The tweet was displayed on the smart board. The tweet from the student teacher read, "I LOVED seeing your photos from the zoo! What was the best part?" Ms. Carson asked the children to consider this question and wrote/tweeted a number of responses back to the student teacher with the children's responses as they shared them.
>
> Ms. Carson told the children that as we approach the end of the year, it's nice to think back on some of our adventures and accomplishments. Ms. Carson began by enthusiastically announcing the publication of "The School of Fairy Tales and Wonder!" book written by the class. This was a culmination of the students creating a physical representation of a fairy tale world, in conjunction with time spent reading, exploring, and discussing fairy tales. The project was a collaborative effort through various periods of writing and negotiating the storyline among the children. This negotiation involved the children's understanding and experience with the fairy tales that they had been reading and the structure and arc of what makes up such a story. The students had been invited to individually represent one page of the story in the form of an illustration of their choice and making. She shared the book with the class, much to their delight. Ms. Carson also shared the Adventure Guide, authored earlier in the year by the students.
>
> As Ms. Carson read these books, the children listened attentively and offered their comments, especially when the page they illustrated was read. Sometimes the children asked questions while the child illustrators of the page responded to their questions.

Ms. Carson next shared what she called her all-time favourite children's picture book called, "Explorers of the Wild" by Cale Atkinson. This was a book, Ms. Carson reminded the children, that she had read to them at the beginning of the year because it's a book about what it means to be a kid, that is, an explorer. Explorers of the Wild is a story of a boy who meets a bear in the forest who is also an explorer. It's a story of the joy of exploring the natural world and all it has to offer.

Ms. Carson told the children, "As we think back on the seasons and all of our outdoor adventures [she gestures towards the bulletin board with many seasonal works of art by the children] I would like you to think about all of our outdoor adventures, write something and draw a picture that shows how these adventures made you feel. First of all, what were some of the adventures that we went on?" The children began recalling trips to local sites, most of them very close to the school, the many adventures at the pond, the forest, the school gardens and greenhouse, and also some trips to places like the local lake for a shoreline cleanup and the Winnipeg Zoo. Ms. Carson asked the children how these adventures made them feel. One student called out, "Joy!" Another a student roared, "Exciting!" One very animated child said in a sing-song voice, "It made you feel love."

"When we go on a nature adventure it makes my heart beat so fast!" exclaimed one student as he tucked his fists under his chin.
There was a rare pause as we all considered this, until one student very quietly said, "If your heart feels love in nature, you feel love in nature."

Ms. Carson smiled widely and, expressing her excitement, said, "We should tweet that one out because I think it perfectly captures what many of you are saying." The quoted child was visibly pleased with the recognition and seemed intent on thinking up another tweetable thought as the rest of the children began moving to their tables to begin the artistic work of representing their feelings about their nature adventures. Ms. Carson began circulating around the room as this child tugged on Ms. Carson's blouse and said, "When we go out in nature, it makes my heart better." Ms. Carson smiled down at the child, gave her a hug, and said something quietly in response.

As the children worked on this project, Ms. Carson provided a model representation through her own drawing. Ms. Carson once again demonstrated her understanding of her students in the time she spent with those who needed the most support in this task.

After the children finished their representations, and the materials were gathered up and put away, Ms. Carson invited the group back over to the carpet and began reading and sharing what the children had created, describing each of the drawings. "The waves make me feel love." Ms. Carson described each drawing with reverence and enthusiasm. She had spent part of the previous work period circulating around the room and talking with the children about their representations, so she knew well how to accurately interpret them. Ms. Carson invited the child to the front to share her representation of the tweeted expression, "If your heart feels love in nature, you feel love in nature." The child had decided to make it into a song. She sung it out proudly, as she swayed back and forth in

> front of the class. The children all listened respectfully and clapped loudly at the end. As the child looked back out at the eager applause, she smiled and sighed in delight. (2.8.1 - 2.8.12)

Analysis: Opportunities to develop and enact the capability of experiencing a connection to nature. In the above example, the students were provided with an opportunity to develop and enact the capability of experiencing a connection to nature through the recollection of feelings they experienced when in nature (Frequency). The children were first asked to recall the nature adventures and field trips that they had embarked upon in the past year and then to consider how those experiences in nature made them feel. After the discussion, the children were invited to represent those feelings in words and pictures. This example presents a substantial opportunity as the children were invited to reflect on real and meaningful experiences that they had over the course of the year (Purpose). Each child was encouraged to reflect upon the feelings that being in nature conjured up, representing the connections that they felt with nature on each of the many nature adventures (Frequency; Integration; Purpose). All of the children observed were deeply involved in the enactment of the capability (Participation).

The children are described as experiencing a connection to nature in the way that they see themselves. Having a connection to nature, recognizing that nature is a part of us, for the children, means adapting an identity that reflects that connection. That identity as a person who is connected to nature leads to action. Ms. Carson and her colleagues explain the student's perception of themselves with descriptors such as, "nature explorers" (1.1.88), "citizens of the Earth" and "mini-environmentalists" (1.1.89). Ms. Carson also provided a specific example of an opportunity taken by children to enact a connection to nature.

> . . . they got talking about how there's too much garbage in the world and that there's garbage everywhere and they wanted to do something about it. So they would take bags out at recess and collect garbage on the playground. They would choose to do that. And they came back in one day and they wanted to find a way to fix [this problem]. So I suggested using a coffee can as our garbage can one day to see how much garbage there was going to be. And one little girl suggested, "We should challenge the whole school to do it." She came up with that herself. And I remember - I didn't ever write it down, but one little boy said, "I love nature so much. We have to do something about it." And I think without us going out and doing these things, they wouldn't care so deeply about it. You have to know nature to care about it. (1.362)

Here we see a strong overlap with the capability *to appreciate and care for nature*. When a child deeply appreciates and cares for nature a connection between the child and nature is formed. The child sees themself as a person who is connected to nature and who cares for and appreciates nature. The same is true in the social sense. The child sees themself as connected to their friends and caring for and appreciating their friends. Ms. Berry talked about the importance of encouraging and modelling this kindness. (1.374) Ms. Berry and Ms. Jensen also link the social and ecological connection, "when it comes to nature and our relationship with it and how we treat it." (1.376-1.379). The opportunities here to experience and consider a connection to each other and to nature is clearly meaningful for the children (Purpose). Mr. Check described a substantial example from the classroom illustrating the importance and impact of cultivating empathy and connection in the classroom (Purpose).

> [Empathy] is very much fostered in that classroom. I was in the classroom [as a parent volunteer] for a morning in December inside, but I could see the culture built in that room. David got upset because he wanted me to help him with something. I came in to do an art activity with the kids and he wanted some extra help from me, and I was trying to balance being, "Well, I'm your dad but I'm also the instructor." And so I wasn't helping him the way he wanted to and he started crying. And one of the other kids comes over with a tissue for him and another one gives him a hug. And then later, I was cleaning up and they were doing their sharing and they were, that month they were supposed to bring in a picture of a family member or something. And so a girl had brought in a picture

> of her dad and was talking about how she didn't get to see him very much because her parents are split up. And it started with one kid went to give her a hug, then the second. It turned into a group hug. The entire class was giving this girl a hug. And Ms. Jensen didn't tell them to, but that's the environment she's fostered in that room. Those kids have this amazing empathy for each other. (1.4.182)
>
> Now it's going to the rest of the world when they're talking about no animals dying. (1.4.184)

Here we see an example of the extension of empathy for other people to an empathy for the broader ecological community through opportunities provided to connect with nature. These are experiential opportunities that are, as in the above examples, quite powerful (Purpose).

Mr. Check described another example which demonstrates a child-initiated enactment of the capability for connection involving his son. David had hurt his finger in a locker door and he had later told his father "how one of the other kids took care of him . . . They're an empathic group." (1.4.186-1.4.87)

Two other parents described this nurturing of empathy and connection to nature that their children talk about learning at school with regards to caring for birds. (1.5.108, 1.5.126) This approach is described by teachers as providing opportunities for connection and empathy that build on the child's natural capacity for empathic connection. Ms. McComb describes the experiential aspect of encountering the outdoors as a substantial and meaningful opportunity to develop and enact a connection to nature (Purpose).

> I've seen it with groups of children that do not have that teaching [of empathic ability] and those that do. And those that do truly understand that we are in an animal's habitat. We are in it and that we need to care for it because living things live here and rely on it. So they're much more caring about the Earth. And I think that's why we teach children to be caring about the Earth. They… are very cautious and reflective of what they're harvesting [from a forest habitat]. (1.7.20)

These types of opportunities for children to experience a connection with nature that are experienced in the local natural areas, rather than in books, are authentic and likely to be deeply felt (Purpose).

Ms. McComb described instances in which children recall experiences in which they feel a connection to nature that positively impacts their ability to "self-regulate and find mindfulness."

> …throughout the journey into the forest the students found what they felt were nests of grass and sort of dug-outs into the ground that were very cozy and comfortable and so they were so happy to have this little cozy nook that to them felt comfortable and just some place that they could feel serene and part of the world around them. And it was really, really exciting for them. They were happy to just cozy into that little spot, and I think noticing the beauty around them. A lot of the kids even in our conversations will talk about things to help them feel like they can self-regulate and find mindfulness. And they'll talk about the flowers, or being by the beach. Or having a breeze, those kinds of things. And that connection to them has just really been important. (1.7.44)

The substantial opportunity Ms. McComb provided to students here was a chance for students to reflect back on moments of connection that are of benefit to their well-being (Purpose). Ms. McComb recalled an instance in Ms. Carson's room in which her students experienced a connection to nature in the planting and nurturing of a tree. (1.7.47-1.7.48) "When they left, they put their names on stones that surrounds the tree."

Ms. Johnston, the music teacher, also described her experience as she witnessed the gratitude/peaceful heart practice:

> The mindfulness component where they gather in a circle at the end to give their thanks to nature, and they do a peaceful heart, which Ms. Carson has taught them . . . So they share what they're thankful for and some just keep it in their own minds without sharing it out loud. But it's a pretty amazing experience to hear what their gratitudes are after their visit. It's really quite genuine, and the kids are just thrilled about that time. (1.7.57)

Ms. Johnston also described a song about being thankful for the Earth that she introduced to the children. The song led to an exercise that invited the children to pay attention to the sounds in the forest, to experience that connection:

> We sang it all together in the forest… I think it was a nice way to set out our time there because it talks about being thankful for the Earth, and what we were going to experience. It also [leads to] the practice of closing your eyes, and just listening so you can see what you can hear. Just the different noises, and animals set everything around them that they can hear, including the breeze going through the trees. (1.7.59)

Again, as an experiential activity, this provided a substantial opportunity for the children to experience a connection to nature. By Ms. Johnston's description, the students' expressions of gratitude towards nature were, "really quite genuine, and the kids are just thrilled about that time." The children also had the opportunity to either voice their gratitude or keep it in their own minds. As a result, the children had agency over whether or not to participate, and to what degree (Purpose).

Charlie described his connection to the local lake, his superhero-for-nature selfhood, and his future plans for action. (1.9.22-1.9.23; 1.9.42-1.9.43; 1.9.81) Upon describing the action he had taken to raise money for the health of the lake, Charlie had explained, "When I raised money for the lake, I went… to the mirror and I know that I was a superhero." (1.9.41) Charlie also described an instance in which he had discovered a bird's nest that had fallen from a tree. He had climbed the tree and returned it to the branch where it belonged (although he had gotten quite muddy doing it!). "I should not do this, because I thought my mom would get mad because I would be dirty. But my heart made up the decision." (1.9.43)

Charlie described his plans for the future in order to "help the animals":

> On the weekend, if it's a sunny day or not, I'm just going to go outside, and I'm going to make lemonade or stuff and ice and popsicles, and I'm going sell it. And if that doesn't work, I'm going to play my guitar. If that doesn't work, I'm just going to keep on trying until I get enough money, so I can send it to somewhere that they help animals. (1.9.81)

Much of the actions Charlie described in our interview was informed by school-led opportunities to develop capabilities, such as connecting to nature, but actually took place outside of school (Purpose). We see here already the impact that providing such opportunities can have for a child's sense of self and well-being.

As with the capability to appreciate and care for nature, participants describe the development of a connection to nature impacting children's capacity for empathy. Ms. McComb and Ms. Johnston described the importance of providing opportunities for empathy and connection:

> It's that empathy because the students, when they find a little critter [and put it in their] case… they usually want to return it to its habitat before they leave. And that's showing that compassion and empathy, knowing that that creature will best survive in its natural habitat rather than in this little enclosed plastic case. (1.7.66)

Ms. Johnston:

> And I don't think they see themselves as doing anything miraculous or above and beyond. It's just so much a part of them. It's what they do. They form their own garbage clubs at recess, the little children at our school. "If you want to join Garbage Club, come and meet at the white house." And the students come out there, and they have gloves for the kids, and plastic bags, and they share them. And there will be a large group that wants to join. And that's student-led. (1.7.68)

The purposeful action that the children decided upon and enacted during their own time (for example, the removal of litter from green spaces during recess) is a reflection of the connection and care that they feel towards nature.

Providing purposeful action that is "real and that helps students" is described by Ms. McComb as a school-wide approach that has a great impact on the children, including the capacity to value the natural world.

> It reaches students in a lot of ways. And I also think it's a whole school approach too. So it's not just some classes. It's the adults in the building and the older kids who have had those experiences in their classes. It's really infiltrated to our whole school so it's really, what I hear, it's a school-wide effort to provide opportunities that are real and that help students… that develop certain values… Because if you read this in a book, if you read about [water stewardship], it's important to keep [the lakes] clean. I mean it's valuable in the sense of reading and literacy development and everything like that, but to actually go out there and see it and do something about it is something else. (1.7.78)

Ms. Jensen and Ms. Berry link together a sense of affection (to appreciate and care) and selfhood (to connect with nature) with the children's relationship to nature. (1.3232; 1.2.236-1.2.239) As Ms. Jensen described, "It leads to them wanting to do something because the action, the fact that I feel affection [for the natural world], [they] see this part of who they are. They see this." (1.2.237)

An additional impact of this approach is described by Ms. Jensen and Ms. Berry as joy. (1.2.243-1.2.244): "I feel like our kids just have so much joy when we're out in nature." This sense of joy is also reflected in many interviews with the parents, teachers, as well as the principal. It was also a common theme witnessed during many of the observation sessions.

Ms. Jensen described the comfort and peacefulness that is felt in the outdoors as they connect with nature:

> They see themselves as being in a space that they belong in and that they want to be in. I think our students are just as comfortable in our classroom spaces as they are when we take them outside. (1.3229)

The approach to providing opportunities to connect with nature also is described as having benefit for children who are more active. As Ms. Jensen described, “I think it’s really noticeable in kids who need extra movement because, in an outdoor space, they have so much more space to move around… [or] if they are wanting to sit quietly and look closely at something… they have those choices.” (1.3272)

Ms. Carson also described the calming impact that a connection with nature can have for children:

> When we talk about peaceful choices or what can we choose that calms us or makes us happy, nature is always one of them. It’s always, our forest, or going outside listening. Looking at the clouds. Listening to the water. That is always one of the things that, if we’re talking about - because we do talk a lot about how we can calm our bodies how we can centre ourselves. And nature is one of the things that they recognize. (1.1.260)

One of the teachers, who is also a parent with children at Riverdale, described the profound impact that the approach has had on her daughter:

> So I have a daughter who was in the grade 1/2 classroom last year, and they did a lot of nature explorations. And I think I just see her, that year her confidence just flourished and it was just such a wonderful experience for my then grade 2er and grade 1er. I don’t know what to say. I mean, she cried at the end of the school year. She loved that teacher so much. And she valued what she had to say. And that daughter is very excitable [laughter], but I think being out in nature just fulfilled a need of her’s that was so strong, and she left feeling like a champion [laughter]. And my other little peanut that’s in kindergarten right now, we live in the country, so it’s kind of second nature to her to be out and about, so I think she feels at peace when she’s outside, and I think if she didn’t have that experience it would be just so different for her. It helps her with her confidence, and… I love - they’re very creative and confident little children because they get to go to this school. (1.3258)

This powerful example underlines the profound impact that Riverdale’s approach can have on children – especially those that struggle in an unnatural, indoor setting. Part of this impactful approach includes the provision of opportunities to experience a

connection to nature. The child in the above example was transformed by her experience in part because of this opportunity to be in nature and experience a connection. By the above description, the child's relationship to a kind and caring teacher, Ms. Carson, also played a considerably significant role. It should be noted that in Ms. Carson's capacity for kindness and patience is a deeply felt value and recognition of what it means to be a child. Children need a connection to nature because they are innately drawn to nature, they are *of this world*. To separate children from the wonders and mysteries and joys of nature is to deprive them of a fundamental part of their humanity. If we accept the idea that people have a fundamental human need to experience in our selfhood a connection to the natural world, then it becomes important for teachers to provide opportunities to develop and enact experiences for our children to connect with nature.

An evaluation of the studied outdoor education approach that provides for opportunities to develop and enact the capability "experiencing a connection to nature".

Criterion 1. There were many opportunities to develop and enact the capability of experiencing a connection to nature demonstrated in the observation and interview data. The following examples are discussed in the above analysis section (marked with "Frequency"). These include:

- Connecting with nature - artistic representation of feelings/connections when in nature during nature adventures and field trips;
- Connecting with nature - identifying as a steward who is connected to nature and taking action - removal of litter;

- Connecting with others - child who was upset comforted by a classmate during an art session;
- Connecting with others - child who was upset, comforted by the entire class during a family photo sharing session;
- Connecting with others - child who was hurt, comforted and helped by a group of classmates;
- Connecting with nature - protecting animals from harm through litter removal);
- Connecting with nature - protecting hummingbirds from harm through thoughtful actions;
- Connecting with nature - thoughtful "harvesting" of plants and removal of natural items from the environment, for example, sticks that animals may be using for habitat;
- Connecting with nature – experience listening and enjoying nature in the forest "nooks';
- Connecting with nature – planting and sustaining a tree, lining the tree with name stones;
- Connecting with nature – gratitude/peaceful heart practice at the forest, pond, and other locations;
- Connecting with nature – gratitude song and awareness exercise;
- Connecting with nature – raising money for water stewardship;
- Connecting with nature – caring for wild birds in a student's backyard through the repair and replacement of a broken nest.

Criterion 2. Opportunities for the development and enactment of the capability to experience a connection to nature are an integral part of the teaching practice in the classrooms observed and the interview data collected. These opportunities are developed regularly and consistently. The rationale for providing opportunities to experience a connection to nature is central to the teachers' belief that children benefit from a connection to nature and nature benefits from children being connected to nature. As a result, the capability to connect with nature is developed and enacted in an integrative way at appropriate times. The following examples are discussed in the above analysis section (marked with "Integration"). These include:

- Connecting with nature - artistic representation of feelings/connections when in nature during nature adventures and field trips;
- Connecting with nature - identifying as a steward who is connected to nature and taking action - removal of litter;
- Connecting with others - child who was upset comforted by a classmate during an art session;
- Connecting with others - child who was upset, comforted by the entire class during a family photo sharing session;
- Connecting with others - child who was hurt, comforted and helped by a group of classmates;
- Connecting with nature - protecting animals from harm through litter removal);
- Connecting with nature - protecting hummingbirds from harm through thoughtful actions;

- Connecting with nature - thoughtful “harvesting” of plants and removal of natural items from the environment, for example, sticks that animals may be using for habitat;
- Connecting with nature – experience listening and enjoying nature in the forest “nooks’;
- Connecting with nature – planting and sustaining a tree, lining the tree with name stones;
- Connecting with nature – gratitude/peaceful heart practice at the forest, pond, and other locations;
- Connecting with nature – gratitude song and awareness exercise;
- Connecting with nature – raising money for water stewardship;
- Connecting with nature – caring for wild birds in a student’s backyard through the repair and replacement of a broken nest.

Criterion 3. All or most of the students observed, or described by participants, were involved in developing and enacting the capability to experience a connection to nature. The following examples are discussed in the above analysis section (marked with “Participation”). These include:

- Connecting with nature - artistic representation of feelings/connections when in nature during nature adventures and field trips;
- Connecting with others - child who was upset, comforted by the entire class during a family photo sharing session;
- Connecting with nature - protecting animals from harm through litter removal);

- Connecting with nature - protecting hummingbirds from harm through thoughtful actions;
- Connecting with nature - thoughtful “harvesting” of plants and removal of natural items from the environment, for example, sticks that animals may be using for habitat;
- Connecting with nature – experience listening and enjoying nature in the forest “nooks’;
- Connecting with nature – planting and sustaining a tree, lining the tree with name stones;
- Connecting with nature – gratitude/peaceful heart practice at the forest, pond, and other locations;
- Connecting with nature – gratitude song and awareness exercise.

Note: Concerning classroom observations, not all of the students’ parents in the classrooms observed signed consent forms. As a result, I was not able to observe and report on all students in the classrooms.

