

Outcomes of Natural Play and Learning Spaces: A Collaborative Case Study with KidActive

by

Zachary M. Stevens

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AUTHOR'S DECLARATION

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

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ABSTRACT

It has been argued that contemporary environmental issues may be in part attributable to a growing disconnect with the natural world (Liefländer, Fröhlich, Bogner, & Schultz, 2012; Louv, 2005; E. K. Nisbet, Zelenski, & Murphy, 2009; Pyle, 2003). Fortunately, there are those such as Richard Louv—who in his renowned book *Last Child in the Woods* brought marked attention to the increasing divide between children and the natural world—that recognize the need for a human-nature (re)connection. Louv (2005) highlights the need for innovative solutions that cater to an increasingly urbanized and technology-driven society that foster connections to nature, which are critical to the health and wellbeing of our society and planet. One such solution is a budding international interest in greening or naturalizing public playgrounds (Bell & Dymont, 2006). Although the relevant literature has made significant contributions to our understanding of naturalized playgrounds and the developmental outcomes that can be fostered in these spaces (Bell & Dymont, 2006; Moore, 2014; Raffan, 2000), current research fails to acknowledge the potential for naturalized play spaces to promote place meanings and an environmental ethic, which have implications on children’s connections and relationships with nature.

Through a qualitative and collaborative case study of KidActive’s Natural Play and Learning Spaces (NPLS) program, this research project focused on identifying, understanding, and evaluating perceptions associated with naturalized playgrounds and the role they play in fostering nature connection, place meanings, and outcomes linked to individual and community wellbeing. Informed by tenets of participatory research, evaluative research, narrative inquiry, and observational research, this improvisational inquiry (Berbary & Boles, 2014) gathered the stories of various NPLS stakeholders. These narratives were then analyzed by weaving together tenets of narrative analysis (Glover, 2003; Polkinghorne, 1995), framework analysis, and program theory and logic modeling (McLaughlin & Jordan, 1999) oriented through a pragmatically minded constructionist lens (Crotty, 1998). Results of this work help to contextualize the importance of the provision of naturalized play spaces for children. Importantly, it highlights the perceived outcomes of these spaces and the ability of outdoor play and learning in these spaces to foster relationships with nature.

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CHAPTER ONE: INTRODUCTION

Throughout my life I have been involved in recreation from varying perspectives: as a recreationist, as a practitioner, and as a scholar, all of which have helped me to develop a significant interest in the outdoors and everything it has to offer. By engaging in nature-based recreation, I have not only felt the influence that being immersed in the natural environment can have on fostering an appreciation and stewardship for the natural environment, but I have also witnessed first-hand the benefits nature can provide those who immerse themselves within it. Having the opportunity to facilitate positive, transformative experiences within nature in the past has instilled in me a passion for reconnecting society with the natural environment. And thus, the following thesis attempts to understand how we can heal the split between humans and the environment and the extent to which outdoor recreation, outdoor education, and nature-based leisure can help us do that.

1.1 Social Contexts

The regressing state of the natural environment is one of the biggest challenges of our time (Dearden & Mitchell, 2009). Unfortunately, modern environmentalism, arguably the largest social movement to attempt to address environmental degradation, has been relatively ineffective in provoking substantial change as we are still faced with numerous environmental issues that warrant significant concern (Burns & LeMoyné, 2001; Cianchi, 2015). Such inertia has led Beery and Wolf-Watz (2014) to allege that, “one of the most pressing and persisting societal debates of contemporary time regards the causes of, and the proper solutions to environmental degradation” (p. 198). When considering these issues, it has been often argued that they may be in part attributable to a growing

disconnect with the natural environment (Liefländer, Fröhlich, Bogner, & Schultz, 2012; Louv, 2008b; Nisbet, Zelenski, & Murphy, 2009; Pyle, 2003). Essentially, it is thought that as our connection with the natural world diminishes, we become increasingly negligent towards its preservation (Pyle, 2003). Thus, a solution perhaps lies in the fostering of a human-nature (re)connection.

Fortunately, there are those such as Richard Louv—who in his renowned book *Last Child in the Woods* brought marked attention to the increasing divide between children and the natural world—that recognize the need for such connection. Providing much of the impetus for the contemporary back-to-nature campaign, Louv (2005) makes the case for the necessity of human-nature connections and the importance of experiences in nature to foster such relations as a way to combat what he deems nature-deficit disorder. Louv (2005) emphasizes the need to (re)connect with nature and send children back into the woods.