Criterion 4. The opportunities to experience a connection to nature were substantial, meaningful, deeply engaging, and provided for agentic control. The following examples are discussed in the above analysis section (marked with “Purpose”). These include:

- Connecting with nature - artistic representation of feelings/connections when in nature during nature adventures and field trips;
- Connecting with nature - identifying as a steward who is connected to nature and taking action - removal of litter;

- Connecting with others - child who was upset comforted by a classmate during an art session;
- Connecting with others - child who was upset, comforted by the entire class during a family photo sharing session;
- Connecting with others - child who was hurt, comforted and helped by a group of classmates;
- Connecting with nature - protecting animals from harm through litter removal);
- Connecting with nature - protecting hummingbirds from harm through thoughtful actions;
- Connecting with nature - thoughtful "harvesting" of plants and removal of natural items from the environment, for example, sticks that animals may be using for habitat;
- Connecting with nature – experience listening and enjoying nature in the forest "nooks';
- Connecting with nature – planting and sustaining a tree, lining the tree with name stones;
- Connecting with nature – gratitude/peaceful heart practice at the forest, pond, and other locations;
- Connecting with nature – gratitude song and awareness exercise;
- Connecting with nature – raising money for water stewardship;
- Connecting with nature – caring for wild birds in a student's backyard through the repair and replacement of a broken nest.

How the studied outdoor education approach provides for opportunities to develop and enact the capability "experiencing a connection to nature". Teachers drawn to the idea to link outdoor education to student well-being from a human needs and capability perspective might wonder how the studied outdoor education approach provided students with the opportunity to develop and enact the capability of "experiencing a connection to nature". This section describes the types of activities and their characteristics, and how they may provide such opportunities.

Many of the activities observed and described by participants that provide opportunities to develop and enact the capability "making choices about what to create" share the characteristic of using the outdoors to help students reflect on their identity in relation to the natural world. For example, some students identified themselves as stewards for nature. This "I am with nature" identity led these students to take action to keep clear of litter the natural habitat of animals in local forests, ponds, the local lake, and their own backyard.

Further, the development of an identity of connection in the outdoors was supported by the indoor work of developing a connection among students and among teachers and students. In this type of "connected" environment, children support one another, as in the story described in an interview by one of the teachers of a girl who shared her feelings about her parents' divorce and the immediate response of the students to comfort her as she cried.

In this outdoor education approach, the feeling of being connected to other life and natural elements undoubtedly includes human connection, but may also extend further to include animals, rocks, plants, entire ecosystems, and so on. This capability to

connect with nature may be developed through activities such as the gratitude practice and the awareness activities. The connection may also be demonstrated through student-initiated actions, for example, planting and sustaining a tree, raising money for water stewardship, or by thoughtful harvesting of plants (picking common flowers, such as dandelions, but leaving the rest).

Finally, children were provided opportunities to artistically represent the connections they felt to nature when they were in the outdoors, during local outdoor adventures and field trips further abroad.

This outdoor education approach provides the opportunities to develop and enact the capability, experiencing a connection to nature by using the outdoors to help students reflect on their identity in relation to the natural world. Such an identity of connectedness is supported by providing students with opportunities to feel connected to one another as well. The capability to connect with nature may be developed through a gratitude practice, awareness activities, artistic representations (of their connection with nature) and student-initiated actions committed in solidarity with the natural world.

Capability 6: To Voice Questions and Ideas, and Listen to Others' Questions and Ideas

> **Observational example: The Seven Sacred Teachings, the cankerworms and the eagle.** We are now into the second week of June and the energy among the children is substantial. The children know that they are heading outside and they are excited to say the least. It is a warm, sun-drenched morning as Ms. Carson leads her children across the field out towards a small circle of trees next to the high school. Among the trees there is a diverse collection of shrubs, some berry-producing – this catches the eye of the children. There were also many canker worms climbing the trees that also catch their attention. Ms. Carson and a few of her helpers spread a large blue tarp, brought over in the wonder wagon, on the grass for the morning activity. Ms. Cardinal, the Indigenous educator for the school division, had joined the children to talk with them about the Seven Sacred

Teachings of the Anishinaabe. Materials for the activity, including the children's plant journals, were spread out on the blue tarp. Ms. Carson gathered the children on the blue tarp, who were still observing the canker worms and berries, and reminded them of listening behaviour before re-introducing Ms. Cardinal, who the children had met her earlier.

Ms. Cardinal said her hellos and introduced the purpose of her activity, as well as the talking stick and how to use it. The children, despite their high energy levels, are surprisingly attentive and engaged. The nature of Ms. Cardinal's activity requires student participation, and the children are eager to oblige. The participatory skills of the children stood out as Ms. Cardinal interacted with them. For example, Ms. Cardinal began the discussion by asking the children, "What do you see around you in nature?" The children offered numerous responses for over 10 minutes. Ms. Cardinal then asked the children to think deeply about how all of these aspects of nature are connected. Right away, one of the children responded, "Everything is part of nature. Mosquitoes, canker worms, still part of nature ants, still part of nature, that's why we need to respect ant hills."
Ms. Cardinal responded encouragingly and, after a few more comments from the children, asked the group to sketch the animals and plants and other aspects of nature that they mentioned and then try to show in their drawings how these are all connected.

During this discussion, one of the children had taken up a pencil and was drumming it on the tarp. In a whisper, Ms. Carson very gently and patiently redirected the child without drawing attention to the situation.

Ms. Cardinal talked about the seven sacred teachings with the children. She explained that the seven sacred teachings describe the respect and sharing that form the foundation of the Indigenous way of life. Each teaching represents one of the basic qualities necessary for a full and healthy life. To show respect is to share and give of yourself for the benefit of all life. We all belong in the great circle of life, Ms. Cardinal explained, and so we must show respect for one another in order to have a good life. An animal represents each of these sacred teachings. Ms. Cardinal talked with the children about each of the animals and the virtue that they represented:

- Eagle – Love;
- Bison – Respect;
- Bear – Courage;
- Sabe (Sasquatch) – Honesty;
- Beaver – Wisdom;
- Wolf – Humility;
- Turtle – Truth.

As Ms. Cardinal shared each of the sacred teachings, the children added their thoughts about the virtues that the animals represented, as well as their stories of animal encounters. Despite the fact that Ms. Cardinal was new to them, many of the children were quite vocal. The session provided opportunities for the children

to appreciate nature and see themselves as part of the family of life. When Ms. Cardinal talked about respecting nature, stories were shared and references were made by the children, with Ms. Carson sometimes reminding them, to trips to the "forest" and nearby pond and the care and appreciation offered in those spaces. The children shared stories about respecting the homes of the birds and squirrels as they entered the forest. After the discussion, the children clustered into seven groups and were encouraged to create large pictures representing each teaching.

When it was time to gather up the materials back into the wonder wagon and head back to the school, a heated discussion erupted. Some of the children returned to the circle of trees and began talking about how the canker worms were destructive to the trees. One of the children said that they should squish them in order to protect the trees, "That's what we do at home." Some of the children agreed with this, while others were very upset and became quite angry, "Don't you squish them!" One child said, with a very serious look on his face, "Everything is going to die one day, even the cankerworms." Ms. Carson observed all of this and then intervened when it looked like the discussion might escalate into an argument as one child said he was going to start squishing the cankerworms, much to the outrage of a few others. Ms. Carson facilitated a short discussion, reflecting both sides of the argument. It appeared that she observed that tempers were too high to continue this discussion at this point (the discussion would be taken up later in the day) and directed the children to start walking back to the school. Not long after this, one of the children pointed to a bald eagle flying overhead and everyone stopped and starred up as it soared overhead. This had the fortunate effect of calming the situation down, although I noticed one child with his arms folded staring at the ground, still a bit angry about the previous debate. However, once he noticed all attention focused on the sky, he too joined in and gazed up at the eagle soaring above. (2.6.1- 2.6.2; 2.6.4 - 2.6.6)

Analysis: Opportunities to develop and enact the capability of voicing questions and ideas, and listening to others' questions and ideas. In the above examples, the children were provided with multiple opportunities to voice questions and ideas, and listen to others' questions and ideas (Frequency; Integration; Purpose). The occasion took place at the end of the school year with a guest speaker facilitating much of the session. In this way, most of the students observed demonstrated their ability to voice questions, ideas, and stories, and listen to others' questions, ideas, and stories (Participation). They were able to do this independently with little encouragement from Ms. Carson. Many of the children displayed confidence in sharing their ideas and

questions, which I can assume, based on my time in Ms. Carson's classroom, was a result of the participatory environment established and integrated in her classroom and the opportunities provided to the students for voicing questions and ideas, and listening to others' questions and ideas (Frequency; Integration; Purpose).

There were two main events during the observation, Ms. Cardinal's planned teaching, and the child-initiated discussion about the cankerworms. The discussion-based introduction to Ms. Cardinal's presentation of the Seven Sacred Teachings demonstrated most of the children's ability to voice questions and ideas and to listen to others as they voiced their questions and ideas (Frequency). They responded confidently and eagerly to questions posed by Ms. Cardinal, and readily and voluntarily shared stories and ideas about the animals that Ms. Cardinal referred to in her sharing of the Seven Sacred Teachings (Purpose).

There was a moment during this discussion in which Ms. Carson gently and very quietly intervened in order to help a child who was distracted refocus on the discussion. Ms. Carson has a quiet way of respectfully intervening when a child becomes distracted or comes in conflict with another child. This capacity for empathy seems to spring in part from her identity – she is a kind and patient person. However, based on conversations with Ms. Carson, this patience also seems to come from a deep respect and understanding of what it means to be a child. Ms. Carson allows the children opportunities to develop based on a deep understanding of childhood and an openness to each individual child's unique abilities (Purpose). One example that demonstrates how Ms. Carson provides opportunities for students to participate in discussion is through the way she models a deep capacity to listen (Frequency; Integration; Purpose). The children also have many

opportunities to listen to each other or whoever is speaking, as well as voice their own ideas and questions, as they did in this session with Ms. Cardinal (Frequency; Integration; Purpose).

The second, unplanned event was the child-initiated discussion about cankerworms. It is important to point out the intentionality of allowing this discussion to proceed during what had been the "clean-up" portion of the session. Ms. Carson could have just as easily shut down the discussion, and perhaps this would be a typical response in a more traditional approach, and ordered the children to return to the work of cleaning up. However, Ms. Carson identified this moment as an opportunity for the children to engage in an authentic discussion about something that they identified as important and meaningful (Frequency; Integration; Purpose). Should we kill the cankerworms in order to save the trees? Is this justified? Most of the children observed chose to gravitate to the discussion and made their voices heard (Participation; Purpose). When some of the children began announcing their intention to start squishing the cankerworms on the spot, much to the outrage of their classmates with differing opinions, Ms. Carson intervened, facilitated a short discussion, and modelled perspective-taking by reflecting both sides of the argument. In order to allow children the chance to develop the capability to voice and listen to questions and ideas, Ms. Carson modelled the capability herself in this example. Ms. Carson also made the decision to continue the discussion later on in the day when tempers had cooled. In this kind of integrative approach, providing opportunities to voice ideas and listen to others' ideas means keeping open to moments such as this one and being comfortable with conflict and the sometimes unpredictable nature of participatory interaction (Integration). Ms. Carson's ability to think on the spot (for example, moving

the discussion to later in the day) allows her to respond appropriately in her offering of opportunities to voice questions and ideas and listen to others' questions and ideas.

To summarize this event, the provision of this opportunity involved a number of intentional decisions on the part of the teacher. First, Ms. Carson allowed the children to initiate and engage in their own discussion about the cankerworms. Second, Ms. Carson decided an intervention was appropriate and facilitated a short discussion, leading to a reflection of both sides of the argument. Finally, Ms. Carson recognized that the heated nature of the discussion required some "cooling-off" time and postponed the dialogue for later in the day. This emotionally charged issue represented an authentic and purposeful discussion reportedly taken up eagerly by the students later in the afternoon (Purpose). The decisions made by Ms. Carson helped to ensure that the opportunity to voice and listen to ideas and questions was, in time, a positive and educative experience, ultimately contributing to the children's well-being. Such significant opportunities to develop and enact the capability to voice and listen to questions and ideas may help students fulfill the fundamental human need for participation, a fundamental component of well-being.

As two teachers shared, voicing ideas, questions, and challenges with regards to a perceived injustice (such as in the case of littering on school grounds) can be seen as meaningful if doing so may lead to action, namely the removal of the litter (Purpose). They become "more invested" which is "part of their well-being." The teachers here described the children's action as tied "into their ownership of where they are, their ownership of space." (1.1.44)

It is important to note that the idea to keep the natural spaces free of litter came from the students (Purpose). This connection that the children feel to the natural

environment is positively linked to the motivation driving the voicing of their ideas of how to care for it, and in this case, to act as stewards (Purpose).

Giving children opportunities to have a voice means valuing children, and their questions and ideas. Ms. Carson described it this way (Purpose):

> . . . it gives them ownership. It makes them feel so much better that they are young, and they can still make a change and a difference, no matter how small. And they always say, "It takes a village to raise a child," well, immersing the child in that village and making the children feeling ownership for that village. (1.1.45)
>
> . . . they realize that they're a big part of the world. They're just not a child. (1.1.48)

Ms. Carson described a very recent enactment of a child voicing a plan to measure how much garbage is produced in the school:

> Before lunch, I had a little girl come to me and she said, "Can I get a couple clipboards and some paper for tomorrow? I have to figure out how much garbage is here [in the school] and in the classrooms." (1.1.204)
>
> But it's also very much that they know, she was confident when she came to you that you would provide the clipboard, you would provide the pencils, and you would honor her idea, right? When they have an idea that no one should ever spray dandelions, and everyone should keep them, and we should plant flowers for the bees, they believe it with their whole hearts, but they know that the person that they're saying it to will believe it with them. And will help them in the what resources, or whatever they need to make. (1.1.205)

Again, the idea came from the child. A teacher did not tell this child to voice this idea to measure the amount of garbage that the school produces. The idea came from the child and the motivation sprang from a desire to make a difference (Purpose).

Ms. Jensen described the integrative aspect of providing opportunities for the voicing of questions and ideas in this approach (Participation):

> And it's trying to do that in every part of our teaching, but especially in the outdoors. If they say, "What's this?" Well, what do you think that is? What part of the plant is that? Or why do you think, what is that hanging from the

> greenhouse if they're wondering what a spider web is and having them come up with and exploring those answers themselves. (1.325)

For students to feel they have the opportunity to voice ideas and questions, as well as the chance to listen to others' ideas and questions, children need to know that their voice matters – their ideas and questions. For example, I observed Ms. Berry and others to have fostered a classroom environment in which children comfortably proposed ideas and asked questions. I mention it here because creating such an environment allows for child-directed initiatives and ideas, sometimes unprompted, such as the following (Purpose):

Ms. Berry:

> That reminds me of one day in my classroom, one of my students said, "Can we make an aquarium?" I said, "Yeah, what do you need?" So we found the materials, and they started working on it. And within a week, so many of the students were working on their own animal habitats. It all started with just one simple question of, "Can I make an aquarium?" (1.3113)

We see here an openness on the part of the teacher, a willingness to support a child's questions and ideas, as well as a willingness to see the child's idea spread. How this capability to voice ideas and questions expresses itself beyond the school was described by two parents from different families in their description of their sons' ideas and actions with regards to water stewardship and litter clean-up. (1.5.100-1.5.106) Having opportunity to voice ideas (and act on those ideas) at school is seen here as spreading beyond the walls of the school. Here again we see the enactment of the capability to voice ideas and again, it springs from the children (Purpose).

Ms. DeAngelis described another example of an opportunity to voice ideas in the participatory nature of her son's diorama project (1.5.147-1.5.151) involving, "collaborating, respecting other people's thoughts and ideas and opinions, learning to

work as a group." (1.5.147) Ms. Orr describes the configuration of partners and small groups as useful in providing opportunities for the quieter students to have a voice (Frequency; Integration; Participation; Purpose). Here she provides a few examples:

> Doing partners or small groups is nice because it gives all kids a chance to participate. When it's a large group, usually the [quiet] kids kind of just stay back a little bit. So in the smaller groups, and the pairs, it gives each Charlie chance to participate. When we go on outdoor adventures or field trips, like to the zoo, it's smaller groups, so it gives everybody a little chance to . . . they have a voice, right? Some kids' voices are louder than others and some are quieter. So it gives the quiet ones a chance to kind of express themselves and be a little bit more independent, too. (1.6.15)

Ms. Orr goes on to compare her own opportunities to voice questions and ideas with that of her son and the opportunities that she witnesses as a volunteer in the school.

> . . . to see it now where kids, they have a voice, they can say something. It's different and it's good. It's something I never had and it kind of makes you wonder how different your life would have been if . . . you had a voice. (1.6.51)

In a lively exchange, Ms. McComb, a resource room teacher, and Ms. Johnston, a music teacher, described a child's interest in rain and how this lead to an entire investigation (Frequency; Integration; Purpose).

Ms. Johnston:

> …all of her kids were talking about rain and how the rain made them feel and what you do in the rain and it led to… a whole exploration and the kids were driving it. They wanted to learn about the rain. They were painting in the rain. (1.7.106)

Ms. McComb:

> This went on. This went on for weeks. (1.7.109)

Ms. Johnston:

> And they came to the music room, and they wanted to see which instruments sounded like the rain. And when it becomes something so student-led, and I guess so emotionally connected, the learning is extremely meaningful. (1.7.110)

Ms. McComb:

> And, that passion is recognized, and the Ms. Johnston comes passionate about what [the students are interested in] (1.7.114)

Ms. Johnston:

> It's just wonderful to experience and to watch unfold. (1.7.116)

Ms. McComb:

> The teacher responds to the enthusiasm, the passion, the students . . . (1.7.117)

Ms. Johnston:

> The wonder. (1.7.118)

Ms. McComb:

> . . . the wonder and follows it and kind of facilitates what's necessary to do with the questions they're going to ask. (1.7.119)

In this student-led exploration into rain in which the driving questions came from the students, the students themselves have the agentic control over what questions to ask. The explorations and the questions about rain that sparked them were voiced with "enthusiasm" and "passion" and, as Ms. Johnston described, were "extremely meaningful" for the children (Frequency; Integration; Purpose). Ms. McComb described the collaborative work – the back and forth of voicing and listening – and the resulting evolution of ideas (Frequency; Integration; Purpose).

> They're allowed to collaborate and work with each other, and this often can happen before you even initiate it [laughter]. And they're collaborating about something that has been happening and something amazing that has transformed and now they have a new idea that they want to run with. (1.7.201)

The ideas in this example came from the children, and they had the freedom to transform their ideas as they developed (Purpose).

David described the opportunity to have a voice during the sharing sessions and during carpet time following a nature exploration (Frequency; Integration; Purpose):

> Yeah. So two to three students per day bring something to share either on a topic, or sometimes it's their choice. On the carpet, they sit on the carpet but not everybody's sharing every time it's like two to three kids. (1.8.101)
>
> Last time it was my sharing day, I shared my fidget spinner. (1.8.103)

> …on the nature explorations we go to the carpet, and we talk about what we saw. (1.8.109)

Charlie also described an experience on one such nature exploration, and his opportunity to voice his ideas, and how his classmates listened to him (Frequency; Integration; Purpose):

> Once some people were seeing what kind of tree this is in the woods. And I know what kind of tree that was. That was a maple syrup tree. (1.9.45)
> So I told them lots about it, and lots of people heard me. And I got something sharp, and I opened it, and it was kind of syrup in there. (1.9.47)

Charlie's opportunity to voice his ideas about the maple tree and to be heard by his peers is an example of a substantial and meaningful enactment of the capability of both voicing ideas and questions and listening to others' ideas and questions (Purpose).

In the studied approach, teachers cultivate an environment in which children are listened to by teachers and peers, in other words, attentive and respectful toward one another, and have the opportunity to voice their ideas and opinions. As Ms. Orr pointed out, there was a time when common sentiment existed that "children should be seen and not heard." Even today, there exists a spectrum of allowable student voice among classrooms. On the one end of the spectrum, there is the oppressively silent classroom in which children are deadly quiet for much of the time, as students work individually at their desks. In this type of classroom you may observe very little interaction between teacher and students, as well as among students. Students' ideas and opinions are not valued or asked for. The control over the questions about the topics being studied that are worth asking resides with the teachers, as do the answers.

The other end of the spectrum, of course, is the classroom in chaos, a classroom where no one is listened to and no one listens. This is the noisy classroom in which little

teacher or student control exists. Just as in the oppressively silent classroom, little meaningful teacher-student or student-student interactions take place. One may hope that few classes exist at either ends of this spectrum of control. Safe to say, both approaches do little to cultivate the capabilities that lead to participatory values and skills.

In the approach observed at Riverdale, the opportunities to voice questions and ideas, and to listen to others' questions and ideas, are plentiful. How might this pedagogical approach impact student well-being?

Ms. Carson describes a sense of "empowerment" potentially leading students to become "contributing citizens."

Ms. Carson:

> . . . that feeling of empowerment and that their voice matters, that they always remember that. (1.1.235)
>
> . . . they're going to continue on to be these contributing citizens. (1.1.236)
>
> I think [being heard is] the most important thing even as adults. When we feel our voice isn't being heard, we shut down after a while, right? (1.1.239)
>
> So if you can, from a very young age, teach them that they're important, and they can make changes, and their voice can be heard, and someone's actually listening to them. (1.1.241)

The impact of allowing opportunities for the child's voice was also described by Ms. McComb:

> . . . knowing too that their ideas are important and valued, and that we also greatly want to hear what they know and what they can find out - that they want to share because we want them to know that we see them as capable, that you believe that their ideas are important. (1.7.4)

If the reader accepts that people have a fundamental human need for participation in society, then it is important for teachers to provide opportunities for children to both voice their questions and ideas and to have opportunities to listen to others. In order to

develop the capability to voice questions and ideas, and listen to the questions and ideas of others, the child's voice must be valued. Questions and ideas that lead to meaningful inquiry and action send a message to children that their questions and ideas are important and purposeful. Opportunities for children's questions and ideas to be voiced and listened to through meaningful inquiry and action can be seen in the above examples. These opportunities provide children with a capability that helps fulfill the human need for participation, and that is linked to well-being.

An evaluation of the studied outdoor education approach that provides for opportunities to develop and enact the capability "voicing questions and ideas, and listening to others' questions and ideas".

Criterion 1. There were many opportunities to develop and enact the capability of voicing questions and ideas and listening to others' question and ideas demonstrated in the observation and interview data. The following examples are discussed in the above analysis section (marked as Frequency). These include:

- Voicing and listening to ideas and questions during Ms. Cardinal's facilitation of the Seven Sacred Teachings;
- Voicing and listening to ideas and questions during the "cankerworm debate';
- Voicing and implementing the "nature walk/litter clean-up" idea;
- Voicing the "school/classroom garbage measurement" idea;
- Voicing the "aquarium/animal habitat" idea;
- Voicing and implementing water stewardship action and litter clean-up;
- Voicing and listening to ideas regarding the production of a diorama;

- Voicing and listening to each other's ideas and questions in small group settings during outdoor adventures and field trips;
- Voicing and listening to ideas regarding a rain inquiry;
- Voicing and listening to ideas and questions during sharing sessions; and
- Voicing and listening to ideas and questions during carpet time, linked to a nature exploration.

Criterion 2. Opportunities for the development and enactment of the capability to voice ideas and questions and to listen to others' ideas and questions are an integral part of the teaching practice in the classrooms observed and the interview data collected. These opportunities are developed regularly and consistently. The rationale for providing opportunities to voice ideas and questions and to listen to others' ideas and questions is central to the teachers' belief that children are inquisitive beings and their questions and ideas should be honoured. The approach studied here demonstrates that the capability is integrated to the extent that the classroom environment is one that encourages children to voice questions and ideas and listen to others' questions and ideas. This environment that allows for student voice extends to all aspects of the approach. The following examples are discussed in the above analysis section (marked with "Integration"). These include:

- Voicing and listening to ideas and questions during Ms. Cardinal's facilitation of the Seven Sacred Teachings;
- Voicing and listening to ideas and questions during the "cankerworm debate';
- Voicing and implementing the "nature walk/litter clean-up" idea;
- Voicing the "school/classroom garbage measurement" idea;
- Voicing the "aquarium/animal habitat" idea;

- Voicing and implementing water stewardship action and litter clean-up;
- Voicing and listening to ideas regarding the production of a diorama;
- Voicing and listening to each other's ideas and questions in small group settings during outdoor adventures and field trips;
- Voicing and listening to ideas regarding a rain inquiry;
- Voicing and listening to ideas and questions during sharing sessions; and
- Voicing and listening to ideas and questions during carpet time, linked to a nature exploration.

Criterion 3. All or most of the students observed, or described by participants, were involved in developing and enacting the capability to voice ideas and questions and to listen to others' ideas and questions. The following examples are discussed in the above analysis section (marked with "Participation"). These include:

- Voicing and listening to ideas and questions during Ms. Cardinal's facilitation of the Seven Sacred Teachings;
- Voicing and listening to ideas and questions during the "cankerworm debate';
- Voicing and implementing the "nature walk/litter clean-up" idea;
- Voicing the "school/classroom garbage measurement" idea;
- Voicing the "aquarium/animal habitat" idea;
- Voicing and implementing water stewardship action and litter clean-up;
- Voicing and listening to ideas regarding the production of a diorama;
- Voicing and listening to each other's ideas and questions in small group settings during outdoor adventures and field trips;
- Voicing and listening to ideas regarding a rain inquiry;

- Voicing and listening to ideas and questions during sharing sessions; and
- Voicing and listening to ideas and questions during carpet time, linked to a nature exploration.

Note: Concerning classroom observations, not all of the students' parents in the classrooms observed signed consent forms. As a result, I was not able to observe and report on all students in the classrooms.

Criterion 4. The opportunities to voice ideas and questions and to listen to others' ideas and questions were substantial, meaningful, deeply engaging, and provided for agentic control. The following examples are discussed in the above analysis section (marked with "Purpose"). These include:

- Voicing and listening to ideas and questions during Ms. Cardinal's facilitation of the Seven Sacred Teachings;
- Voicing and listening to ideas and questions during the "cankerworm debate';
- Voicing and implementing the "nature walk/litter clean-up" idea;
- Voicing the "school/classroom garbage measurement" idea;
- Voicing the "aquarium/animal habitat" idea;
- Voicing and implementing water stewardship action and litter clean-up;
- Voicing and listening to ideas regarding the production of a diorama;
- Voicing and listening to each other's ideas and questions in small group settings; during outdoor adventures and field trips;
- Voicing and listening to ideas regarding a rain inquiry;
- Voicing and listening to ideas and questions during sharing sessions; and

- Voicing and listening to ideas and questions during carpet time, linked to a nature exploration.

How the studied outdoor education approach provides for opportunities to develop and enact the capability "voicing questions and ideas, and listening to others' questions and ideas". Teachers drawn to the idea to link outdoor education to student well-being from a human needs and capability perspective might wonder how the studied outdoor education approach provided students with the opportunity to develop and enact the capability of voicing questions and ideas, and listening to others' questions and ideas. This section describes the types of activities and their characteristics, and how they may provide such opportunities.

Many of the activities observed and described by participants that provide opportunities to develop and enact the capability "voicing questions and ideas, and listening to others' questions and ideas" share the characteristic of using the outdoors as a rich source of phenomenon and mystery to get students talking and listening to one another.

As with the capabilities, asking and exploring questions about nature, the teacher may provide intentional provocations in order to offer student opportunities to voice and listen to ideas, but it is also crucial to be alive to the special moments when nature offers up something miraculous, however small or large. For example, when students came across a small tree covered in cankerworms at a time when Ms. Carson had planned to take the students back to the school for another activity, Ms. Carson altered the plan, recognizing the potential in the discussion that ensued. In these instances, the original plan is adapted, or discarded entirely, in light of the opportunity for an authentic discussion involving the

development of the capability to voice and listen to ideas. In other words, what is needed in these moments is an eye for possibilities and a flexibility in previously conceived plans for the day.

Another important feature of the outdoor approach with regards to the development of the capability, to voice and listen to ideas, is the teachers' beliefs about the value of student voice. This characteristic is crucial. For some teachers it may challenge the very core of what it means to be a teacher, that is, to talk while students listen, or simply, to teach. Providing space for students to voice their opinions, ideas, perceptions, and stories, as well as opportunities for their fellow classmates to listen and respond to those articulations is a fundamental ingredient to the development of the capability. Again, what makes this an outdoor education approach is the way in which nature is utilized to ignite ideas and spark a discussion. The underlying belief that supports this approach is the notion that children are innately drawn to nature (Naess, 1985; Wilson, 1984), and because of this attraction, children will be more prone to want to voice ideas and listen to other's ideas as well. Here are some examples, which include the student-directed and teacher-facilitated discussion of: the "cankerworm debate," the "nature walk/litter clean-up idea," the "school/classroom garbage measurement" idea, the "aquarium/animal habitat" idea, the water stewardship action and litter clean-up planning, ideas regarding the production of a diorama, and ideas initiating and regarding a rain inquiry.

This outdoor education approach provides the opportunities to develop and enact the capability, voicing questions and ideas, and listening to others' questions and ideas by using nature as a source of inspiration to get students talking and listening to one another.

Common Threads of How the Studied Outdoor Education Approach Provides for Opportunities to Develop and Enact the Respective Capabilities

In this final section, the common threads of the outdoor education approach are presented in terms of the studied capabilities: making choices about what to create, asking questions about the natural world, exploring student-generated questions and ideas about nature, appreciating and caring for nature, experiencing a connection to nature, and voicing questions and ideas, and listening to others.

Perhaps one of the most dominant features of this outdoor education approach is the utilization of the natural world as a rich source of wonder and mystery in order to spark the children's imagination, curiosity, thought, and action. Whether nature is used as a way to excite children to engage in a creative work; as a spark for a discussion, a question, or an exploration, an ethical action; or as an opportunity for children to reflect on identity as a part of nature, the utilization of the natural world to develop and enact the respective capabilities is a central part of this outdoor education approach. The natural world is an authentic space for children to be inspired and to experience the mysteries and wonders of all that may be encountered. It is a space that teachers can use to intentionally create provocations that may lead to children's inquiries, artistic endeavors, projects, or perhaps even a deeper awareness of themselves, as children, within the web of life.

Connected to the notion of provocation, a second feature of the outdoor education approach is the teachers' ability to be alive to the special moments that nature provides and the skill to act in the moment to provide an opportunity for students to develop the appropriate capability. Sometimes, as in the case of spotting a soaring bald eagle on a walk to the pond, this simply means pointing and modelling an excitement and wonder at

the site of this magnificent being. Other situations might call for recognizing and recording questions that children have about, for example, a ladybug that the children have discovered. The ladybug becomes the provocation that may in turn lead to a class-wide inquiry project into ladybugs, or some aspect of ladybugs that the children are curious about. Looking for and recognizing opportunities in nature to develop and enact the corresponding capabilities is a key feature of the outdoor education approach presented here.

Another common feature of this outdoor education approach, informing all of the capabilities, is the teachers' attunement to what it means to be a child. This includes the belief that children are inquisitive beings. From the perspective of this approach, children deserve to have opportunities to have their questions heard and to be provided with opportunities to explore and voice their questions and ideas. In this approach, the child's voice is valued. The children's need to express themselves, in a myriad of ways, is also valued. The importance placed upon respecting the child's inquisitiveness and need for expression informs how opportunities are provided. Those opportunities often involve immersing children in the outdoors. Consequently, attunement to what it means to be a child also crucially means recognizing that children are of this world. They are soft-wired to be in nature. Children's curiosity, creativity, and sense of self may thrive in nature. A core feature of this approach is a recognition of this belief.

Indoor work, in this outdoor education approach, may also support the development and enactment of capabilities in the outdoors, and vice-a-versa. The two environments may support one another. As in the case of writing and artistic expression, what is experienced on an outdoor adventure may be the source of inspiration for the next day's

lesson exploring a technique of writing or painting. Similarly, the indoor writing activity could be a reflection on the previous day's experience of lying down in the forest and staring up at the treetops. Both examples provide an opportunity to develop and enact the capability to appreciate nature.

Finally, the role of agentic control is a significant feature of this outdoor education approach that permeates all of the capabilities. Teachers of this approach provide opportunities for children to make decisions about what to create and what to investigate, including the planning and execution of projects and investigations. The teachers provide these opportunities without coercion. Again, providing children experiences in the outdoors is so highly engaging that children are typically eager to participate. Providing children with the agentic control over what they do and how they do it, within an open and flexible framework, is a powerfully engaging feature of this outdoor education program that may instill within the children a sense of empowerment and confidence within themselves.

CHAPTER FIVE

CONCLUSIONS

A few years ago, I joined my daughter's grade 2 class on a field trip to Bird's Hill Provincial Park. I remember it quite clearly because of the emotional response that it invoked in me. Arriving at the park, many of the children began marveling at whatever caught their eye – one spotted a hawk, another a small squirrel. I could hear some of them tell stories of camping at the park or attending the Winnipeg Folk Fest, which is an annual event held at Bird's Hill. Once the children were all off of the bus, we were lead down a path rich with various flowers, grasses, trees, birds, and bugs. The excitement among the children began to build. Some were engrossed with talking among their friends while others were interested in taking about what was around them. What struck me was whenever a child stopped to point out a bird or hunched down to examine a bug, they were quickly hurried forward by the interpreters. After a 10-minute walk we arrived at a large area that had been cleared of all trees and replaced with grass. The children were divided into two groups and were instructed to sit in two separate areas in a circle on the ground. Each interpreter stood before the two groups of seven-year-old children and proceeded to launch into a torturous 50-minute lecture about food chains. There were almost no questions asked of the students during the entire sleep-inducing monologue. After the lecture, the children were given simple crafts to complete that seemed to be entirely unrelated to the tedious lecture that was delivered. Many of the children obligingly raced through the craft and then gravitated away from the craft table to play a game of soccer in the open space, while others just sat on the grass and talked. Thirty

minutes later we were all raced back through the forest and onto the bus for the long trip back to the school.

There are a number of things that strike me about that field trip now, after I reflect on my time at Riverdale. The first thing that stands out is the fact that this presentation (lecture plus craft) could have just as easily been delivered in a classroom. The nature in the park did not, in anyway, enhance the "teaching" that was assumed to occur. There also seemed to me in the way this interpretive session was delivered to be a lack of understanding of what it means to be a child. In both the design and delivery of this field trip, there was a failure to recognize the children's inquisitiveness, their innate attraction to elements of nature, and any recognition of the children's past experiences and knowledge. The presentation to these small children was delivered very much how a professor, steeped in the tradition of the 90-minute lecture, might deliver a session in a large lecture hall, with no questions or student interaction. In fairness to nature interpreters everywhere, this incident, in my experience, is an anomaly. I have witnessed, in places such as Oak Hammock Marsh, Fort Whyte Alive, and Tynehead Regional Park, outdoor presentations that engage this sense of a child's inquisitiveness and wonder, interpreters and teachers who are alive to the sense of awe and excitement that many children exude when interacting with nature. It could be argued that such level of engagement aids in learning. Engagement with nature could certainly help children learn knowledge. This evaluation, however, looked at an approach that envisions the purpose of schools going beyond simply the acquisition of knowledge, an approach that seeks to help children develop capabilities that contribute to their well-being.

The second glaring feature about this field trip was its apparent purpose: to teach knowledge (however limited and lacking in the teaching approach: little use of the natural surroundings to aid in teaching, little to no involvement or interaction with the children's ideas and questions). The purpose of this outdoor field trip was not unusual. Many field trips, of any nature, have as their main goal to provide children with information, and hopefully information in a real world or simulated setting in order to make that knowledge less abstract. The accumulation of knowledge through these experiences is certainly a positive aspect of field trips, including those in the outdoors. A school education, and not just the odd outdoor trip, should not be limited to narrow academic pursuits. Education should necessarily include the development of those abilities needed to live a "good life'. Of course, the learning of knowledge and skills and the development of capabilities necessary for well-being need not be mutually exclusive, as can be seen in the classrooms of many teachers. In my experience, what has been lacking in those many classrooms in which teachers are genuinely concerned with their students' well-being is a clear or explicit approach to developing appropriate abilities. In some cases, what is lacking is an articulation of what it is that the teachers are already doing to develop abilities needed for well-being. For example, many teachers of young children will provide opportunities for their students to develop the capability to make and maintain friendships (whether it is part of the curriculum or not). Teachers do this because they know that children need friends to be happy.

And so, there is the potential, as in the examples outlined in the final section of the literature review chapter, to expand the objectives of schools to include the development and enactment of capabilities to support child well-being. This potential

need not be limited to the "one-off" outdoor field trip, but should be integrated into many aspects of learning and development as children become engaged with nature in and around our schools.

In this final chapter, I discuss the findings of the study, outline the limitations, discuss the implications for teaching and future research, and offer some final thoughts. The final chapter is accordingly divided into four sections. Drawing on the literature reviewed in Chapter 2, the first section addresses the implications of the studied pedagogical approach to well-being education concerning the purpose of education, teaching practice, theories of ecopsychology, outdoor education, Reggio Emilia philosophy, the capabilities approach and the appreciative inquiry approach to utilization-focused evaluation methodology. The second section outlines the limitations of this study. In the third section, I suggest possible directions for future research. The final section provides some closing thoughts for the reader to consider.

Discussion of the Findings

The educational approach I evaluated in this study can be called a capabilities-development-with-nature approach to well-being education. In this section, I discuss the value that such an outdoor approach has for student well-being in light of the research findings.

If, as children, you and I were learning to use a hammer, and we were given support and ample opportunity to practice using that hammer through purposeful, and even agentic activities, one could assume that once we had finished our training that we would, along with other carpentry skills, be able to engage in meaningful work outside of

our learning environment. Based on the findings, I argue that this line of thinking may be extended to include domains linked to well-being more broadly. For example, learning how to connect to others and build relationships – how to socially engage with others – is a way that satisfies our need for social connection and is linked to well-being. In this example, if we are provided with many opportunities to practice social connection with others in meaningful, agentic ways, one could also assume that we will be able to lead a life in which it is possible to build relationships and experience satisfying social connections throughout our lives. Considering how important social connection is to well-being, this would be an important educative endeavor, and it is one that is currently practiced by many teachers, particularly in the primary years, but, arguably it is one that is not sufficiently and broadly valued. The capability of forming social connections or building and maintaining relationships is one that could be more widely taught, beyond the primary years, and taught in a purposeful way through intentional, meaningful and agentic opportunities, instead of as add-ons. This could arguably have a significant impact of human well-being.

The same may be said of the capabilities identified by the participants of this study. By providing many substantial opportunities to develop and enact the identified capabilities, one could assume that Riverdale's approach to outdoor education develops capabilities necessary for well-being for children as students and beyond the school years into adulthood. In Chapter 4, I evaluated the positive impact that the particular outdoor education approach has on the development and enactment of six capabilities identified by the adult participants of the study as relevant to six well-being needs. In this section, I will address the implications of the capabilities-development-with-nature approach to

well-being education through the following lenses: the purpose of education, teaching practice, theories of ecopsychology, outdoor education, Reggio Emilia philosophy, the capabilities approach, and the appreciative inquiry approach to utilization-focused evaluation methodology.

The purpose of education. Why do we send our children to school? Is it in pursuit of a "good" life? A high quality education, it is hoped, will provide the knowledge and skills needed to acquire a trade or profession that offers a stable income; but is this all that is meant by a good life? Is this all we expect from our schools? With increasing rates of depression and anxiety among children, youth, and young adults, the mandate of schools needs to be broadened to include the well-being of our children both now and as they face the stresses of adulthood (AACAP, 2007; Findlay, 2017; Ipsos Public Affairs, 2017).

Noddings (2003) has advocated for a broadening of the mandate of schools to include the development of well-being and happiness in areas such as the development of capabilities linked to providing care for animals and fostering a love for nature and attachment to place. The impact of this caring approach and this openness to opportunities for the development of whichever capability, including those outside of the scope of this evaluation, has a substantial impact on children because in these moments there are real-life questions, problems, explorations, and wonders that present themselves to children in authentic, compelling, and mysterious ways. Nature has the capacity to enliven the senses and spark the imagination.

In light of the findings of this evaluation, I argue that the purpose of schools should include an explicit provision for the development of capabilities that support

fundamental human needs. Many teachers already value the importance of children's well-being, especially in the early years of schooling. However, the diverse ways that teachers have tried to positively impact the well-being of students have not always been clearly articulated, nor have these approaches always been explicitly valued by those in positions of power in the education system.

This evaluation has articulated how the teachers of Riverdale School have provided opportunities for children to develop capabilities important to fundamental human needs and points to methods that may be adapted to serve the unique values and contexts of other schools and communities, including schools beyond the early years' categorization. Traditional school goals, such as literacy and numeracy, need not be at odds with an outdoor education approach that seeks to develop capabilities towards child well-being. For example, when a teacher provides opportunities in nature for children to develop the capability to ask questions about the natural world in the outdoors, this may serve not only to help fulfill the fundamental human need for understanding, but it also provides opportunities for children to develop an inquisitiveness that leads to research, writing, and sharing information. Such outdoor opportunities are highly motivating and authentic, and are much more likely to spark the development of research-oriented literacy skills, over the traditional indoor, solely book-based approaches. However, it is important to emphasize that the value of the studied outdoor education approach is primarily in its potential impact on the well-being of students. The teachers that I encountered through this evaluation provided children with numerous opportunities in the outdoors to develop capabilities addressing human needs because they clearly care about their students' well-being.