This back-to-nature movement has resulted in the development of organizations such as the Children and Nature Network (childrenandnature.org), a not for profit founded by Louv himself. Other similar organizations and initiatives touting this campaign of reconnecting children with nature are popping up throughout the United States and Canada, including but limited to the No Child Left Inside initiative (lnicgc.org), the Child and Nature Alliance of Canada (childnature.ca), Forest School Canada (forestschoolcanada.ca), the Back to Nature Network (back2nature.ca), the Suzuki Superhero Challenge (getbackoutside.ca), and the Primitive Integrated Naturalist Education (p.i.n.e.) Project (pineproject.org). What these, and similar, organizations and initiatives have recognized is the potential benefits that can accrue from contact with nature, be they physical health,

cognitive functioning, or psychological wellbeing (Chawla, 2015). Because of this discourse that accentuates the many benefits and outcomes associated with contact with nature, Louv (2008) explains, we are seeing “progress among state and national legislatures, conservation groups, schools and businesses, government agencies and civic organizations” (para. 7) towards furthering this movement.

In conjunction with the development of the organizations just listed, is the budding international interest in greening or naturalizing public playgrounds (Bell & Dymont, 2006). Canada is no exception to this movement, with naturalized playgrounds popping up across the country (Dymont & Bell, 2007; Raffan, 2000). Local examples of this broad inception are apparent within the Toronto District School Board, the Guelph Arboretum, and the City of Kitchener’s Huron Natural Area, all of which strive to provide areas that nurture an affinity towards nature and outdoor play (Aboud & Kock, 1996; City of Kitcher, 2016; Dymont, 2005a). One organization dedicated to this cause and of relevance to this study is KidActive, an agency devoted to supporting the development of healthy children through active outdoor play (KidActive, n.d.a).

1.1.1 KidActive and the Natural Play and Learning Spaces Program

KidActive is a nationally registered charitable organization based out of central-eastern Ontario. Founded to foster the development of healthy kids, communities, and environments across Canada, KidActive’s mission is as follows:

Through multi sector partnerships, collaboration, advocacy and both resource and program development, KidActive supports equitable healthy development and connects children and their families to safe, nearby built and natural environments

that support accessible outdoor physical activity where they learn, play and live (KidActive, n.d.a, para. 4).

With the ultimate vision of having every child be “active, healthy and connected to their natural environment” (KidActive, n.d.a, para. 3), KidActive recognizes the right of all children to have the opportunity to develop fully across physical, mental, and emotional dimensions and to have a strong connection with the natural world.

One of KidActive’s programs that strives to meet such ends is their Natural Play and Learning Spaces (NPLS) program. Through their NPLS program, KidActive works collaboratively with students, educators, parents, and communities of Renfrew County to naturalize school grounds in order to enhance children’s play and learning experiences (KidActive, n.d.b). The program is a collaborative one-year school-based process that aims to “design and create spaces for inclusive, co-operative, creative, inspiring outdoor play and innovative outdoor learning opportunities” (KidActive, n.d.b, p. 1). NPLS facilitators also provide tools and resources to help teachers utilize the spaces to their fullest potential both as a play space at recess and as a learning space during class time. As Carly Meissner, Education Coordinator at KidActive, explains, the collaborative process becomes about encouraging ownership in the program and ideally leaving teachers and administrators feeling confident to continue carrying out the vision once the consultation process is over (personal communication, July 13, 2016). The NPLS program is just one of many that recognizes the utility of school ground greening in attaining health and wellbeing outcomes in children.

1.2 Scholarly Contexts

With this emerging interest in providing naturalized playgrounds, a growing body of literature explaining the benefits of these spaces has understandably ensued (Bell & Dymont, 2006). Though, as Bell and Dymont (2006) reveal, the majority of this literature pertains to social, cognitive, and physical health and wellbeing dimensions. Few studies have looked at the implications of these spaces to promote nature connection. Thus, it is necessary to turn to the broader fields in which naturalized playgrounds are situated: nature-based recreation and nature-based learning—what Grimwood (2016), drawing on Humberstone (2000) refers to as the “outdoor industry”.

1.2.1 The Outdoor Industry

In considering the key players in the progression of the back-to-nature campaign, researchers and practitioners within the outdoor industry—“the range of service providers and facilities that ‘makes available outdoor experiences for leisure and recreational purposes, for educational, youth and management training and therapeutic reasons’” (Grimwood, 2016, p.2 citing Humberstone, 2000, p. 21)—acknowledge that they have an important role to play. Understandably, couched within this conceptualization of an “outdoor industry” are the fields of outdoor recreation and outdoor education (Humberstone, 2000). It is within these fields of practice that we see responses to the call of encouraging people to have encounters with the natural world (Grimwood, 2016). Thus, it is these fields of academia that we turn to next.

1.2.1.1 Outdoor Recreation

Within leisure studies, outdoor recreation has been under examination for well over half a century (Manning, 1999), and as Plummer (2009) explains, fairly consistent

definitions of the term have been employed over these years. In his synthesis of the many outdoor recreation definitions Plummer (2009) derives the following definition: “voluntary participation in free-time activity that occurs in the outdoors and embraces the interaction of people with the natural environment” (p. 18). It is this interaction between people and the natural environment that is of particular importance for the context of this study.

Outdoor recreation provides a highly utilized avenue through which nature encounters ensue, and therefore one branch of outdoor recreation scholarship has understandably focused on the outcomes associated with these encounters. Much of the outdoor recreation literature has focused on health and wellbeing outcomes, but as the discipline has progressed, other more nuanced outcomes have been studied, such as self-identity, self-efficacy, spirituality, mindfulness, sense of place and place attachment, and connection with nature (Henderson & Bialeschki, 2010; Plummer, 2009; Wolsko & Lindberg, 2013). In looking at such nuanced outcomes, it becomes necessary to discuss specific outdoor recreation experiences rather than thinking of outdoor recreation so broadly.

1.2.1.1.2 Outdoor Play

Outdoor play becomes of particular importance for the context of this study because it is outdoor, nature-based play that is stimulated in naturalized playgrounds. While there might be relative consensus on definitions of outdoor recreation (Plummer, 2009), the same cannot be said for play (Henle, 2007). There appears to be little agreement amongst play scholars in regards to an enduring definition of play, however there is some agreement on certain attributes of it (Isenberg & Jalongo, 2014). For the purposes of this research, play will be considered as those endeavors that comprise of Isenberg and Jalongo's (2014) “essential characteristics of play” (p. 45). These characteristics describe

play as being voluntary and intrinsically motivated; symbolic, meaningful and transformational; active; rule-bound; and pleasurable. Outdoor play then, would simply be that which incorporates these characteristics in the outdoors. Furthermore, inherent to play in these outdoor environments is an element of risk—i.e., a potential of danger or harm (Sandseter, 2009). Thus, a conceptualization of outdoor play within the context of this study will also include a risk dimension, such that outdoor play will be characterized as not only that which occurs in the outdoors and encompasses Isenberg and Jalongo's (2014) five characteristics of play just mentioned, but also an element of risk that Sandseter (2012) explains, “involves thrilling and exciting forms of physical play that involve uncertainty and a risk of physical injury” (p. 84).

Research into outdoor play echoes that of the naturalized playground literature, and more broadly the outdoor recreation literature, emphasizing physical fitness, mental health, cognitive development, and socio-emotional outcomes, arguing for the importance of nature connection in enhancing these outcomes (Mainella, Agate, & Clark, 2011). Unfortunately, the prevalence of children participating in outdoor, nature-based play is declining drastically, resulting in fewer nature connections and fewer of the previously-mentioned health and wellbeing outcomes being fully realized (Louv, 2005; Mainella et al., 2011). Such arguments help to further legitimize the cause of those carrying out naturalized playground initiatives such as KidActive.

When considering the outdoor recreation literature, the interdisciplinary nature of the subject becomes apparent, often finding relevance in natural resource management, ecology, environmental studies, tourism, and other similar areas of study (Plummer, 2009). Because of this interdisciplinary nature, it may be considered negligent to discuss outdoor

recreation as it relates to nature connection without also acknowledging its ties to outdoor education.

1.2.1.2 Outdoor Education

For the purpose of this thesis I will use what is described as the most commonly recognized and widely cited definition of outdoor education (Plummer, 2009; Hendserson, 1987; Ibrahim & Cordes, 2002): “education in, about, and for the outdoors” (Donaldson & Donaldson, 1958, p. 17). This broad definition provides the breadth necessary to encompass all facets of outdoor/environmental learning. Outdoor education has often been championed as an avenue in which to impart environmental knowledge and foster the environmental values that elicit pro-environmental behaviour (Foster & Linney, 2007; Hungerford & Volk, 1990; Plummer, 2009). With that said however, authors contend that more needs to be understood in terms of the affective component of pro-environmental behaviour (Kals, Schumacher, & Montada, 1999; Nisbet et al., 2009). And thus, it is this notion of nature connection that we turn to next.