As was noted in the introduction to this evaluation, there is a broad and increasing interest in the well-being of children, youth, and adults. At the international level, there is the OECD and UNICEF assessment and ranking of countries based on child well-being (OECD, 2017a, 2017b; UNICEF, 2017). At the national level, there are governments such as the United Kingdom, and national organizations such as the Canadian Index of Wellbeing, assessing and reporting on the well-being of their citizens (CIW, 2016; OFN, 2012). At the regional level, there is the Ontario Ministry of Education that has adopted a child well-being strategy, the Alberta Ministry of Education that has launched a K-12 Wellness Education framework, and British Columbia's provincial health officer that has conducted a comprehensive analysis of the health and well-being of nearly one million children and youth in the province (British Columbia Office of the Provincial Health Officer, n.d.; Government of Alberta Education, 2009; Ontario Ministry of Education, 2016). The growing concern for the well-being of our children and the role that institutions such as schools can play in this concern are an increasing force that has the potential to greatly impact the present and future well-being of our young people. In the next section, I explore implications of the studied outdoor education approach for the practicing teacher, in light of how it may contribute to the Reggio Emilia approach, to mainstream approaches to outdoor education, and in light of the limitations of an indoor approach to developing capabilities that help to fulfil fundamental human needs.

Implications of the findings for practicing teachers. The central feature of the capabilities-development-with-nature approach is the integration of the Reggio-Emilia approach and outdoor education. Typically seen as separate, this study has demonstrated that the integration of the two approaches to education is of mutual benefit to both

approaches to education. The learning experiences available through outdoor education are enhanced by the Reggio Emilia philosophy. As a result of this integration, the capabilities-development-with-nature approach makes nature a teacher and values the imagination and curiosity of children. Likewise, the child-nurturing aspects of the Reggio Emilia approach are enriched by the multitude of available learning experiences in the outdoors and the interest and enthusiasm among children that experiences in nature can ignite.

For the practicing teacher, the capabilities-development-with-nature approach recognizes that children are inquisitive beings. Moreover, children require opportunities to ask, explore, listen and voice questions and ideas that they have about what they encounter in the natural world. In this approach to teaching and learning, children's questions and ideas are the foundation for investigative, meaningful work that may in turn fulfill the fundamental human need for understanding. Teachers of the capabilities-development-with-nature approach look for opportunities for their students to ask, explore, listen and voice questions in all facets of the classroom and the outdoors. Teachers take note and document questions that the students have about the world, which form the basis of inquiry projects.

The capabilities-development-with-nature approach provides a strong framework in which to allow children to ask questions and begin investigations. As with Reggio-inspired teachers, children's voices, their questions, their natural curiosity about the world, are to be valued, listened carefully to, and met with a meaningful response in the form of providing the necessary resources and supports for a purposeful inquiry. Teachers of the capabilities-development-with-nature approach tap into the natural curiosities of

children (Edwards et al., 2012; Fraser, 2006), and deeply listen and respond to questions, ideas, and the diverse forms of expression offered by students. Teachers of this approach allow their students, as Malaguzzi puts it, to engage in the 100 languages of childhood:

> Always a hundred ways of listening, of marveling, of loving, a hundred joys for singing and understanding, a hundred worlds to discover, a hundred worlds to invent, a hundred worlds to dream. (cited in Edwards et al., 2012, p. 3)

In the capabilities-development-with-nature approach, children are encouraged to engage with the natural world, often through provocations (intentional experiences or situations orchestrated by the teacher) and sometimes through what nature offers up. In either scenario, the teacher is the catalyst, playing an important role in guiding the children as they engage in thoughtful inquiry or creative work. By providing intentional opportunities for inquiry and creativity to flourish, students have the freedom to engage in pursuing the questions that they have about the natural world or express ideas that they wish to express. Responsiveness and flexibility are important characteristics for a teacher who wishes to tap into a child's natural curiosity and creative ability. The ability to listen and see children for who they are and what they need is critical in this integrated approach, in which teachers value childhood and listen and respond to children's questions.

As the questions for investigative work often come from the students, the students possess agency and may see the work of inquiry to be relevant and meaningful. As Nussbaum (2011) argues, agency is a key feature of the capabilities approach. Teachers of the capabilities-development-with-nature approach offer students many opportunities to ask and investigate questions. This emphasis of choice and agentic control is an important feature of Nussbaum's (2011) capabilities approach and it is a prominent

feature of the capabilities-development-with-nature approach. For valued agentic capabilities to develop, opportunities must be available. For Nussbaum, agentic control is a matter of basic human right. Teachers of the capabilities-development-with-nature approach provide children with freedom and control over the development and enactment of their agency. In other words, while teachers provide children with the opportunity to develop a capability, in the end it is the children who decide for themselves if they want to enact that capability. This sense of agency also extends to creative endeavours.

Teachers of the capabilities-development-with-nature approach provide opportunities to make choices about what to create because children are recognized as creative beings. As alluded to in Chapter 2, meaningful accomplishments have been shown to help promote happiness (Howell, 2009). When children, and people more generally, are caught up in creative work, and make choices about creative work, they may experience what Csikszentmihalyi (1990) describes as "being in flow." Flow is a state that upon reflection is dominated by a sense of well-being. Moreover, teachers of the capabilities-development-with-nature approach provide children with the opportunity to experience flow with many opportunities for creative expression.

Teachers of the capabilities-development-with-nature approach recognize that connection, care and appreciation of nature is an important aspect of living in balance with nature as well as healthy child development. Crucial to this balance, teachers nurture in their students the development of empathy. Teachers provide guidance and model empathy in order to help children empathize with animals and develop a connection to the natural world.

Teachers of outdoor education may consider integrating aspects of a Reggio Emilia approach, particularly the notion of utilizing nature as a third teacher and the recognition of children as creative and inquisitive beings. Furthermore, Reggio-inspired teachers may also consider how nature can be used as a teacher and source of inspiration for children. For all teachers who acknowledge the value of developing well-being as a goal of a quality education, a capabilities-development-with-nature approach provides a way forward.

The following recommendations may be of interest and help to those wanting to consider an expansion or creation of a capabilities-development-with-nature approach.

Recommendation 1: Opportunities for students to develop and enact capabilities in support of well-being should be intentionally designed and facilitated.

Recommendation 2: Children have a fundamental right to learn and develop in the outdoors as much as possible. The outdoors should be thoroughly utilized to aid in learning and development towards child well-being. The richness and biodiversity of the outdoor setting should be maximally enhanced, given the available resources; however, even a modest natural setting can be utilized (as in the case of the old tennis court with cracked asphalt).

Recommendation 3: As creative beings, students should be provided the opportunity to express themselves in a myriad of ways and to be invited to make choices about what to create and how to create it, within the confines of technique, a topic or inquiry. This provision may allow for a greater ability for the student to engage in

creative choices and creative work. Creative work is a fundamental human need and it is consequently important to provide this basic provision for human well-being.

Recommendation 4: Considering that the care and appreciation of nature is an important aspect of healthy child development and living in balance with the natural world, it is important for schools to provide opportunities for students to appreciate and care for nature and be open to unplanned opportunities in outdoor settings. Appreciation and care stem from the development of empathy through the teachers' guidance (for example, in helping the children empathize with their classmates and with animals). Appreciation and care for nature is also connected to the appreciation and care that the children experience in the classroom. Children have a fundamental human need for affection (in this case, affection for the natural world) and so it is important for teachers to provide opportunities to appreciate and care for nature.

Recommendation 5: Children benefit from a connection to nature and nature benefits from children being connected to nature. As with the capability to appreciate and care, developing a connection to nature impacts the capacity for empathy. A connection to nature may also lead to a range of positive emotions in children, from joy to a sense of calm, and may also benefit those children who struggle in an indoor setting. Children need nature and require, as part of their selfhood as humans within this world, a connection to the natural world. Consequently, crafted experiences for children to connect with nature are crucial.

Recommendation 6: Children are inquisitive beings and should be provided the opportunity to ask questions about what they encounter in the natural world. Questions are the foundation for investigative, meaningful work that may in turn fulfill the fundamental human need for understanding. Teachers can look for opportunities for their students to ask questions in all facets of the classroom and the outdoors. Children have a fundamental human need to understand the world around them and, as a result, it is important for teachers to provide opportunities for children's questions by recognizing, valuing, and responding to children's wonder, curiosity, and questions about the world.

Recommendation 7: Children are naturally inquisitive beings and should be provided opportunities to explore questions and ideas that they have about nature. This may include, in the development of a connection and relationship with nature, opportunities for children to explore action-orientated ideas. An environment may be cultivated in which children trust teachers to support them in their explorations. In many cases, the utilization of nature readily lends itself to the exploration of questions children have about the elements of nature. Providing opportunities to ask and explore questions and ideas for children may inspire a life of meaningful action towards the evolution of an ecologically sound culture.

Recommendation 8: Children are inquisitive beings and the *voicing* of their questions and ideas should be honoured. Teachers may cultivate an environment in which children are listened to by teachers and peers and have the opportunity to voice their ideas and opinions. When children know what they have to say matters, then often they

internalize that *they* matter. (1.1.235) Children have a fundamental human need for participation in the classroom and beyond.

Theories of ecopsychology, outdoor education, the Reggio Emilia philosophy and the capabilities approach. A crucial question for ecopsychologists is how can people come to see themselves as integrated within the natural world (Naess, 1985; Roszak, 2001)? The question lies at the heart of human and planetary well-being. In order to live as a whole human being, ecopsychologists argue that an integrated-with-nature identity is fundamental (Fisher, 2013; Shepard, 1998; Thomashow, 1995; van Wyck, 1997). Supporting this notion, the environmental psychology literature demonstrates that time spent in nature is beneficial to our physical, mental, and emotional well-being (Bratman, et al., 2015; Christine, et al., 2015; Cobb, 1977; Faber Taylor & Kuo, 2006; Hüttenmoser, 1995; Kahn, 1999; Kardan et. al, 2015; Lunde, et al., 2012; Mitchell & Popham, 2008; Moore, 1986; Moore & Wong, 1997; O'Brien & Murray, 2007; Ogden, et al., 2010; Park, et al., 2010; Pyle, 1993; Russell et al., 2013; Sandifer, Sutton-Grier, & Ward, 2015; Taylor & Kuo, 2008; Townsend & Weerasuriya, 2010; Ulrich, 1984; Wells, 2000; Wolf, 2015; Woodgate & Skarlato, 2015). While time spent in nature is clearly a positive force for human well-being, the capabilities-development-with-nature approach goes beyond mere nature exposure. The approach utilizes nature to develop capabilities that address fundamental human needs. Chief among those needs, particularly from the perspective of ecopsychologists, is the need for identity, namely an identity that recognizes the interconnected human place within the natural world. Ecopsychologists hold that while modern life has an effect on the human mind, the mind is fundamentally influenced and adapted to the natural world from which it evolved (Wilson, 1984). Our

human identity is deeply linked to the world in which the human body and mind evolved. Ecopsychologists seek to reassert a with-nature identity by expanding the connection between humans and nature (Roszak, 2001).

The capabilities-development-with-nature approach will be of interest for ecopsychologists and others who recognize the value of a human connection with nature. The approach strives to help children develop a "with-nature" identity through the development of capabilities that either offer opportunities to experience nature as children create, question, explore, and voice ideas about the wonders of the natural world, or that explicitly help to cultivate a connection to nature through the development of care and appreciation through the fostering of empathy. Noddings (2003) argues for the development of well-being in the development of, among other areas, love for nature and attachment to place through the cultivation of care and appreciation through the fostering of empathy. The capabilities-development-with-nature approach is an approach that fosters empathy.

Providing intentional experiences and opportunities for children to develop a with-nature identity fulfills the innate need to feel connected to nature (Wilson, 1984). In light of the evaluation of the capabilities-development-with-nature approach and the supporting literature, I strongly believe that people need nature in order to live well. As they grow and develop, children particularly need opportunities and experiences in nature in order to live well and be fully human, interconnected within the natural world.

As with ecopsychology, outdoor education points to the positive impact of the natural world on humans, as well as learning through experiences in nature. One of the outcomes of outdoor education is the recognition that humans are part of larger systems

of life and existence (Louv, 2005). The literature discussed in Chapter 2 outlines the ways in which outdoor education has contributed to social and economic needs, and the need for health, freedom, control and purpose. Adding to the research that links outdoor education and well-being, the capabilities-development-with-nature approach points to a method that helps to fulfill the fundamental need for creation, understanding, freedom, affection, identity, and participation through the development of specific capabilities. As a result, this approach may be of interest to teachers and academics interested in supporting child well-being through education. With this approach, the utilization of the outdoors helps to develop and enact capabilities linked to the fulfillment of human needs.

The natural world provides the theatre in which provocations of development can happen, whether planned or otherwise. While the development of certain capabilities can take place in the indoor classroom, the outdoors offers children opportunities that would not be possible in an indoor environment. For example, in order to cultivate empathy in the development of the capabilities to connect, care and appreciate nature, students require opportunities in natural areas to actually connect, care and appreciate nature. For example, teachers of this approach may begin by modelling for students appreciation and care for a ladybug in a forest as they allow the ladybug to walk along their hand. Students may themselves enjoy the experience of observing and appreciating a ladybug up close and practice the care involved in retrieving and replacing the ladybug. By developing and enacting the capability to care and appreciate an element of nature, in this case a ladybug, students may understand that life is valuable. This modelling in the outdoors is presumably much more effective then sharing a picture of a ladybug and then telling students to take care when handling a ladybug, because the outdoor experience is

authentic and also captivating. Again, it is important to realize the reason that it is so captivating for students to have such moments in nature is tied to Wilson's (1984) notion that humans are innately drawn to the natural world.

Taking this example further, as students experience ladybugs in their natural environment, as the ladybugs scale the stems of plants in pursuit of aphids, students will find it much easier, then say from a book, to see the ladybug not as a single and separate entity, but as one wondrous bit of life in what Capra (1997) calls the web of life. In this way, an appreciation for the complexity, interconnectedness, and mysteries of nature may be possible, as well as the student's own place within the web of life. In an indoor classroom, such revelations may be much more challenging. As Nixon (1997, p. 2) observes, "Using the real world is the way learning has happened for 99.9% of human existence. Only in the last hundred years have we put it into a little box called a classroom."

As discussed in Chapter 2, there is much evidence that indicates that an effective way to fulfill human needs is through participation in the outdoors (Ast, 1995; Carmen et al., 2011; Duckett et al., 2010; Goleman, 2012; Hill, 2006; Stone, 2009). In light of the research studied here, utilizing the outdoors to offer enriching opportunities to support child well-being now and in their future lives is a worthy goal of schools.

Reggio Emilia practitioners and academics may find value in two observations drawn from this study. First, there is the idea that the outdoors play an important role as a third teacher, familiar to some in the Reggio Emilia academic discourse (Maynard, Waters, & Clement, 2011; Torquati & Ernst, 2013). As described above, some opportunities for development and learning are best experienced in the outdoors.

Provocations, such as the discovery of a granite rock in a forest, may have a much greater impact in an outdoor setting then finding that rock on an indoor table, and is experienced as much more authentic – like an authentic discovery. As a foundation of the Reggio Emilia philosophy, curiosity and inquiry may also be more greatly enhanced in an outdoor setting. To extend the example of the discovery of the granite rock, questions such as, "Why is this rock here?" or, "How long has it been here?" would presumably not arise as naturally if the rock were presented to the children in isolation of the forest. Furthermore, the discovery of the rock, rather than the presentation of the rock by the teacher, fits well with the spirit of the Reggio Emilia philosophy. In this approach, it would be more advantageous if the students themselves discovered the rock, rather than the teacher for the students, and it would be more likely that questions from the students would naturally follow.

It should also be reiterated in light of this study that the indoor and outdoor settings overlap and support one another. For example, as the empathy for animals in nature is fostered in the outdoors, the empathy for classmates in the indoor setting is strengthened, and vice-a-versa. As participation and questions are encouraged in the indoor classroom, children recognize that their participation and questions are also valued and encouraged in the outdoors. The two settings, while entirely different, may complement and strengthen one another.

Secondly, the lens of a capabilities approach may serve as a valuable framework to articulate the many ways that the Reggio Emilia approach contributes to child well-being. To begin, there is much overlap between the Reggio Emilia and capabilities approach. Reggio Emilia practitioners advocate for control over their learning, similar to

Nussbaum's (2011) advocacy for agency and control over the development of capabilities. Reggio educators believe that children must learn through experiences with the world and require the opportunity to explore that world, again much in line with Nussbaum's advocacy for human freedom, affiliation, and concern for and in relation to animals, plants, and the world of nature. This also reflects the outdoor education tenets of experiential learning and concern for nature. In the Reggio Emilia approach, children must also have opportunities to express themselves, linked again to Nussbaum's capabilities approach that argues for freedom of expression.

The Reggio Emilia philosophy may use the lens of a capabilities approach to further articulate what facets of well-being supported through development and enactment of capabilities reflect the values of the Reggio Emilia approach, and the local context. Much research into the Reggio Emilia approach has assessed the benefits to children as researchers, artists, collaborators, and creative and critical thinkers, (e.g., Biermeier, 2015; Gencer & Gonen, 2015; Santín & Torruella, 2017; Stegelin, 2003), however research focused solely upon the impact of the Reggio Emilia approach towards well-being is sparse.

Finally, the founders of the Reggio Emilia philosophy intended this way of teaching to be flexible and open to adaptation reflective of the needs of children and their communities. As Louv (2005) and others report (Fisher, 2013; Roszak, 2001), there is a disturbing disconnection of people from the natural world that is having a devastating impact on human and planetary well-being. In order to address this serious problem, practitioners may consider adapting the Reggio Emilia philosophy to include a capabilities-development-with-nature approach.

How does the capabilities-development-with-nature approach fit with the theory of capabilities approach? As this evaluation has demonstrated, the capabilities-development-with-nature approach provides numerous opportunities to develop and enact capabilities to fulfill human needs and support well-being. The capabilities-development-with-nature approach offers a concrete way in which the capabilities approach may be applied in an educative setting to address child well-being. This unique pedagogical method offers theorists of the capabilities approach a tangible example of how educators may offer opportunities for students to develop and enact capabilities, capabilities that contribute to present well-being and the well-being of the students' future adult selves. If schools may be seen as places where children have opportunities to grow and develop, then the capabilities-development-with-nature approach points to an explicit way in which educators can provide opportunities for students to grow and develop in a comprehensive sense, outside of the education system's traditional limits of academic growth, to a broader vision of what education can entail. The inclusion of the growth and development of child well-being as part of a quality education has been described as a matter of justice (Nussbaum, 2011). In order to live a full life, people require an equitable distribution of opportunities to develop capabilities that contribute to well-being. For theorists of the capabilities approach, the capabilities-development-with-nature approach links the capabilities approach theory to an educative practice.

In light of this study, what value does the methodological approach have? The methodology was an integration of an adapted appreciative inquiry with a utilization-focused evaluation. The method of evaluation was participatory, involving teachers, parents, and the principal as the stakeholders of the evaluation. As discussed in Chapter 3,

in order to identify how the capabilities-development-with-nature approach may impact child well-being, the stakeholders identified fundamental human needs that the pedagogical approach may address, and corresponding opportunities to develop and enact capabilities required to help fulfill those needs. The identification of the needs and capabilities formed the foundation for the evaluation. The participatory nature of the engagement with the stakeholders served three major purposes. First, through the selection of the needs and capabilities, the stakeholders reflected the values and context of their community and culture. Rather than having an outside researcher tell the community what fundamental human needs and corresponding capabilities would be most appropriate or valuable to the community context or connected to the school's pedagogical approach, the stakeholders themselves were in a better position to offer an appropriate starting point and focus for the evaluation.

Secondly, the participatory nature of the appreciative utilization-focused evaluation will potentially increase the likelihood that the findings of the evaluation will be valued by the stakeholders (Patton, 2008). As an appreciative inquiry, the evaluation sought to understand and value the most favourable features of the pedagogical approach in order to help teachers, both within and beyond the school, explicitly understand and articulate the justification for the pedagogical approach and the mechanisms at play in the approach, as well as how it may positively impact child well-being (Watkins & Mohr, 2001).

Lastly, education is a communal endeavor. Teachers, parents, and other significant adults in children's lives all contribute to their development, growth, and education. By involving stakeholders in a dialogue about the role of well-being in

schools, and how their school may be contributing to child well-being, a common purpose may be identified and lead to a harmonized effort among teachers, parents, and others to provide opportunities to support child well-being. In this way, opportunities to develop capabilities may reach beyond the school. Parents, extended family, friends of the family, neighbours, coaches, and others may all contribute to child well-being though the provision of opportunities to develop capabilities that have been locally identified.

Limitations of the Study

While I will make a case in the following section for the consideration of adopting appropriate aspects of this pedagogical approach in other educational contexts, the findings of this case study evaluation may only be strictly applied to Riverdale School. In this study of the impact of a pedagogical approach on child well-being, I did not include an examination of the contributions that family and community most certainly make towards child well-being, both separately and in accord with the school's approach.

It is important to note that I base my study (which I highlight here as an *appreciative* inquiry) on studying Riverdale's approach on the assumption that the approach is *valuable* and *benefits children*, which means that I have looked for *evidence to support* the claim that the outdoor component of the program I studied develops and provides opportunities to enact the identified capabilities relative to the identified evaluation criteria.