1.2.2 Nature Connection

Nature connection, or environmental connectedness, has become a popular construct within the literature due to its ability to describe the bond between humans and nature (Andrejewski, 2011). Research regarding connectedness to nature is “primarily concerned with understanding how people identify themselves with the natural environment and the relationships they form with nature” (Restall & Conrad, 2015, p. 265). A variety of distinct, yet related concepts associated with connection to nature, such as commitment to nature (Davis, Green, & Reed, 2009), connectedness to nature (Mayer & Frantz, 2004), connectivity with nature (Dutcher, Finley, Luloff, & Johnson, 2007),

emotional affinity toward nature (Kals et al., 1999), environmental identity (Clayton, 2003), inclusion of nature in self (Schultz, 2001), and nature relatedness (Nisbet et al., 2009), have developed within this research, and are a reflection of the scholarly interest in this construct (Tam, 2013).

As Beery and Wolf-Watz (2014) explain, there is widespread appeal in what they refer to as the “environmental connectedness perspective”, the notion that “spending time in nature will, given repeated experience, help an individual feel connected to nature, more inclined to care about nature, and, ultimately, to protect it.” (p. 198-199). And though different scales such as the Connectedness to Nature Scale (Mayer & Frantz, 2004) and the Nature Relatedness Scale (Nisbet et al., 2009) have been developed for empirical work attempting to better understand this perspective, disputes over reliability and validity in accurately measuring nature connection have ensued (Beery, 2013a; Perrin & Benassi, 2009). I recognize the value of tools and measures such as these scales in making important contributions to the literature and the broader understanding of nature connection, but I worry that in their attempt to operationalize such a complex concept for the purposes of generalizability, a more nuanced understanding of nature connection is lost. This sentiment echoes Beery & Wolf-Watz (2014) contention that the environmental connectedness perspective is in need of a place-based account. And thus, for the purpose of this research, to understand the nature connections provoked through nature-based outdoor play in naturalized playgrounds, I have revisited the workings of Aldo Leopold, who took up nature connection, not as an operationalized concept, but as a concept of environmental ethics and moral consideration.

Rather than worrying about operationalizing nature connection, Leopold's land ethic provides a theoretical/ethical perspective from which to understand human-nature relationships. Leopold's land ethic acknowledges the importance of seeing ourselves as egalitarian members of the land-community that encompasses both human and non-human entities, and in so doing extends moral consideration to the broader biotic community (Leopold, 1949). This community approach to nature connection is very much grounded in people and places and the interactions and relationships at hand, and thus provides an effective lens from which to consider the place meanings that Beery and Wolf-Watz (2014) contend are so vital to a better understanding of nature connectedness.

1.3 Purpose, Objectives, Research Questions, and Significance

The purpose of this research was to analyze the meanings and outcomes associated with children's nature-based play within the context of naturalized playgrounds. Drawing on a qualitative and collaborative case study of KidActive's Natural Play and Learning Spaces program, the research focused specifically on identifying, understanding, and evaluating perceptions associated with naturalized playgrounds and the role they play in fostering nature connection, place meanings, and outcomes linked to individual and community wellbeing. This study was guided by two primary objectives that were developed in consultation with KidActive, which were (1) to provide a program evaluation for KidActive's NPLS program, and (2) to interpret the extent to which nature-based play in this context serves as a mechanism for moral development through place-based nature connection. To achieve these objectives, the study addressed the following four research questions:

1. What place meanings and perceived outcomes do students, teachers, administrators, parents, and NPLS facilitators associate with nature-based play specific to the NPLS program?
2. What are the perceived barriers to, and facilitators of, the place meanings and outcomes produced in these naturalized play spaces?
3. How, and to what extent, does the NPLS program facilitate nature connection within the schoolyard and other outdoor places?
4. How, and to what extent, does the NPLS program facilitate the development of an environmental ethic?

By considering such a topic, this study helped to contextualize the importance of the provision of naturalized play spaces. It highlighted the perceived benefits of these spaces and the type of play they induce for healthy childhood development, as well as the meanings and significance that people ascribe to these play spaces. Results from this study may be used in the future to inform the development of initiatives like KidActive's NPLS program.