The evaluation approach was limited to three classrooms, and within those classrooms to the students of parents who agreed to an observation. The evaluation was limited to unstructured observations and qualitative interview data. The evaluation was also limited to a few observations for each class.

I would also like to highlight my own bias as an advocate for outdoor education and as a former teacher who had made modest attempts at integrating outdoor education into my own teaching practice.

Future Research

The potential for further research in this exciting field are vast. Here are my suggestions.

The value of the capabilities-development-with-nature approach suggests that further research is needed which identifies and studies schools such as Riverdale, schools that utilize the outdoors in order to develop capabilities that contribute to child well-being. There is a gap that exists in both the literature and in the explicit mandate of schools to support child well-being through the development of appropriate capabilities with nature, this includes schools that are already quietly supporting child well-being in this way. Teachers who provide opportunities to their students to develop important capabilities may be informed by various ”progressive” educational theories, not merely the Reggio Emilia philosophy or different ”hands-on” outdoor learning perspectives. Such teachers may not think in terms of nature-connectedness, the capabilities approach or even well-being; they may just want their students to be happy, or they recognize their students benefit from being in the outdoors, and have designed their teaching accordingly. There is also value in studying schools that encourage children to develop a connection with the natural world, other than the capabilities-development-with-nature approach. By the same token, there is also much to be learned by studying schools that provide opportunities for children to develop capabilities that contribute to well-being that do not prominently utilize the outdoors (if at all).

In addition to further study the capabilities-development-with-nature approach, I suggest that longitudinal studies, focusing on such schools, track and assess the perceived impact that the approach has on student well-being into adulthood, particularly in schools that have taken a school-wide approach to this capability development in nature method, with students experiencing over a longer period of time a potentially greater impact than one lone teacher over a single year could provide.

I would also suggest the value of methodological research that explores the participatory process of the utilization-focused evaluation method. Such studies could help researchers better engage with and support participants in participatory evaluations.

Finally, I suggest that further research into the capability development with nature approach provide a greater emphasis on the child's perspective, an aspect that is only touched upon in this study.

Final Thoughts

In my former life as a teacher in Surrey, BC, I had the good fortune of meeting the retired teacher and naturalist, Lynn Pollard. Pollard is a member of the White Rock/South Surrey Naturalists and joined us on several trips, including one to Hawthorne Park, a beautiful place that was walking distance from our school. As a naturalist and gifted teacher, Pollard understood the importance of going beyond merely teaching the names of the various plants and animals that we encountered. Pollard had two methods that stood out. First of all, Pollard closely followed the curiosity of the children during the walk to the destination that he had selected. Pollard tapped into the curiosity of the children, listening closely to their questions and encouraging their inquisitiveness. He also had an infectious enthusiasm when he led the group that both mirrored the behaviour of many of

the excitable children and modelled a wonder for the other quieter children when encountering something that caught their eye. When a child would take notice of something, he would stop and notice too. Sometimes he would have a story to tell about the object of curiosity. For example, I remember quite clearly a child taking notice of an elderberry plant. Pollard stopped and looked at the plant with the children and told them that if they pinched the leaf of the plant they would notice that it smelled like peanut butter. The children had a go at this and were completely intrigued. One of the kids said that a better name for this shrub would be "peanut butter plant." And so, from that point on, Pollard referred to the elderberry plant as the peanut butter plant. This "following the curiosity and the voice of the child" approach was of course intentional on Pollard's part. For Pollard, the forest was a place full of mystery and wonder and it provided opportunities for children to develop their ability to experience and connect with the many wonders within it. In contrast with the Bird's Hill field trip, both the outdoors and the children's inquisitiveness played crucial roles in the development of the children.

Pollard's second method involved providing opportunities for children to have a sensory experience. Once the children arrived at the selected destination, Pollard had them engage in a sensory experience – one that would give the children an opportunity to experience a connection to nature. Pollard had them sit quietly in a self-selected spot with a designated perimeter and simply listen to the layers of sound within the forest (sounds close by, and then sounds further and further away). Afterwards, the children discussed what they heard and what they imagined the sounds to be.

While different from Riverdale's approach in many ways, the impact of Pollard's method had, from my perspective, a palpable and clear effect on the well-being of the

children in the moment (the sheer joy on their faces in many of those moments), but also, I suspect, a lasting impact on their ability to connect with and be in awe of nature, a capability with enduring effects on the well-being of the children he encountered.

When teachers provide their students with well-crafted opportunities to develop essential capabilities needed for a "good life" they expand their role beyond simply teaching "the basics." If you agree with the idea that a connection to nature is important to live a full life, then an important consideration for child well-being should include the development and enactment of capabilities necessary to engage with the natural world.

In my interpretation of the findings of this study, the central goal of any quality education should be to provide children with the fundamental capabilities needed for a life of well-being, one that is integrated with the natural world.

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Appendix A

Evaluation Criteria

Criterion 1: Are there many opportunities to develop and enact the capability? Is the capability infrequently developed or developed on a regular basis?

Criterion 2: Is the provision of this opportunity to develop and enact the capability an integrated part of the approach and, as such, regularly developed and enacted? Is the capability valued in such a way that it is developed and enacted on a consistent and frequent basis?

Criterion 3: Are all or most of the students involved in the development and enactment of the capability? Is the opportunity to develop and enact the capability designed in such a way as to encourage all or most of the students to be involved? Does there exist wide participation and engagement among the students in the development and enactment of the capability?

Criterion 4: Are the opportunities substantial and closely linked to an authentic development of the capability? Do the students have agency over the enactment of the capability? Are there meaningful choices available as they enact the capability? For example, do the students have some control over how, when, or how long to enact the capability? Are the opportunities to develop and enact the capability meaningful and substantial? For example, in the case of the development of the capability for making choices about what to create, are the choices provided to students token choices or substantial creative choices that allow for many possibilities or that have a meaningful purpose? Is the opportunity to develop and enact the capability designed in such a way as to be driven by purpose and involve a deep engagement among the students?

Appendix B

Invitation to teachers

Faculty of Education

230 Education Building
University of Manitoba
Winnipeg, Manitoba
Canada R3T 2N2
Telephone (204) 474-9014
Fax (204) 474-7550

{Date}

Invitation to participate in an interview for the study:
Nature Contact and Student Well-Being:
An Evaluation of a Reggio Emilia Outdoor Learning Program

Hello, my name is Michael Link, and I am a Ph.D. student in the Faculty of Education at the University of Manitoba. I am interested in the impact that a Reggio Emilia outdoor learning program has on student well-being. In order to conduct this research, I would like to engage interested individuals in an interview regarding your school's Reggio Emilia approach to outdoor learning. The interview has two main focuses:

1. What capabilities are required to fulfill the human needs identified by our stakeholder group? (these needs include: affection, participation, identity, freedom, creation, and understanding)
2. How might the Reggio Emilia outdoor learning program enhance these capabilities? What have you observed or experienced?

For example, one of the needs selected by our stakeholder group for study is the need for affection. In the Reggio Emilia outdoor learning program under investigation, a hypothetical capability that a participant might identify may include the capability to enjoy nature. In this example, I would ask how this capability is developed by the Reggio Emilia outdoor learning program. I would also ask if you can think of any evidence of activities or opportunities which helps to develop in students the capacity to enjoy nature.

I will also ask you to bring any teacher documentation to the interview that you deem to be both appropriate to the study and that you feel comfortable sharing. I will look for evidence in the shared written documents of activities or opportunities that help to develop the capabilities that fulfill stakeholder-identified human needs identified by teachers as being important for student well-being.

If you agree to participate, I will contact you through email to arrange a meeting time, date and location that is convenient for you. The interview will take approximately one hour and will be carried out at the school site, or at a location that is convenient for you. The specific questions I am planning to ask will be sent to each participant electronically at least one week ahead of the scheduled interview. Before the interview, I

will give you a consent form to read, consider, and sign. I will review the consent form with you in person before the interview begins.

I will audio record our interview using a digital recorder. The file will be later transferred and then transcribed using a password protected macbook pro laptop. All data will then be anonymized. Original data will be printed and locked in a personal filing cabinet with a physical lock, and will be saved on a password protected hard drive. Photocopies of teacher documentation data will be locked in a personal filing cabinet with a physical lock at [redacted] Street, Winnipeg MB. Original copies of teacher documentation data will be promptly returned to you. Any identifying information (i.e. division, names, schools, colleagues) will be anonymized. Any documents containing personal information (such as the consent form signed in the event you participate) both paper and electronic copies will be destroyed one year after I have completed the Ph.D. thesis requirements, that is by November 30, 2018. All anonymized data will be stored in a separate locked filing cabinet from non-anonymized materials (such as contact information and consent letters, pseudonym guide). All anonymized electronic data and write-up related to this project by moving the files to the trash can and emptying the trash can one year after successfully defending the PhD thesis. All hard copy data will be destroyed using a shredder.

If you choose to participate in the study, you may refuse to answer any questions during the interview, leave the interview, or withdraw from the study completely at any time. Participants can contact the PI by email at Michael.Link@umanitoba.ca to withdraw from the study at any time. Should you choose to withdraw from the study all electronic and hard copy data collected will be promptly destroyed.

There are minimal risks to you as a result of participating in this study. This research has been approved by the Education and Nursing Research Ethics Board (ENREB). If you have any concerns or complaints about this project you may contact the Human Ethics Coordinator, Room 208-194 Dafoe Road (CTC Building), by phone at 204-474-7122, or by email at humanethics@umanitoba.ca. If you have clarification questions, contact myself at Michael.Link@umanitoba.ca, my advisor Dr. Charlotte Enns, by phone at 204-474-9009 or by email at charlotte.enns@umanitoba.ca, or members of my advisory committee.

If you would be interested in participating in this project, please email me at michael.link@umanitoba.ca **by no later than February 28th, 2017.** I will respond to your email to suggest possible meeting times within a few days of your response. Your participation is confidential. If you think of any questions, please do not hesitate to contact me.

I look forward to hearing from you.

Sincerely,

Michael Link

Appendix C

Invitation to parents

UNIVERSITY OF MANITOBA

Faculty of Education

230 Education Building
University of Manitoba
Winnipeg, Manitoba
Canada R3T 2N2
Telephone (204) 474-9014
Fax (204) 474-7550

{Date}

Invitation to participate in an interview for the study:
Nature Contact and Student Well-Being:
An Evaluation of a Reggio Emilia Outdoor Learning Program

Hello, my name is Michael Link, and I am a Ph.D. student in the Faculty of Education at the University of Manitoba. I am interested in the impact that a Reggio Emilia outdoor learning program has on student well-being. In order to conduct this research, I would like to engage interested individuals in an interview regarding your school's Reggio Emilia approach to outdoor learning. The interview has two main focuses:

1. What capabilities are required to fulfill the human needs identified by our stakeholder group? (these needs include: affection, participation, identity, freedom, creation, and understanding)
2. How might the Reggio Emilia outdoor learning program enhance these capabilities? What have you observed or experienced?

For example, one of the needs selected by our stakeholder group for study is the need for affection. In the Reggio Emilia outdoor learning program under investigation, a hypothetical capability that a participant might identify may include the capability to enjoy nature. In this example, I would ask how this capability is developed by the Reggio Emilia outdoor learning program. I would also ask if you can think of any evidence of activities or opportunities which helps to develop in students the capacity to enjoy nature.

If you agree to participate, I will contact you through email to arrange a meeting time, date and location that will be convenient for you. The interview will take approximately one hour and will be carried out at the school site, or at a location that is convenient for you. The specific questions I am planning to ask will be sent to each participant electronically at least one week ahead of the scheduled interview. Before the interview, I will give you a consent form to read, consider, and sign. I will review the consent form with you in person before the interview begins.

I will audio record our interview using a digital recorder. The file will be later transferred and then transcribed using a password protected macbook pro laptop. All data will then be anonymized. Original data will be printed and locked in a personal filing

cabinet with a physical lock, and will be saved on a password protected hard drive. Any identifying information (i.e. division, names, schools, colleagues) will be anonymized. Any documents containing personal information (such as the consent form signed in the event you participate) both paper and electronic copies will be destroyed one year after I have completed the Ph.D. thesis requirements, that is by November 30, 2018. All anonymized data will be stored in a separate locked filing cabinet from non-anonymized materials (such as contact information and consent letters, pseudonym guide). All anonymized electronic data and write-up related to this project by moving the files to the trash can and emptying the trash can one year after successfully defending the PhD thesis. All hard copy data will be destroyed using a shredder.

If you choose to participate in the study, you may refuse to answer any questions during the interview, leave the interview, or withdraw from the study completely at any time. Participants can contact the PI by email at Michael.Link@umanitoba.ca to withdraw from the study at any time. Should you choose to withdraw from the study all electronic and hard copy data collected will be promptly destroyed.

There are minimal risks to you as a result of participating in this study. This research has been approved by the Education and Nursing Research Ethics Board (ENREB). If you have any concerns or complaints about this project you may contact the Human Ethics Coordinator, Room 208-194 Dafoe Road (CTC Building), by phone at 204-474-7122, or by email at humanethics@umanitoba.ca. If you have clarification questions, contact myself at Michael.Link@umanitoba.ca, my advisor Dr. Charlotte Enns, by phone at 204-474-9009 or by email at charlotte.enns@umanitoba.ca, or members of my advisory committee.

If you would be interested in participating in this project, please email me at michael.link@umanitoba.ca **by no later than February 28th, 2017.** I will respond to your email to suggest possible meeting times within a few days of your response. Your participation is confidential. If you think of any questions, please do not hesitate to contact me.

I look forward to hearing from you.

Sincerely,

Michael Link

Appendix D

Invitation to principal

Faculty of Education

230 Education Building
University of Manitoba
Winnipeg, Manitoba
Canada R3T 2N2
Telephone (204) 474-9014
Fax (204) 474-7550

{Date}

Invitation to participate in an interview for the study:
Nature Contact and Student Well-Being:
An Evaluation of a Reggio Emilia Outdoor Learning Program

Hello, my name is Michael Link, and I am a Ph.D. student in the Faculty of Education at the University of Manitoba. I am interested in the impact that a Reggio Emilia outdoor learning program has on student well-being. In order to conduct this research, I would like to engage interested individuals in an interview regarding your school's Reggio Emilia approach to outdoor learning. The interview has two main focuses:

1. What capabilities are required to fulfill the human needs identified by our stakeholder group? (these needs include: affection, participation, identity, freedom, creation, and understanding)
2. How might the Reggio Emilia outdoor learning program enhance these capabilities? What have you observed or experienced?

For example, one of the needs selected by our stakeholder group for study is the need for affection. In the Reggio Emilia outdoor learning program under investigation, a hypothetical capability that a participant might identify may include the capability to enjoy nature. In this example, I would ask how this capability is developed by the Reggio Emilia outdoor learning program. I would also ask if you can think of any evidence of activities or opportunities which helps to develop in students the capacity to enjoy nature.

If you agree to participate, I will contact you through email to arrange a meeting time, date and location that is convenient for you. The interview will take approximately one hour and will be carried out at the school site, or at a location that is convenient for you. The specific questions I am planning to ask will be sent to each participant electronically at least one week ahead of the scheduled interview. Before the interview, I will give you a consent form to read, consider, and sign. I will review the consent form with you in person before the interview begins.

I will audio record our interview using a digital recorder. The file will be later transferred and then transcribed using a password protected macbook pro laptop. All data will then be anonymized. Original data will be printed and locked in a personal filing

cabinet with a physical lock, and will be saved on a password protected hard drive. Any identifying information (i.e. division, names, schools, colleagues) will be anonymized. Any documents containing personal information (such as the consent form signed in the event you participate) both paper and electronic copies will be destroyed one year after I have completed the Ph.D. thesis requirements, that is by November 30, 2018. All anonymized data will be stored in a separate locked filing cabinet from non-anonymized materials (such as contact information and consent letters, pseudonym guide). All anonymized electronic data and write-up related to this project by moving the files to the trash can and emptying the trash can one year after successfully defending the PhD thesis. All hard copy data will be destroyed using a shredder.

If you choose to participate in the study, you may refuse to answer any questions during the interview, leave the interview, or withdraw from the study completely at any time. Participants can contact the PI by email at Michael.Link@umanitoba.ca to withdraw from the study at any time. Should you choose to withdraw from the study all electronic and hard copy data collected will be promptly destroyed.

There are minimal risks to you as a result of participating in this study. This research has been approved by the Education and Nursing Research Ethics Board (ENREB). If you have any concerns or complaints about this project you may contact the Human Ethics Coordinator, Room 208-194 Dafoe Road (CTC Building), by phone at 204-474-7122, or by email at humanethics@umanitoba.ca. If you have clarification questions, contact myself at Michael.Link@umanitoba.ca, my advisor Dr. Charlotte Enns, by phone at 204-474-9009 or by email at charlotte.enns@umanitoba.ca, or members of my advisory committee.

If you would be interested in participating in this project, please email me at michael.link@umanitoba.ca **by no later than February 28th, 2017.** I will respond to your email to suggest possible meeting times within a few days of your response. Your participation is confidential. If you think of any questions, please do not hesitate to contact me.

I look forward to hearing from you.

Sincerely,

Michael Link

Appendix E

Invitation to parents of students

Faculty of Education

230 Education Building
University of Manitoba
Winnipeg, Manitoba
Canada R3T 2N2
Telephone (204) 474-9014
Fax (204) 474-7550

{Date}

Invitation to participate in an interview for the study:
Nature Contact and Student Well-Being:
An Evaluation of a Reggio Emilia Outdoor Learning Program

Hello, my name is Michael Link, and I am a Ph.D. student in the Faculty of Education at the University of Manitoba. I am interested in the impact that a Reggio Emilia outdoor learning program has on student well-being. In order to conduct this research, I would like to engage interested students in an interview regarding your school's Reggio Emilia approach to outdoor learning. The focus of the interview will be to identify activities and opportunities that this program provides that may enhance capabilities to fulfill identified human needs.

For example, one of the needs selected by our stakeholder group for study is the need for affection. In the Reggio Emilia outdoor learning program under investigation, a hypothetical capability that a participant might identify may include the capability to enjoy nature. In this example, I would ask how this capability is developed by the Reggio Emilia outdoor learning program. I would also ask if you can think of any evidence of activities or opportunities which helps to develop in students the capacity to enjoy nature.

If you give permission for your child to participate, and you have spoken with your child and they consent and are comfortable with the idea, please send me an email and I will contact you to arrange a meeting time, date and location that is convenient for you. The interview will be under 20 minutes. Before the interview, I will provide you with a consent form to read, consider, and sign on behalf of your child. I will review the consent form with you in person before the interview begins. I will also seek the verbal permission to conduct the interview from your child. You are welcome to sit in on the interview.

The specific questions I am planning to ask will be sent to you, the parent, electronically at least one week ahead of the scheduled interview so that you may, if you like, review the questions with your child ahead of time.

I will audio record our interview using a digital recorder. The file will be later transferred and then transcribed using a password protected macbook pro laptop. All data will then be anonymized. Original data will be printed and locked in a personal filing

cabinet with a physical lock, and will be saved on a password protected hard drive. Any identifying information (i.e. division, names, schools, colleagues) will be anonymized. Any documents containing personal information (such as the consent form signed in the event you participate) both paper and electronic copies will be destroyed one year after I have completed the Ph.D. thesis requirements, that is by November 30, 2018. All anonymized data will be stored in a separate locked filing cabinet from non-anonymized materials (such as contact information and consent letters, pseudonym guide). All anonymized electronic data and write-up related to this project by moving the files to the trash can and emptying the trash can one year after successfully defending the PhD thesis. All hard copy data will be destroyed using a shredder.

If you choose to allow your child to participate in the study, they may refuse to answer any questions during the interview, leave the interview, or withdraw from the study completely at any time. Participants can contact the PI by email at Michael.Link@umanitoba.ca to withdraw from the study at any time. Should your child choose to withdraw from the study all electronic and hard copy data collected will be promptly destroyed.

There are minimal risks to your child as a result of participating in this study. This research has been approved by the Education and Nursing Research Ethics Board (ENREB). If you have any concerns or complaints about this project you may contact the Human Ethics Coordinator, Room 208-194 Dafoe Road (CTC Building), by phone at 204-474-7122, or by email at humanethics@umanitoba.ca. If you have clarification questions, contact myself at Michael.Link@umanitoba.ca, my advisor Dr. Charlotte Enns, by phone at 204-474-9009 or by email at charlotte.enns@umanitoba.ca, or members of my advisory committee.

If you would be interested in allowing your child to participate in this project, please email me at michael.link@umanitoba.ca **by no later than February 28th, 2017.** I will respond to your email to suggest possible meeting times within a few days of your response. Your participation is confidential. If you have any questions, please do not hesitate to contact me.

I look forward to hearing from you.

Sincerely,

Michael Link

Appendix F

Invitation to teachers

Faculty of Education

230 Education Building
University of Manitoba
Winnipeg, Manitoba
Canada R3T 2N2
Telephone (204) 474-9014
Fax (204) 474-7550

{Date}

Invitation to participate in classroom observations for the study:
Nature Contact and Student Well-Being:
An Evaluation of a Reggio Emilia Outdoor Learning Program

Hello, my name is Michael Link, and I am a Ph.D. student in the Faculty of Education at the University of Manitoba. I am interested in the impact that a Reggio Emilia outdoor learning program has on student well-being. In order to conduct this research, I would like to conduct classroom observations (indoors and outdoors) to look for evidence of how might the Reggio Emilia outdoor learning program enhances capabilities required to fulfill needs selected by our stakeholder group (those needs include: understanding, participation, creation, affection, identity, and freedom).

The capabilities needed to fulfill human needs were identified in interviews by members of the stakeholder group. For example, one of the needs selected by our stakeholder group is the need for affection. In the Reggio Emilia outdoor learning program under investigation, a hypothetical capability that a participant may have identified could include the capability to enjoy nature. In this example, I would look for evidence, in the form of activities and opportunities, indicating how this capability is developed by the Reggio Emilia outdoor learning program.

I will conduct eight to sixteen observations during the months of May and June. Due to limitations of resources and time, I will select the classrooms to be observed with the most extensive Reggio Emilia outdoor learning program (based on data collected during the interviews in March and April). Once the classrooms have been selected, the parents of the children in these classrooms will be contacted through a letter delivered via email through the principal. Once parents have indicated whether or not they consent and are comfortable with their child being part of a classroom observation, and they have had a chance to speak with their child themselves to confirm whether or not their child is consents and is comfortable with a classroom observation, I will then arrange an appropriate time to conduct my observation that is convenient to the teachers and students. Prior to my observation, I will also request the children's permission through a "circle time" talk in which I offer a simple explanation of my study and a verbal request of their permission. If there are students and/or parents who do not consent to being a part

of the observation component, I will provide those students a fun sticker, of their choosing, to wear during the observation in order to remind me of their opting out. At the end of the observation (or day), I will provide stickers, through the teacher, to the remainder of the class as well (so as to avoid having students opt out in order to get their hands on a fun sticker). I will also indicate this "sticker" arrangement to parents in the invitation letter.

If you agree to participate and allow me to conduct observations in your classroom, please contact me and I will reply to you through email to arrange an observation time and date that is convenient for you. Before the observation, I will give you a consent form to read, consider, and sign. I will review the consent form with you in person before the observation begins.

My handwritten observation documents will be locked in a personal filing cabinet with a physical lock at [redacted] Street, Winnipeg MB. Any documents containing personal information (such as the consent forms) will be kept in a locked filing cabinet and destroyed after they are no longer needed, one year after the thesis has been successfully defended, that is by November 30, 2018. All anonymized data will be stored in a separate locked filing cabinet from non-anonymized materials (such as contact information and consent letters, pseudonym guide) and destroyed one year after the thesis has been successfully defended. All anonymized electronic data and write-up related to this project by moving the files to the trash can and emptying the trash can one year after successfully defending the Ph.D. thesis. All hard copy data will be destroyed using a shredder.

If you choose to participate in the study, you may end the observation at any point, either during or before, or withdraw from the study completely at any time. You can contact the PI by email at Michael.Link@umanitoba.ca to withdraw from the study at any time. Should you choose to withdraw from the study all electronic and hard copy data collected will be promptly destroyed.

There are minimal risks to you as a result of participating in this study. This research has been approved by the Education and Nursing Research Ethics Board (ENREB). If you have any concerns or complaints about this project you may contact the Human Ethics Coordinator, Room 208-194 Dafoe Road (CTC Building), by phone at 204-474-7122, or by email at humanethics@umanitoba.ca. If you have clarification questions, contact myself at Michael.Link@umanitoba.ca, my advisor Dr. Charlotte Enns, by phone at 204-474-9009 or by email at charlotte.enns@umanitoba.ca, or members of my advisory committee.

If you would be interested in participating in this project, please email me at michael.link@umanitoba.ca **by no later than February 28th, 2017.** I will respond to your email to suggest possible meeting times within a few days of your response. Your participation is confidential. If you think of any questions, please do not hesitate to contact me.

I look forward to hearing from you.

Sincerely,
Michael Link

Appendix G

Invitation to parents of students

Faculty of Education

230 Education Building
University of Manitoba
Winnipeg, Manitoba
Canada R3T 2N2
Telephone (204) 474-9014
Fax (204) 474-7550

{Date}

Invitation to participate in a classroom observation for the study:
Nature Contact and Student Well-Being:
An Evaluation of a Reggio Emilia Outdoor Learning Program

Hello, my name is Michael Link, and I am a Ph.D. student in the Faculty of Education at the University of Manitoba. I am interested in the impact that a Reggio Emilia outdoor learning program has on student well-being. In order to conduct this research, I would like to conduct observations (indoors and outdoors) in your child's classroom to look for evidence of how might the Reggio Emilia outdoor learning program enhances capabilities required to fulfill needs selected by our stakeholder group (those needs include: understanding, participation, creation, affection, identity, and freedom).

The capabilities needed to fulfill human needs were identified in interviews by members of the stakeholder group for the study. For example, one of the needs selected by our stakeholder group is the need for affection. In the Reggio Emilia outdoor learning program under investigation, a hypothetical capability that a participant may have identified could include the capability to enjoy nature. In this example, I would look for evidence, in the form of activities and opportunities, indicating how this capability is developed by the Reggio Emilia outdoor learning program.

Your child's classroom has been selected for possible observation. I am seeking your permission, and your child's permission, to conduct one or more observations in their classroom. Once you have decided whether or not you consent and are comfortable with your child being part of a classroom observation, and once you have had a chance to speak with your child to confirm whether or not they consent and are comfortable with a classroom observation, I will then arrange an appropriate time to conduct my observation – a time that is convenient to the teachers and students. Prior to my observation, I will also request the children's permission through a "circle time" talk in which I offer a simple explanation of my study and a verbal request of their permission. If there are students and/or parents who do not consent to being a part of the observation component, I will provide those students a fun sticker, of their choosing, to wear during the observation in order to remind me of their opting out. At the end of the observation (or day), I will provide stickers, through the teacher, to the remainder of the class as well (so as to avoid having students opt out in order to get their hands on a fun sticker).

If you agree to participate and allow me to include your child in classroom observations in their classroom, please contact me and I will reply to you through email to arrange an observation time and date that is convenient for you. Before the observation, I will give you a consent form to read, consider, and sign.

My handwritten observation documents will be locked in a personal filing cabinet with a physical lock at [redacted] Street, Winnipeg MB. Any documents containing personal information (such as the consent forms) will be kept in a locked filing cabinet and destroyed after they are no longer needed, one year after the thesis has been successfully defended, that is by November 30, 2018. All anonymized data will be stored in a separate locked filing cabinet from non-anonymized materials (such as contact information and consent letters, pseudonym guide) and destroyed one year after the thesis has been successfully defended. All anonymized electronic data and write-up related to this project by moving the files to the trash can and emptying the trash can one year after successfully defending the Ph.D. thesis. All hard copy data will be destroyed using a shredder.

If you consent to allow your child to participate in the study, you may end the observation at any point, either during or before, or withdraw from the study completely at any time. You can contact the PI by email at Michael.Link@umanitoba.ca to withdraw from the study at any time. If your child wishes to withdraw the observation at any time, including during the observation, they can indicate this wish to either me, their teacher, or you, their parent. Teacher or parent can pass this message to me directly or via email. Should you choose to withdraw from the study all electronic and hard copy data collected will be promptly destroyed.

There are minimal risks to your child as a result of participating in this study. This research has been approved by the Education and Nursing Research Ethics Board (ENREB). If you have any concerns or complaints about this project you may contact the Human Ethics Coordinator, Room 208-194 Dafoe Road (CTC Building), by phone at 204-474-7122, or by email at humanethics@umanitoba.ca. If you have clarification questions, contact myself at Michael.Link@umanitoba.ca, my advisor Dr. Charlotte Enns, by phone at 204-474-9009 or by email at charlotte.enns@umanitoba.ca, or members of my advisory committee.

If you would be interested in participating in this project, please email me at michael.link@umanitoba.ca **by no later than February 28th, 2017.** I will respond to your email to suggest possible meeting times within a few days of your response. Your participation is confidential. If you think of any questions, please do not hesitate to contact me.

I look forward to hearing from you.

Sincerely,

Michael Link

Appendix H

Informed consent form – participation in interview (teacher)

Faculty of Education

230 Education Building
University of Manitoba
Winnipeg, Manitoba
Canada R3T 2N2
Telephone (204) 474-9014
Fax (204) 474-7550

{Date}

Informed Consent Form

Study Title: Nature Contact and Student Well-Being: An Evaluation of a Reggio Emilia Outdoor Learning Program

Principal Investigator: Michael Link, Faculty of Education, University of Manitoba
204-474-9975; Michael.Link@umanitoba.ca

Degree: Doctor of Philosophy in Education, Faculty of Education

Supervisor: Dr. Charlotte Enns, **Associate Dean (Graduate & Professional Programs, and Research); Professor**, Educational Administration, Foundations & Psychology (EAF&P); charlotte.enns@umanitoba.ca

Hello, my name is Michael Link, and I am a Ph.D. student in the Faculty of Education at the University of Manitoba. I am interested in the impact that a Reggio Emilia outdoor learning program has on student well-being. In order to conduct this research, I would like to engage interested individuals in a small group interview, with fellow teachers, regarding your school's Reggio Emilia approach to outdoor learning. The interview has two main focuses:

3. What capabilities are required to fulfill the human needs identified by our stakeholder group? (these needs include: affection, participation, identity, freedom, creation, and understanding)
4. How might the Reggio Emilia outdoor learning program enhance these capabilities? What have you observed or experienced?

For example, one of the needs selected by our stakeholder group for study is the need for affection. In the Reggio Emilia outdoor learning program under investigation, a hypothetical capability that a participant might identify may include the capability to enjoy nature. In this example, I would ask how this capability is developed by the Reggio Emilia outdoor learning program. I would also ask if you can think of any evidence of activities or opportunities which helps to develop in students the capacity to enjoy nature.

I wish to recruit approximately eight teachers, five parents, the school principal, and three students to participate in semi-structured interviews in March and April 2017. Those who respond may be accepted as participants in the project and will be contacted through email to arrange a meeting time, date and location convenient to participants. Interviews may take place either within or outside of school hours.

For the purpose of this study, I will also gather data during eight to sixteen classroom observations in May and June 2017, as well as through the analysis of teacher documentation data and data collected from the school website.

This consent form, a copy of which I will leave with you for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully.

Project Description:

An increasing number of children today are disconnected from nature. It has been argued that a disconnection from nature diminishes human well-being and that a separation from the natural world impairs the capacity to live as fully human. While the literature indicates that nature contact benefits human well-being, I am specifically interested in how particular outdoor programs and interventions in a school setting impact well-being. Broadly speaking, the purpose of this research is to consider what impact outdoor learning may have on student well-being. Well-being is a concept that describes positive indicators leading to a high quality of life or a sense of wellness, for example, having a supportive network of friends and family, or engagement in meaningful activities or work. Assessing well-being investigates the factors in a person's life that leads to positive outcomes rather than a traditional "health-care" approach which has characteristically been a response to negative outcomes. A fundamental aspect of human well-being is the development of a sense of agency and meaning in the way we live our lives. A Reggio Emilia-inspired approach to outdoor learning may provide that sense of agency and meaning for the many teachers and students who are eager to find connections between what they teach and learn about in the classroom and what exists in the world outside.

The central question of my research is as follows: *How does a particular approach to outdoor learning impact student well-being?* The benefits of nature-contact for well-being have been firmly established in the literature. However, there is a clear need for research documenting the impact on well-being in a school setting. My research project consists of two phases. In the first phase, conducted in January 2017 (ENREB Protocol # E2016:080 (HS19940), the project stakeholders (a group of teachers, parents, and the school principal) discussed the role of well-being in schools and selected six aspects of well-being to study - they are: understanding, affection, participation, identity,

creation, and freedom. In phase two the impact of the Reggio Emilia-inspired outdoor learning program on the selected aspects of student well-being will be investigated. This phase of research will: 1. idenitfy the capabilities required to fulfill the needs identified in phase one; 2. explore the impact the Reggio Emilia outdoor learning program has in enhancing identified capabilities, including an investigation of the "ideal" of the program that links to identified capabilities and evidence that validates the ideal.

Location and Time Requirement:
Participation in this study will require approximately one hour of your time and would take place at the school site or location convenient for you. I will request that you permit me to audio record the meeting with a digital recorder for later transcription. Beyond the one-hour interview meeting you will be invited through e-mail to review the transcribed document over a two-week period, in order to make any changes or additions to the transcribed meeting. This will be a group interview with one or two of your fellow teachers.

Participation in this project is completely voluntary and you may decline to answer any question or withdraw from the study without any negative consequences regarding the services you may be receiving from the government and social services agencies discussed in the interview. Participants can contact the PI by email at michael.link@umanitoba.ca to withdraw from the study at any time.

Confidentiality:
I will keep any information gathered in this research strictly confidential. The interview will be transcribed by the PI onto a macbook pro laptop computer (within two weeks of each interview) that is user password protected. Transcribed data will then be anonymized. Original data will be printed and locked in a personal filing cabinet with a physical lock, and saved on a password protected hard dive. Anonymized data will be interpreted and coded using the same home computer that is password protected. Data that has identifying information will be stored in a separate filing drawer from the anonymized data. You will not be named or identifiable in any reports of this study. If any statement you made during this interview is used in a research report it will be attributed to an anonymous source. Information containing personal identifiers (for example, this consent form) will be destroyed one year after the PI has successfully fulfilled the requirements for the doctoral thesis, that is by November 30, 2018. All anonymized data will be stored in a separate locked filing cabinet from non-anonymized materials (such as contact information and consent letters, pseudonym guide). Identifying interview transcript files will be deleted and trash can emptied (if electronic) and destroyed (if hard copy) by shredding once the project reaches its conclusion. Anonymized data will be destroyed one year after the thesis has been successfully defended.

Dissemination:
Dissemination of the findings from this study will be used for the PhD thesis. It is also anticipated that a summary of the study findings will be written up for the purposes of

submitting to academic or professional journals for publication or conference presentations.

Risks and Benefits:
There are minimal risks for participants in this study.

Consent:
Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and /or refrain from answering any questions you prefer to omit, without prejudice or consequence. Participants can contact the PI by email at michael.link@umanitoba.ca to withdraw from the study at any time. Should you choose to withdraw from the study all electronic and hard copy data collected will be promptly destroyed. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

The University of Manitoba may look at your research records to see that the research is being done in a safe and proper way.

This research has been approved by the Education and Nursing Research Ethics Board (ENREB). If participants have any concerns or complaints about this project you may contact the Human Ethics Coordinator, Room 208-194 Dafoe Road (CTC Building) or by email at humanethics@umanitoba.ca. If participants have clarification questions, they should contact myself at michael.link@umanitoba.ca, Dr. Charlotte Enns, charlotte.enns@umanitoba.ca, or members of my advisory committee.

Participant's Signature Date

Researcher Signature Date

Please check below if you wish to receive a summary of the results of this project.

____ Yes, please send me a summary of the results electronically at:
_____

____ Yes, please send me a summary of the results in hardcopy by mail to:
_____
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Appendix I

Informed consent form – participation in interview (principal)

UNIVERSITY OF MANITOBA

Faculty of Education

230 Education Building
University of Manitoba
Winnipeg, Manitoba
Canada R3T 2N2
Telephone (204) 474-9014
Fax (204) 474-7550

{Date}

Informed Consent Form

Study Title: Nature Contact and Student Well-Being: An Evaluation of a Reggio Emilia Outdoor Learning Program

Principal Investigator: Michael Link, Faculty of Education, University of Manitoba
204-474-9975; Michael.Link@umanitoba.ca

Degree: Doctor of Philosophy in Education, Faculty of Education

Supervisor: Dr. Charlotte Enns, **Associate Dean (Graduate & Professional Programs, and Research); Professor**, Educational Administration, Foundations & Psychology (EAF&P); charlotte.enns@umanitoba.ca

Hello, my name is Michael Link, and I am a Ph.D. student in the Faculty of Education at the University of Manitoba. I am interested in the impact that a Reggio Emilia outdoor learning program has on student well-being. In order to conduct this research, I would like to engage interested individuals in an interview regarding your school's Reggio Emilia approach to outdoor learning. The interview has two main focuses:

- What capabilities are required to fulfill the human needs identified by our stakeholder group? (these needs include: affection, participation, identity, freedom, creation, and understanding)
- How might the Reggio Emilia outdoor learning program enhance these capabilities? What have you observed or experienced?

For example, one of the needs selected by our stakeholder group for study is the need for affection. In the Reggio Emilia outdoor learning program under investigation, a hypothetical capability that a participant might identify may include the capability to enjoy nature. In this example, I would ask how this capability is developed by the Reggio Emilia outdoor learning program. I would also ask if you can think of any evidence of activities or opportunities which helps to develop in students the capacity to enjoy nature.

I wish to recruit approximately eight teachers, five parents, the school principal, and three students to participate in semi-structured interviews in March and April 2017. Those who respond may be accepted as participants in the project and will be contacted through email to arrange a meeting time, date and location convenient to participants. Interviews may take place either within or outside of school hours.

For the purpose of this study, I will also gather data during eight to sixteen classroom observations in May and June 2017, as well as through the analysis of teacher documentation data and data collected from the school website.

This consent form, a copy of which I will leave with you for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully.

Project Description:

An increasing number of children today are disconnected from nature. It has been argued that a disconnection from nature diminishes human well-being and that a separation from the natural world impairs the capacity to live as fully human. While the literature indicates that nature contact benefits human well-being, I am specifically interested in how particular outdoor programs and interventions in a school setting impact well-being. Broadly speaking, the purpose of this research is to consider what impact outdoor learning may have on student well-being. Well-being is a concept that describes positive indicators leading to a high quality of life or a sense of wellness, for example, having a supportive network of friends and family, or engagement in meaningful activities or work. Assessing well-being investigates the factors in a person's life that leads to positive outcomes rather than a traditional "health-care" approach which has characteristically been a response to negative outcomes. A fundamental aspect of human well-being is the development of a sense of agency and meaning in the way we live our lives. A Reggio Emilia-inspired approach to outdoor learning may provide that sense of agency and meaning for the many teachers and students who are eager to find connections between what they teach and learn about in the classroom and what exists in the world outside.

The central question of my research is as follows: *How does a particular approach to outdoor learning impact student well-being?* The benefits of nature-contact for well-being have been firmly established in the literature. However, there is a clear need for research documenting the impact on well-being in a school setting. My research project consists of two phases. In the first phase, conducted in January 2017 (ENREB Protocol # E2016:080 (HS19940), the project stakeholders (a group of teachers, parents, and the school principal) discussed the role of well-being in schools and selected six aspects of well-being to study - they are: understanding, affection, participation, identity,

creation, and freedom. In phase two the impact of the Reggio Emilia-inspired outdoor learning program on the selected aspects of student well-being will be investigated. This phase of research will: 1. idenitfy the capabilities required to fulfill the needs identified in phase one; 2. explore the impact the Reggio Emilia outdoor learning program has in enhancing identified capabilities, including an investigation of the "ideal" of the program that links to identified capabilities and evidence that validates the ideal.

Location and Time Requirement:

Participation in this study will require approximately one hour of your time and would take place at the school site or location convenient for you. I will request that you permit me to audio record the meeting with a digital recorder for later transcription. Beyond the one-hour interview meeting you will be invited through e-mail to review the transcribed document over a two-week period, in order to make any changes or additions to the transcribed meeting.

Participation in this project is completely voluntary and you may decline to answer any question or withdraw from the study without any negative consequences regarding the services you may be receiving from the government and social services agencies discussed in the interview. Participants can contact the PI by email at michael.link@umanitoba.ca to withdraw from the study at any time.

Confidentiality:

I will keep any information gathered in this research strictly confidential. The interview will be transcribed by the PI onto a macbook pro laptop computer (within two weeks of each interview) that is user password protected. Transcribed data will then be anonymized. Original data will be printed and locked in a personal filing cabinet with a physical lock, and saved on a password protected hard dive. Anonymized data will be interpreted and coded using the same home computer that is password protected. Data that has identifying information will be stored in a separate filing drawer from the anonymized data. You will not be named or identifiable in any reports of this study. If any statement you made during this interview is used in a research report it will be attributed to an anonymous source. Information containing personal identifiers (for example, this consent form) will be destroyed one year after the PI has successfully fulfilled the requirements for the doctoral thesis, that is by November 30, 2018. All anonymized data will be stored in a separate locked filing cabinet from non-anonymized materials (such as contact information and consent letters, pseudonym guide). Identifying interview transcript files will be deleted and trash can emptied (if electronic) and destroyed (if hard copy) by shredding once the project reaches its conclusion. Anonymized data will be destroyed one year after the thesis has been successfully defended.

Dissemination:

Dissemination of the findings from this study will be used for the PhD thesis. It is also anticipated that a summary of the study findings will be written up for the purposes of submitting to academic or professional journals for publication or conference presentations.

Risks and Benefits:
There are minimal risks for participants in this study.