CHAPTER TWO: LITERATURE REVIEW

The following literature review first positions the notion of nature connection within leisure studies broadly, specifically, outdoor recreation, outdoor education and nature-based play. Secondly, it unpacks nature connection, situating it within the back-to-nature movement and discussing the outcomes, barriers, and facilitators of nature connectedness. Within this discussion, naturalized playgrounds are presented and described as a potential avenue in which to foster nature connectedness. Thirdly, it explains the importance of taking a place-based approach to understanding nature connectedness as it relates to these naturalized spaces, with an emphasis on the place meanings that develop as a result of these nature encounters. Lastly, it highlights the intersections of nature connection and the development of a place-based land ethic, from which we can contribute to an understanding of the connections that form between humans and nature that provide the impetus for pro-environmental behaviour.

2.1 Outdoor Recreation, Outdoor Education, and Nature-Based Play

As Sylvester (1999), proclaims, “leisure studies is plagued by conceptual confusion” (p. 292). Consequently, it becomes important to navigate and clarify this confusion when striving to make scholarly contributions to the field in order to better situate oneself within it. Thus, prior to discussing that which is most relevant to this study, an understanding of key disciplines that are foundational to the research area is necessary to set the contextual background for the rest of this thesis. The two key disciplines of relevance to this research, as discussed in my introduction, are outdoor recreation and outdoor education.

2.1.1 Outdoor Recreation

As far as conceptualizations within leisure studies go, outdoor recreation has been taken up with “remarkable consistency” (Plummer, 2009, p. 18). This consistency has allowed Plummer (2009) to synthesize over 50 years of outdoor recreation discussion within leisure studies into the following definition: “voluntary participation in free-time activity that occurs in the outdoors and embraces the interaction of people with the natural environment” (p. 18). And though this definition is helpful to point out important characteristics of outdoor recreation, it fails to acknowledge the particular aims of this type of leisure that Jensen (1995) explains are so important to the concept of outdoor recreation. Jensen (1995) describes five main objectives of outdoor recreation: appreciation of nature, personal satisfaction and enjoyment, physiological fitness, positive behaviour patterns, and stewardship. Though all of these objectives are important to keep in mind, it is the objectives of appreciation of nature and stewardship that become important for the context of this research. Thus, rather than discuss the mass of outdoor recreation literature that spans a multitude of interests, the following will highlight research that discusses these two areas.

2.1.1.1 Outdoor Recreation and Appreciation of Nature

According to Plummer (2009) the appreciation of nature objective can be explained as follows, “outdoor recreation should build knowledge and enhance understanding of ecological processes as well as develop an awareness of sensitivity of natural environments to human impacts” (p. 18). Jensen and Guthrie (2006) discuss the value and benefits of outdoor recreation and suggest that appreciation of nature is a tangible goal that leisure providers should aim to instill in outdoor recreation participants. Evidence of this being a

realistic goal is present in a study on urban teens participating in a long-term outdoor recreation program and their perceived experience with nature (Lekies, Yost, & Rode, 2015). These authors found that despite having limited contact with nature prior to the program, the nature encounters provided as a part of the program induced a “greater understanding of and appreciation towards nature” (p. 7).

2.1.1.2 Outdoor Recreation and Stewardship

In discussing Jensen's (1995) stewardship objective, Plummer (2009) explains that “outdoor recreation provides opportunity for the exercise of moral and ethical values towards the environment, stewardship should be a chief aim and spirit fostered by outdoor recreation”(p. 19). In addition, a study conducted by Thapa and Graefe (2003) determined that those engaged in appreciative (rather than consumptive or motorized) outdoor recreation were more likely to embrace pro-environmental behaviours, such as green consumerism. One context within outdoor recreation that has the ability to bring these environmentally minded objectives to fruition is nature-based play.

2.1.2 Outdoor Recreation and Nature-Based Play

When attempting to determine antecedents of environmental concern, Bixler, Floyd, and Hammitt (2002) explain that, “studies have consistently identified childhood play in natural environments as a key factor” (p. 795). In a heavily cited study looking at significant life experiences in conservationists, Tanner (1980) found that nature based play was commonly named as a significant influence in choosing careers geared towards conservation. Similarly, Hart (1997) explains the importance of nature-based play in promoting environmental care amongst children. Such environmentally oriented outcomes result in an understandable interconnection between the fields of outdoor recreation and

outdoor education. Though these two subjects are distinct, there is often conceptual and practical overlap between these two interdisciplinary fields (Plummer, 2009; Yerkes & Haras, 1997).