Consent:
Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and /or refrain from answering any questions you prefer to omit, without prejudice or consequence. Participants can contact the PI by email at michael.link@umanitoba.ca to withdraw from the study at any time. Should you choose to withdraw from the study all electronic and hard copy data collected will be promptly destroyed. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

The University of Manitoba may look at your research records to see that the research is being done in a safe and proper way.

This research has been approved by the Education and Nursing Research Ethics Board (ENREB). If participants have any concerns or complaints about this project you may contact the Human Ethics Coordinator, Room 208-194 Dafoe Road (CTC Building) or by email at humanethics@umanitoba.ca. If participants have clarification questions, they should contact myself at michael.link@umanitoba.ca, Dr. Charlotte Enns, charlotte.enns@umanitoba.ca, or members of my advisory committee.

Participant's Signature Date

Researcher Signature Date

Please check below if you wish to receive a summary of the results of this project.

____ Yes, please send me a summary of the results electronically at:
_____

____ Yes, please send me a summary of the results in hardcopy by mail to:
_____
_____
_____

Appendix J

Informed consent form – participation in interview (parents)

University of Manitoba

Faculty of Education

230 Education Building
University of Manitoba
Winnipeg, Manitoba
Canada R3T 2N2
Telephone (204) 474-9014
Fax (204) 474-7550

{Date}

Informed Consent Form

Study Title: Nature Contact and Student Well-Being: An Evaluation of a Reggio Emilia Outdoor Learning Program

Principal Investigator: Michael Link, Faculty of Education, University of Manitoba
204-474-9975; Michael.Link@umanitoba.ca

Degree: Doctor of Philosophy in Education, Faculty of Education

Supervisor: Dr. Charlotte Enns, **Associate Dean (Graduate & Professional Programs, and Research); Professor**, Educational Administration, Foundations & Psychology (EAF&P); charlotte.enns@umanitoba.ca

Hello, my name is Michael Link, and I am a Ph.D. student in the Faculty of Education at the University of Manitoba. I am interested in the impact that a Reggio Emilia outdoor learning program has on student well-being. In order to conduct this research, I would like to engage interested individuals in an interview regarding your school's Reggio Emilia approach to outdoor learning. The interview has two main focuses:

- What capabilities are required to fulfill the human needs identified by our stakeholder group? (these needs include: affection, participation, identity, freedom, creation, and understanding)
- How might the Reggio Emilia outdoor learning program enhance these capabilities? What have you observed or experienced?

For example, one of the needs selected by our stakeholder group for study is the need for affection. In the Reggio Emilia outdoor learning program under investigation, a hypothetical capability that a participant might identify may include the capability to enjoy nature. In this example, I would ask how this capability is developed by the Reggio Emilia outdoor learning program. I would also ask if you can think of any evidence of activities or opportunities which helps to develop in students the capacity to enjoy nature.

I wish to recruit approximately eight teachers, five parents, the school principal, and three students to participate in semi-structured interviews in March and April 2017. Those who respond may be accepted as participants in the project and will be contacted through email to arrange a meeting time, date and location convenient to participants. Interviews may take place either within or outside of school hours.

For the purpose of this study, I will also gather data during eight to sixteen classroom observations in May and June 2017, as well as through the analysis of teacher documentation data and data collected from the school website.

This consent form, a copy of which I will leave with you for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully.

Project Description:

An increasing number of children today are disconnected from nature. It has been argued that a disconnection from nature diminishes human well-being and that a separation from the natural world impairs the capacity to live as fully human. While the literature indicates that nature contact benefits human well-being, I am specifically interested in how particular outdoor programs and interventions in a school setting impact well-being. Broadly speaking, the purpose of this research is to consider what impact outdoor learning may have on student well-being. Well-being is a concept that describes positive indicators leading to a high quality of life or a sense of wellness, for example, having a supportive network of friends and family, or engagement in meaningful activities or work. Assessing well-being investigates the factors in a person's life that leads to positive outcomes rather than a traditional "health-care" approach which has characteristically been a response to negative outcomes. A fundamental aspect of human well-being is the development of a sense of agency and meaning in the way we live our lives. A Reggio Emilia-inspired approach to outdoor learning may provide that sense of agency and meaning for the many teachers and students who are eager to find connections between what they teach and learn about in the classroom and what exists in the world outside.

The central question of my research is as follows: *How does a particular approach to outdoor learning impact student well-being?* The benefits of nature-contact for well-being have been firmly established in the literature. However, there is a clear need for research documenting the impact on well-being in a school setting. My research project consists of two phases. In the first phase, conducted in January 2017 (ENREB Protocol # E2016:080 (HS19940), the project stakeholders (a group of teachers, parents, and the school principal) discussed the role of well-being in schools and selected six aspects of well-being to study - they are: understanding, affection, participation, identity,

creation, and freedom. In phase two the impact of the Reggio Emilia-inspired outdoor learning program on the selected aspects of student well-being will be investigated. This phase of research will: 1. idenitfy the capabilities required to fulfill the needs identified in phase one; 2. explore the impact the Reggio Emilia outdoor learning program has in enhancing identified capabilities, including an investigation of the "ideal" of the program that links to identified capabilities and evidence that validates the ideal.

Location and Time Requirement:

Participation in this study will require approximately one hour of your time and would take place at the school site or location convenient for you. I will request that you permit me to audio record the meeting with a digital recorder for later transcription. Beyond the one-hour interview meeting you will be invited through e-mail to review the transcribed document over a two-week period, in order to make any changes or additions to the transcribed meeting. This will be a small group interview with one or two of your fellow parents.

Participation in this project is completely voluntary and you may decline to answer any question or withdraw from the study without any negative consequences regarding the services you may be receiving from the government and social services agencies discussed in the interview. Participants can contact the PI by email at michael.link@umanitoba.ca to withdraw from the study at any time.

Confidentiality:

I will keep any information gathered in this research strictly confidential. The interview will be transcribed by the PI onto a macbook pro laptop computer (within two weeks of each interview) that is user password protected. Transcribed data will then be anonymized. Original data will be printed and locked in a personal filing cabinet with a physical lock, and saved on a password protected hard dive. Anonymized data will be interpreted and coded using the same home computer that is password protected. Data that has identifying information will be stored in a separate filing drawer from the anonymized data. You will not be named or identifiable in any reports of this study. If any statement you made during this interview is used in a research report it will be attributed to an anonymous source. Information containing personal identifiers (for example, this consent form) will be destroyed one year after the PI has successfully fulfilled the requirements for the doctoral thesis, that is by November 30, 2018. All anonymized data will be stored in a separate locked filing cabinet from non-anonymized materials (such as contact information and consent letters, pseudonym guide). Identifying interview transcript files will be deleted and trash can emptied (if electronic) and destroyed (if hard copy) by shredding once the project reaches its conclusion. Anonymized data will be destroyed one year after the thesis has been successfully defended.

Dissemination:

Dissemination of the findings from this study will be used for the PhD thesis. It is also anticipated that a summary of the study findings will be written up for the purposes of submitting to academic or professional journals for publication or conference presentations.

Risks and Benefits:
There are minimal risks for participants in this study.

Consent:
Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and /or refrain from answering any questions you prefer to omit, without prejudice or consequence. Participants can contact the PI by email at michael.link@umanitoba.ca to withdraw from the study at any time. Should you choose to withdraw from the study all electronic and hard copy data collected will be promptly destroyed. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

The University of Manitoba may look at your research records to see that the research is being done in a safe and proper way.

This research has been approved by the Education and Nursing Research Ethics Board (ENREB). If participants have any concerns or complaints about this project you may contact the Human Ethics Coordinator, Room 208-194 Dafoe Road (CTC Building) or by email at humanethics@umanitoba.ca. If participants have clarification questions, they should contact myself at michael.link@umanitoba.ca, Dr. Charlotte Enns, charlotte.enns@umanitoba.ca, or members of my advisory committee.

Participant's Signature Date

Researcher Signature Date

Please check below if you wish to receive a summary of the results of this project.

____ Yes, please send me a summary of the results electronically at:
_____

____ Yes, please send me a summary of the results in hardcopy by mail to:
_____
_____
_____

Appendix K

Informed consent form – participation in interview (parents of students)

UNIVERSITY OF MANITOBA

Faculty of Education

230 Education Building
University of Manitoba
Winnipeg, Manitoba
Canada R3T 2N2
Telephone (204) 474-9014
Fax (204) 474-7550

{Date}

Informed Consent Form

Study Title: Nature Contact and Student Well-Being: An Evaluation of a Reggio Emilia Outdoor Learning Program

Principal Investigator: Michael Link, Faculty of Education, University of Manitoba
204-474-9975; Michael.Link@umanitoba.ca

Degree: Doctor of Philosophy in Education, Faculty of Education

Supervisor: Dr. Charlotte Enns, **Associate Dean (Graduate & Professional Programs, and Research); Professor**, Educational Administration, Foundations & Psychology (EAF&P); charlotte.enns@umanitoba.ca

Hello, my name is Michael Link, and I am a Ph.D. student in the Faculty of Education at the University of Manitoba. I am interested in the impact that a Reggio Emilia outdoor learning program has on student well-being. In order to conduct this research, I would like to engage interested individuals in an interview regarding your school's Reggio Emilia approach to outdoor learning. The focus of the interview will be to identify activities and opportunities that this program provides that may enhance capabilities to fulfill identified human needs.

For example, one of the needs selected by our stakeholder group for study is the need for affection. In the Reggio Emilia outdoor learning program under investigation, a hypothetical capability that a participant might identify may include the capability to enjoy nature. In this example, I would ask how this capability is developed by the Reggio Emilia outdoor learning program. I would also ask if you can think of any evidence of activities or opportunities which helps to develop in students the capacity to enjoy nature.

I wish to recruit approximately eight teachers, five parents, the school principal, and three students to participate in semi-structured interviews in March and April 2017. Those who respond may be accepted as participants in the project and will be contacted through email to arrange a meeting time, date and location convenient to participants. Interviews may take place either within or outside of school hours.

For the purpose of this study, I will also gather data during eight to sixteen classroom observations in May and June 2017, as well as through the analysis of teacher documentation data and data collected from the school website.

This consent form, a copy of which I will leave with you for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully.

Project Description:

An increasing number of children today are disconnected from nature. It has been argued that a disconnection from nature diminishes human well-being and that a separation from the natural world impairs the capacity to live as fully human. While the literature indicates that nature contact benefits human well-being, I am specifically interested in how particular outdoor programs and interventions in a school setting impact well-being. Broadly speaking, the purpose of this research is to consider what impact outdoor learning may have on student well-being. Well-being is a concept that describes positive indicators leading to a high quality of life or a sense of wellness, for example, having a supportive network of friends and family, or engagement in meaningful activities or work. Assessing well-being investigates the factors in a person's life that leads to positive outcomes rather than a traditional "health-care" approach which has characteristically been a response to negative outcomes. A fundamental aspect of human well-being is the development of a sense of agency and meaning in the way we live our lives. A Reggio Emilia-inspired approach to outdoor learning may provide that sense of agency and meaning for the many teachers and students who are eager to find connections between what they teach and learn about in the classroom and what exists in the world outside.

The central question of my research is as follows: *How does a particular approach to outdoor learning impact student well-being?* The benefits of nature-contact for well-being have been firmly established in the literature. However, there is a clear need for research documenting the impact on well-being in a school setting. My research project consists of two phases. In the first phase, conducted in January 2017 (ENREB Protocol # E2016:080 (HS19940), the project stakeholders (a group of teachers, parents, and the school principal) discussed the role of well-being in schools and selected six aspects of well-being to study - they are: understanding, affection, participation, identity, creation, and freedom. In phase two the impact of the Reggio Emilia-inspired outdoor learning program on the selected aspects of student well-being will be investigated. This phase of research will: 1. idenitfy the capabilities required to fulfill the needs identified in phase one; 2. explore the impact the Reggio Emilia outdoor learning program has in enhancing identified capabilities, including an investigation of the "ideal" of the program that links to identified capabilities and evidence that validates the ideal.

Location and Time Requirement:
Participation in this study will require less than 20 minutes of your child's time and would take place at the school site or location convenient for you. I will request that you permit me to audio record the meeting with a digital recorder for later transcription. Beyond the under 20 minute interview meeting you will be invited through e-mail to review the transcribed document with your child over a two-week period, in order to make any changes or additions to the transcribed meeting. This will be an individual interview. Parents are welcome to sit in on the interview.

Participation in this project is completely voluntary and you may decline to answer any question or withdraw from the study without any negative consequences regarding the services you may be receiving from the government and social services agencies discussed in the interview. Participants can contact the PI by email at michael.link@umanitoba.ca to withdraw from the study at any time.

Confidentiality:
I will keep any information gathered in this research strictly confidential. The interview will be transcribed by the PI onto a macbook pro laptop computer (within two weeks of each interview) that is user password protected. Transcribed data will then be anonymized. Original data will be printed and locked in a personal filing cabinet with a physical lock, and saved on a password protected hard dive. Anonymized data will be interpreted and coded using the same home computer that is password protected. Data that has identifying information will be stored in a separate filing drawer from the anonymized data. You will not be named or identifiable in any reports of this study. If any statement you made during this interview is used in a research report it will be attributed to an anonymous source. Information containing personal identifiers (for example, this consent form) will be destroyed one year after the PI has successfully fulfilled the requirements for the doctoral thesis, that is by November 30, 2018. All anonymized data will be stored in a separate locked filing cabinet from non-anonymized materials (such as contact information and consent letters, pseudonym guide). Identifying interview transcript files will be deleted and trash can emptied (if electronic) and destroyed (if hard copy) by shredding once the project reaches its conclusion. Anonymized data will be destroyed one year after the thesis has been successfully defended.

Dissemination:
Dissemination of the findings from this study will be used for the PhD thesis. It is also anticipated that a summary of the study findings will be written up for the purposes of submitting to academic or professional journals for publication or conference presentations.

Risks and Benefits:
There are minimal risks for participants in this study.

Consent:
Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and /or refrain from answering any questions you prefer to omit, without prejudice or consequence. Participants can contact the PI by email at michael.link@umanitoba.ca to withdraw from the study at any time. Should you choose to withdraw from the study all electronic and hard copy data collected will be promptly destroyed. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

The University of Manitoba may look at your research records to see that the research is being done in a safe and proper way.

This research has been approved by the Education and Nursing Research Ethics Board (ENREB). If participants have any concerns or complaints about this project you may contact the Human Ethics Coordinator, Room 208-194 Dafoe Road (CTC Building) or by email at humanethics@umanitoba.ca. If participants have clarification questions, they should contact myself at michael.link@umanitoba.ca, Dr. Charlotte Enns, charlotte.enns@umanitoba.ca, or members of my advisory committee.

Participant's Signature Date

Researcher Signature Date

Please check below if you wish to receive a summary of the results of this project.

____ Yes, please send me a summary of the results electronically at:
_____

____ Yes, please send me a summary of the results in hardcopy by mail to:
_____
_____
_____

Appendix L

Informed consent form – participation in classroom observation (teacher)

UNIVERSITY OF MANITOBA

Faculty of Education

230 Education Building
University of Manitoba
Winnipeg, Manitoba
Canada R3T 2N2
Telephone (204) 474-9014
Fax (204) 474-7550

{Date}

Informed Consent Form

Study Title: Nature Contact and Student Well-Being: An Evaluation of a Reggio Emilia Outdoor Learning Program

Principal Investigator: Michael Link, Faculty of Education, University of Manitoba
204-474-9975; Michael.Link@umanitoba.ca

Degree: Doctor of Philosophy in Education, Faculty of Education

Supervisor: Dr. Charlotte Enns, **Associate Dean (Graduate & Professional Programs, and Research); Professor**, Educational Administration, Foundations & Psychology (EAF&P); charlotte.enns@umanitoba.ca

Hello, my name is Michael Link, and I am a Ph.D. student in the Faculty of Education at the University of Manitoba. I am interested in the impact that a Reggio Emilia outdoor learning program has on student well-being. In order to conduct this research, I would like to conduct classroom observations (indoors and outdoors) to look for evidence of how might the Reggio Emilia outdoor learning program enhances capabilities required to fulfill needs selected by our stakeholder group (those needs include: understanding, participation, creation, affection, identity, and freedom).

The capabilities needed to fulfill human needs were identified in interviews by members of the stakeholder group. For example, one of the needs selected by our stakeholder group is the need for affection. In the Reggio Emilia outdoor learning program under investigation, a hypothetical capability that a participant may have identified could include the capability to enjoy nature. In this example, I would look for

evidence, in the form of activities and opportunities, indicating how this capability is developed by the Reggio Emilia outdoor learning program.

I will conduct eight to sixteen observations during the months of May and June. Due to limitations of resources and time, I will select the classrooms to be observed with the most extensive Reggio Emilia outdoor learning program (based on data collected during the interviews in March and April). Once the classrooms have been selected, the parents of the children in these classrooms will be contacted through a letter delivered via email through the principal. Once parents have indicated whether or not they consent and are comfortable with their child being part of a classroom observation, and they have had a chance to speak with their child themselves to confirm whether or not their child is consents and is comfortable with a classroom observation, I will then arrange an appropriate time to conduct my observation that is convenient to the teachers and students. Prior to my observation, I will also request the children's permission through a "circle time" talk in which I offer a simple explanation of my study and a verbal request of their permission. If there are students and/or parents who do not consent to being a part of the observation component, I will provide those students a fun sticker, of their choosing, to wear during the observation in order to remind me of their opting out. At the end of the observation (or day), I will provide stickers, through the teacher, to the remainder of the class as well (so as to avoid having students opt out in order to get their hands on a fun sticker). I will also indicate this "sticker" arrangement to parents in the invitation letter.

Project Description:

An increasing number of children today are disconnected from nature. It has been argued that a disconnection from nature diminishes human well-being and that a separation from the natural world impairs the capacity to live as fully human. While the literature indicates that nature contact benefits human well-being, I am specifically interested in how particular outdoor programs and interventions in a school setting impact well-being. Broadly speaking, the purpose of this research is to consider what impact outdoor learning may have on student well-being. Well-being is a concept that describes positive indicators leading to a high quality of life or a sense of wellness, for example, having a supportive network of friends and family, or engagement in meaningful activities or work. Assessing well-being investigates the factors in a person's life that leads to positive outcomes rather than a traditional "health-care" approach which has characteristically been a response to negative outcomes. A fundamental aspect of human well-being is the development of a sense of agency and meaning in the way we live our lives. A Reggio Emilia-inspired approach to outdoor learning may provide that sense of agency and meaning for the many teachers and students who are eager to find connections between what they teach and learn about in the classroom and what exists in the world outside.

The central question of my research is as follows: *How does a particular approach to outdoor learning impact student well-being?* The benefits of nature-contact for well-being have been firmly established in the literature. However, there is a clear need for research documenting the impact on well-being in a school setting. My research project consists of two phases. In the first phase, conducted in January 2017 (ENREB Protocol # E2016:080 (HS19940), the project stakeholders (a group of teachers, parents,

and the school principal) discussed the role of well-being in schools and selected six aspects of well-being to study - they are: understanding, affection, participation, identity, creation, and freedom. In phase two the impact of the Reggio Emilia-inspired outdoor learning program on the selected aspects of student well-being will be investigated. This phase of research will: 1. idenitfy the capabilities required to fulfill the needs identified in phase one; 2. explore the impact the Reggio Emilia outdoor learning program has in enhancing identified capabilities, including an investigation of the "ideal" of the program that links to identified capabilities and evidence that validates the ideal.

Location and Time Requirement:

Participation in this study will not require any of your time, outside of normal classroom activities, and would take place at the school site.

Participation in this project is completely voluntary and you may to withdraw from the observation and from the study without any negative consequences regarding the services you may be receiving from the government and social services agencies discussed in the interview. Participants can contact the PI by email at michael.link@umanitoba.ca to withdraw from the study at any time.

Confidentiality:

My handwritten observation documents will be locked in a personal filing cabinet with a physical lock at 556 Ash Street, Winnipeg MB. Any documents containing personal information (such as the consent forms) will be kept in a locked filing cabinet and destroyed after they are no longer needed, one year after the thesis has been successfully defended, that is by November 30, 2018. All anonymized data will be stored in a separate locked filing cabinet from non-anonymized materials (such as contact information and consent letters, pseudonym guide) and destroyed one year after the thesis has been successfully defended. All anonymized electronic data and write-up related to this project by moving the files to the trash can and emptying the trash can one year after successfully defending the Ph.D. thesis. All hard copy data will be destroyed using a shredder.

Dissemination:

Dissemination of the findings from this study will be used for the PhD thesis. It is also anticipated that a summary of the study findings will be written up for the purposes of submitting to academic or professional journals for publication or conference presentations.

Risks and Benefits:

There are minimal risks for participants in this study.

Consent:

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and /or refrain from answering any questions you prefer to omit, without prejudice or consequence. Participants can contact the PI by email at michael.link@umanitoba.ca to withdraw from the study at any time. Should you

choose to withdraw from the study all electronic and hard copy data collected will be promptly destroyed. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

The University of Manitoba may look at your research records to see that the research is being done in a safe and proper way.

This research has been approved by the Education and Nursing Research Ethics Board (ENREB). If participants have any concerns or complaints about this project you may contact the Human Ethics Coordinator, Room 208-194 Dafoe Road (CTC Building) or by email at humanethics@umanitoba.ca. If participants have clarification questions, they should contact myself at michael.link@umanitoba.ca, Dr. Charlotte Enns, charlotte.enns@umanitoba.ca, or members of my advisory committee.

Participant's Signature Date

Researcher Signature Date

Please check below if you wish to receive a summary of the results of this project.

____ Yes, please send me a summary of the results electronically at:
_____

____ Yes, please send me a summary of the results in hardcopy by mail to:
_____
_____
_____

Appendix M

Informed consent form – participation in classroom observation (parents of students)

UNIVERSITY OF MANITOBA

Faculty of Education

230 Education Building
University of Manitoba
Winnipeg, Manitoba
Canada R3T 2N2
Telephone (204) 474-9014
Fax (204) 474-7550

{Date}

Informed Consent Form

Study Title: Nature Contact and Student Well-Being: An Evaluation of a Reggio Emilia Outdoor Learning Program

Principal Investigator: Michael Link, Faculty of Education, University of Manitoba
204-474-9975; Michael.Link@umanitoba.ca

Degree: Doctor of Philosophy in Education, Faculty of Education

Supervisor: Dr. Charlotte Enns, **Associate Dean (Graduate & Professional Programs, and Research); Professor**, Educational Administration, Foundations & Psychology (EAF&P); charlotte.enns@umanitoba.ca

Hello, my name is Michael Link, and I am a Ph.D. student in the Faculty of Education at the University of Manitoba. I am interested in the impact that a Reggio Emilia outdoor learning program has on student well-being. In order to conduct this research, I would like to conduct observations (indoors and outdoors) in your child's classroom to look for evidence of how might the Reggio Emilia outdoor learning program enhances capabilities required to fulfill needs selected by our stakeholder group (those needs include: understanding, participation, creation, affection, identity, and freedom).

The capabilities needed to fulfill human needs were identified in interviews by members of the stakeholder group for the study. For example, one of the needs selected by our stakeholder group is the need for affection. In the Reggio Emilia outdoor learning program under investigation, a hypothetical capability that a participant may have identified could include the capability to enjoy nature. In this example, I would look for

evidence, in the form of activities and opportunities, indicating how this capability is developed by the Reggio Emilia outdoor learning program.

Your child's classroom has been selected for possible observation. I am seeking your permission, and your child's permission, to conduct one or more observations in their classroom. Once you have decided whether or not you consent and are comfortable with your child being part of a classroom observation, and once you have had a chance to speak with your child to confirm whether or not they consent and are comfortable with a classroom observation, I will then arrange an appropriate time to conduct my observation – a time that is convenient to the teachers and students. Prior to my observation, I will also request the children's permission through a "circle time" talk in which I offer a simple explanation of my study and a verbal request of their permission. If there are students and/or parents who do not consent to being a part of the observation component, I will provide those students a fun sticker, of their choosing, to wear during the observation in order to remind me of their opting out. At the end of the observation (or day), I will provide stickers, through the teacher, to the remainder of the class as well (so as to avoid having students opt out in order to get their hands on a fun sticker).

Project Description:

An increasing number of children today are disconnected from nature. It has been argued that a disconnection from nature diminishes human well-being and that a separation from the natural world impairs the capacity to live as fully human. While the literature indicates that nature contact benefits human well-being, I am specifically interested in how particular outdoor programs and interventions in a school setting impact well-being. Broadly speaking, the purpose of this research is to consider what impact outdoor learning may have on student well-being. Well-being is a concept that describes positive indicators leading to a high quality of life or a sense of wellness, for example, having a supportive network of friends and family, or engagement in meaningful activities or work. Assessing well-being investigates the factors in a person's life that leads to positive outcomes rather than a traditional "health-care" approach which has characteristically been a response to negative outcomes. A fundamental aspect of human well-being is the development of a sense of agency and meaning in the way we live our lives. A Reggio Emilia-inspired approach to outdoor learning may provide that sense of agency and meaning for the many teachers and students who are eager to find connections between what they teach and learn about in the classroom and what exists in the world outside.

The central question of my research is as follows: *How does a particular approach to outdoor learning impact student well-being?* The benefits of nature-contact for well-being have been firmly established in the literature. However, there is a clear need for research documenting the impact on well-being in a school setting. My research project consists of two phases. In the first phase, conducted in January 2017 (ENREB Protocol # E2016:080 (HS19940), the project stakeholders (a group of teachers, parents, and the school principal) discussed the role of well-being in schools and selected six aspects of well-being to study - they are: understanding, affection, participation, identity, creation, and freedom. In phase two the impact of the Reggio Emilia-inspired outdoor learning program on the selected aspects of student well-being will be investigated. This phase of research will: 1. idenitfy the capabilities required to fulfill the needs identified in

phase one; 2. explore the impact the Reggio Emilia outdoor learning program has in enhancing identified capabilities, including an investigation of the "ideal" of the program that links to identified capabilities and evidence that validates the ideal.

Location and Time Requirement:
Participation in this study will not require any of your time, outside of normal classroom activities, and would take place at the school site.

Participation in this project is completely voluntary and you may to withdraw from the observation and from the study without any negative consequences regarding the services you may be receiving from the government and social services agencies discussed in the interview. Participants can contact the PI by email at michael.link@umanitoba.ca to withdraw from the study at any time.

Confidentiality:
My handwritten observation documents will be locked in a personal filing cabinet with a physical lock at 556 Ash Street, Winnipeg MB. Any documents containing personal information (such as the consent forms) will be kept in a locked filing cabinet and destroyed after they are no longer needed, one year after the thesis has been successfully defended, that is by November 30, 2018. All anonymized data will be stored in a separate locked filing cabinet from non-anonymized materials (such as contact information and consent letters, pseudonym guide) and destroyed one year after the thesis has been successfully defended. All anonymized electronic data and write-up related to this project by moving the files to the trash can and emptying the trash can one year after successfully defending the Ph.D. thesis. All hard copy data will be destroyed using a shredder.

Dissemination:
Dissemination of the findings from this study will be used for the PhD thesis. It is also anticipated that a summary of the study findings will be written up for the purposes of submitting to academic or professional journals for publication or conference presentations.

Risks and Benefits:
There are minimal risks for participants in this study.

Consent:
Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and /or refrain from answering any questions you prefer to omit, without prejudice or consequence. Participants can contact the PI by email at michael.link@umanitoba.ca to withdraw from the study at any time. Should you choose to withdraw from the study all electronic and hard copy data collected will be promptly destroyed. Your continued participation should be as informed as your initial

consent, so you should feel free to ask for clarification or new information throughout your participation.

The University of Manitoba may look at your research records to see that the research is being done in a safe and proper way.

This research has been approved by the Education and Nursing Research Ethics Board (ENREB). If participants have any concerns or complaints about this project you may contact the Human Ethics Coordinator, Room 208-194 Dafoe Road (CTC Building) or by email at humanethics@umanitoba.ca. If participants have clarification questions, they should contact myself at michael.link@umanitoba.ca, Dr. Charlotte Enns, charlotte.enns@umanitoba.ca, or members of my advisory committee.

Participant's Signature Date

Researcher Signature Date

Please check below if you wish to receive a summary of the results of this project.

____ Yes, please send me a summary of the results electronically at:
_____

____ Yes, please send me a summary of the results in hardcopy by mail to:
_____
_____
_____

Appendix N

Interview protocol for teachers

The following guiding questions will frame the interview. I will ask follow-up questions that are dependent upon the answers given (see below).

Understanding

- What is an important capability that you think is required to fulfill the need for understanding?
- How might the Reggio Emilia outdoor learning program support the development of that capability?
- What have you seen to back up this claim? What activities have the students been involved in within the Reggio Emilia outdoor learning program that would support the development of the capability you mentioned? What opportunities does this program afford in the development of this capability? What student responses have you witnessed that indicates that this capability is being developed?

Creation

- What is an important capability that you think is required to fulfill the need for creation?
- How might the Reggio Emilia outdoor learning program support the development of that capability?
- What have you seen to back up this claim? What activities have the students been involved in within the Reggio Emilia outdoor learning program that would support the development of the capability you mentioned? What opportunities does this program afford in the development of this capability? What student responses have you witnessed that indicates that this capability is being developed?

Affection

- What is an important capability that you think is required to fulfill the need for affection?
- How might the Reggio Emilia outdoor learning program support the development of that capability?
- What have you seen to back up this claim? What activities have the students been involved in within the Reggio Emilia outdoor learning program that would support the development of the capability you mentioned? What opportunities does this program afford in the development of this capability? What student responses have you witnessed that indicates that this capability is being developed?

Identity

- What is an important capability that you think is required to fulfill the need for identity?
- How might the Reggio Emilia outdoor learning program support the development of that capability?
- What have you seen to back up this claim? What activities have the students been involved in within the Reggio Emilia outdoor learning program that would support the development of the capability you mentioned? What opportunities does this program afford in the development of this capability? What student responses have you witnessed that indicates that this capability is being developed?

Participation

- What is an important capability that you think is required to fulfill the need for participation?
- How might the Reggio Emilia outdoor learning program support the development of that capability?
- What have you seen to back up this claim? What activities have the students been involved in within the Reggio Emilia outdoor learning program that would support the development of the capability you mentioned? What opportunities does this program afford in the development of this capability? What student responses have you witnessed that indicates that this capability is being developed?

Freedom

- What is an important capability that you think is required to fulfill the need for freedom?
- How might the Reggio Emilia outdoor learning program support the development of that capability?
- What have you seen to back up this claim? What activities have the students been involved in within the Reggio Emilia outdoor learning program that would support the development of the capability you mentioned? What opportunities does this program afford in the development of this capability? What student responses have you witnessed that indicates that this capability is being developed?

Follow-up Questions

I will ask follow-up questions depending on the answers given, for example, when participants are asked - what is an important capability that you think is required to fulfill the need for …? - I may ask the interviewee to expand on the description of this capability or to provide a clear connection between this capability and how it may help fulfill the need being addressed. With regards to the second question - how might the Reggio Emilia outdoor learning program support the development of that capability? – I may ask the interviewee to provide more details or if the response is focused solely on the Reggio Emilia philosophy, ask the participant to talk more about the outdoor learning

component in combination with the Reggio Emilia philosophy. Finally, with reference to the third cluster of questions, beginning with – what have you seen to back up this claim? – I may follow-up on the response here with a bit of prodding for more examples or more clear connections between examples and connections to the ideas behind the Reggio Emilia outdoor learning program.

Appendix O

Interview protocol for the principal

The following guiding questions will frame the interview. I will ask follow-up questions that are dependent upon the answers given (see below).

Understanding

- What is an important capability that you think is required to fulfill the need for understanding?
- How might the Reggio Emilia outdoor learning program support the development of that capability?
- What have you seen to back up this claim? What activities have the students been involved in within the Reggio Emilia outdoor learning program that would support the development of the capability you mentioned? What opportunities does this program afford in the development of this capability? What student responses have you witnessed that indicates that this capability is being developed?

Creation

- What is an important capability that you think is required to fulfill the need for creation?
- How might the Reggio Emilia outdoor learning program support the development of that capability?
- What have you seen to back up this claim? What activities have the students been involved in within the Reggio Emilia outdoor learning program that would support the development of the capability you mentioned? What opportunities does this program afford in the development of this capability? What student responses have you witnessed that indicates that this capability is being developed?

Affection

- What is an important capability that you think is required to fulfill the need for affection?
- How might the Reggio Emilia outdoor learning program support the development of that capability?
- What have you seen to back up this claim? What activities have the students been involved in within the Reggio Emilia outdoor learning program that would support the development of the capability you mentioned? What opportunities does this program afford in the development of this capability? What student responses have you witnessed that indicates that this capability is being developed?

Identity

- What is an important capability that you think is required to fulfill the need for identity?
- How might the Reggio Emilia outdoor learning program support the development of that capability?
- What have you seen to back up this claim? What activities have the students been involved in within the Reggio Emilia outdoor learning program that would support the development of the capability you mentioned? What opportunities does this program afford in the development of this capability? What student responses have you witnessed that indicates that this capability is being developed?

Participation

- What is an important capability that you think is required to fulfill the need for participation?
- How might the Reggio Emilia outdoor learning program support the development of that capability?
- What have you seen to back up this claim? What activities have the students been involved in within the Reggio Emilia outdoor learning program that would support the development of the capability you mentioned? What opportunities does this program afford in the development of this capability? What student responses have you witnessed that indicates that this capability is being developed?

Freedom

- What is an important capability that you think is required to fulfill the need for freedom?
- How might the Reggio Emilia outdoor learning program support the development of that capability?
- What have you seen to back up this claim? What activities have the students been involved in within the Reggio Emilia outdoor learning program that would support the development of the capability you mentioned? What opportunities does this program afford in the development of this capability? What student responses have you witnessed that indicates that this capability is being developed?

Follow-up Questions

I will ask follow-up questions depending on the answers given, for example, when participants are asked - what is an important capability that you think is required to fulfill the need for …? - I may ask the interviewee to expand on the description of this capability or to provide a clear connection between this capability and how it may help fulfill the need being addressed. With regards to the second question - how might the Reggio Emilia outdoor learning program support the development of that capability? – I may ask the interviewee to provide more details or if the response is focused solely on the Reggio Emilia philosophy, ask the participant to talk more about the outdoor learning

component in combination with the Reggio Emilia philosophy. Finally, with reference to the third cluster of questions, beginning with – what have you seen to back up this claim? – I may follow-up on the response here with a bit of prodding for more examples or more clear connections between examples and connections to the ideas behind the Reggio Emilia outdoor learning program.

Appendix P

Interview protocol for parents

The following guiding questions will frame the interview. I will ask follow-up questions that are dependent upon the answers given (see below).

Understanding

- What is an important capability that you think is required to fulfill the need for understanding?
- How might the way the teachers teach the students in the outdoors or in relation to the outdoors (Reggio Emilia outdoor learning program) support the development of that capability?
- What have you seen or heard your children talk about to back up this claim? What activities has your child been involved in that you've witnessed or that they've told you about that would support the development of the capability you mentioned? What opportunities has your child had to develop this capability (within the context of Reggio Emilia outdoor learning)? What have you witnessed in your child's behaviour that indicates that this capability is being developed?

Creation

- What is an important capability that you think is required to fulfill the need for creation?
- How might the way the teachers teach the students in the outdoors or in relation to the outdoors (Reggio Emilia outdoor learning program) support the development of that capability?
- What have you seen or heard your children talk about to back up this claim? What activities has your child been involved in that you've witnessed or that they've told you about that would support the development of the capability you mentioned? What opportunities has your child had to develop this capability (within the context of Reggio Emilia outdoor learning)? What have you witnessed in your child's behaviour that indicates that this capability is being developed?

Affection

- What is an important capability that you think is required to fulfill the need for affection?
- How might the way the teachers teach the students in the outdoors or in relation to the outdoors (Reggio Emilia outdoor learning program) support the development of that capability?
- What have you seen or heard your children talk about to back up this claim? What activities has your child been involved in that you've witnessed or that they've told you about that would support the development of the capability you mentioned? What

opportunities has your child had to develop this capability (within the context of Reggio Emilia outdoor learning)? What have you witnessed in your child's behaviour that indicates that this capability is being developed?

Identity

- What is an important capability that you think is required to fulfill the need for identity?
- How might the way the teachers teach the students in the outdoors or in relation to the outdoors (Reggio Emilia outdoor learning program) support the development of that capability?
- What have you seen or heard your children talk about to back up this claim? What activities has your child been involved in that you've witnessed or that they've told you about that would support the development of the capability you mentioned? What opportunities has your child had to develop this capability (within the context of Reggio Emilia outdoor learning)? What have you witnessed in your child's behaviour that indicates that this capability is being developed?

Participation

- What is an important capability that you think is required to fulfill the need for participation?
- How might the way the teachers teach the students in the outdoors or in relation to the outdoors (Reggio Emilia outdoor learning program) support the development of that capability?
- What have you seen or heard your children talk about to back up this claim? What activities has your child been involved in that you've witnessed or that they've told you about that would support the development of the capability you mentioned? What opportunities has your child had to develop this capability (within the context of Reggio Emilia outdoor learning)? What have you witnessed in your child's behaviour that indicates that this capability is being developed?

Freedom

- What is an important capability that you think is required to fulfill the need for freedom?
- How might the way the teachers teach the students in the outdoors or in relation to the outdoors (Reggio Emilia outdoor learning program) support the development of that capability?
- What have you seen or heard your children talk about to back up this claim? What activities has your child been involved in that you've witnessed or that they've told you about that would support the development of the capability you mentioned? What opportunities has your child had to develop this capability (within the context of Reggio Emilia outdoor learning)? What have you witnessed in your child's behaviour that indicates that this capability is being developed?

Follow-up Questions

I will ask follow-up questions depending on the answers given, for example, when participants are asked - what is an important capability that you think is required to fulfill the need for …? - I may ask the interviewee to expand on the description of this capability or to provide a clear connection between this capability and how it may help fulfill the need being addressed. With regards to the second question - how might the way the teachers teach the students in the outdoors or in relation to the outdoors (Reggio Emilia outdoor learning program) support the development of that capability? – I may ask the interviewee to provide examples of what they may have witnessed in the classroom or that their children have described. I may also ask the interviewee to provide more details or if the response is focused solely on the Reggio Emilia philosophy, ask the participant to talk more about the outdoor learning component in combination with the Reggio Emilia philosophy. Finally, with reference to the third cluster of questions, beginning with – what have you seen to back up this claim? – I may follow-up on the response here with a bit of prodding for more examples or more clear connections between examples and connections to the ideas behind the Reggio Emilia outdoor learning program.

Appendix Q

Interview protocol for students

The following guiding questions will frame the interview. I will ask follow-up questions that are dependent upon the answers given (see below).

Understanding

- What is an important capability that you think is required to fulfill the need for understanding?
- How might the Reggio Emilia outdoor learning program support the development of that capability?
- What have you seen to back up this claim? What activities have the students been involved in within the Reggio Emilia outdoor learning program that would support the development of the capability you mentioned? What opportunities does this program afford in the development of this capability? What student responses have you witnessed that indicates that this capability is being developed?

Creation

- What is an important capability that you think is required to fulfill the need for creation?
- How might the Reggio Emilia outdoor learning program support the development of that capability?
- What have you seen to back up this claim? What activities have the students been involved in within the Reggio Emilia outdoor learning program that would support the development of the capability you mentioned? What opportunities does this program afford in the development of this capability? What student responses have you witnessed that indicates that this capability is being developed?

Affection

- What is an important capability that you think is required to fulfill the need for affection?
- How might the Reggio Emilia outdoor learning program support the development of that capability?
- What have you seen to back up this claim? What activities have the students been involved in within the Reggio Emilia outdoor learning program that would support the development of the capability you mentioned? What opportunities does this program afford in the development of this capability? What student responses have you witnessed that indicates that this capability is being developed?

Identity

- What is an important capability that you think is required to fulfill the need for identity?
- How might the Reggio Emilia outdoor learning program support the development of that capability?
- What have you seen to back up this claim? What activities have the students been involved in within the Reggio Emilia outdoor learning program that would support the development of the capability you mentioned? What opportunities does this program afford in the development of this capability? What student responses have you witnessed that indicates that this capability is being developed?

Participation

- What is an important capability that you think is required to fulfill the need for participation?
- How might the Reggio Emilia outdoor learning program support the development of that capability?
- What have you seen to back up this claim? What activities have the students been involved in within the Reggio Emilia outdoor learning program that would support the development of the capability you mentioned? What opportunities does this program afford in the development of this capability? What student responses have you witnessed that indicates that this capability is being developed?

Freedom

- What is an important capability that you think is required to fulfill the need for freedom?
- How might the Reggio Emilia outdoor learning program support the development of that capability?
- What have you seen to back up this claim? What activities have the students been involved in within the Reggio Emilia outdoor learning program that would support the development of the capability you mentioned? What opportunities does this program afford in the development of this capability? What student responses have you witnessed that indicates that this capability is being developed?

Follow-up Questions

I will ask follow-up questions depending on the answers given, for example, when participants are asked - what is an important capability that you think is required to fulfill the need for …? - I may ask the interviewee to expand on the description of this capability or to provide a clear connection between this capability and how it may help fulfill the need being addressed. With regards to the second question - how might the Reggio Emilia outdoor learning program support the development of that capability? – I may ask the interviewee to provide more details or if the response is focused solely on the Reggio Emilia philosophy, ask the participant to talk more about the outdoor learning

component in combination with the Reggio Emilia philosophy. Finally, with reference to the third cluster of questions, beginning with – what have you seen to back up this claim? – I may follow-up on the response here with a bit of prodding for more examples or more clear connections between examples and connections to the ideas behind the Reggio Emilia outdoor learning program.