2.1.3 Outdoor Education

Unlike outdoor recreation, the definition of outdoor education has varied over the years (Ibrahim & Cordes, 2002; Adkins & Simmons, 2002), but one definition that has stood the test of time is that of Donaldson and Donaldson (1958), who define outdoor education as “education in, about, and for the outdoors” (p. 17). This definition has endured because it “simply and effectively communicates the intent of outdoor education” (Plummer, 2009, p. 247). It provides the setting (in the outdoors), the subject (about the outdoors), and the purpose (for the outdoors) for this type of learning. And because the definition remains fairly indiscriminate, it can be argued that related pedagogies can be encompassed within outdoor education, such as environmental education—education focused on “producing a citizenry that is knowledgeable concerning the bio-physical environment and its associated problems, aware of how to help solve these problems, and motivated to work toward their solution” (Stapp, 1970, p. 15), and experiential education—“a process through which a learner constructs knowledge, skill, and value from direct experiences” (Adkins & Simmons, 2002, p. 3, citing the Association of Experiential Education). Thus, for the purpose of this paper the concept of outdoor education will encapsulate both these types of learning.

2.1.3.1 Outcomes of Outdoor Education

Similar to the objectives of outdoor recreation just described, authors within the field of outdoor education tend to agree that one of the fundamental goals of this form of

education is to foster an environmental ethic in children, such that they become responsible stewards of the natural environment (Ford, 1986; Palmer, 2002). Though this aim of fostering an environmental ethic is often heralded as a cornerstone of outdoor education experiences, with the exceptions of Preston (2011, 2014), little research appears to have supported the development of such an ethic. Instead research tends to focus on some of the arguably more tangible characteristics of this ethic such as pro-environmental behaviour.

In a study on long-term variables impacted by outdoor education, Bogner (1998) found that both actual and intended pro-environmental behaviour was promoted through outdoor education. The study conducted by Breunig, Murtell, and Russell (2014) also produced similar findings, in that the environmental education programs elicited a tendency towards pro-environmental behaviour in students involved in the program. Breunig et al. (2014) explain that students went a step further and began to encourage similar behaviours in their family and friends.

Though the literature appears to support the notion that outdoor recreation and outdoor education can lead to an appreciation of nature, stewardship over nature, and pro-environmental behaviour, authors contend that more needs to be understood in terms of the affective antecedents of these outcomes (Kals et al., 1999; Nisbet et al., 2009). Thus, it is the notion of nature connection that we turn to next.

2.2 Nature Connection

Concern for the state of the natural environment can be traced back to Rachel Carson, the mother of the modern environmental movement, whose book *Silent Spring*, released in 1962, was deemed the catalyst for environmentalism (Plummer, 2009). Despite

its distant origins, the environmental movement has had difficulty in promoting significant change. Today, over 50 years after the release of *Silent Spring*, we are still faced with numerous environmental issues that warrant our concern, such as “depletion of life-sustaining resources, exceeding the ability of the natural environment to absorb waste, human encroachment into ever-increasing portions of the natural environment, irreversible loss of biodiversity, and human impact on the local and global climate” (Burns & LeMoyne, 2001, p. 26). When considering these issues, it becomes apparent that they are rooted in a generational disconnect with the natural environment, which has been notably troubled by Richard Louv in his renowned book *Last Child in the Woods*. Providing much of the impetus for the contemporary back-to-nature campaign, Louv (2005) makes the case for the necessity of human-nature connections and the importance of experiences in nature to foster such connections. Louv (2005) emphasizes the need to (re)connect children with the natural world, to resist the pull of technology and urbanization, and send children back into the woods.

2.2.1 Considering the Back-to-Nature Movement

Interestingly, this call back to nature is not as contemporary as Louv (2005) may have his readers believe. At the very beginning of his book, Louv suggests that, “within the space of a few decades, the way children understand and experience nature has changed radically” (p. 1). He continues to speak nostalgically about being a youth growing up in the 1950s and how an intimate connection with nature was commonplace; but as Wall (2009) explains, worries of the ill effects of urban life on children are far from contemporary, tracing back to at least the 1870s, when a back-to-nature movement provided the motive for Canadian summer camps to help reconnect urban children with nature. This point is not

to discredit Louv, but meant rather to illustrate that the apparent need to (re)connect with nature has been a part of a Western collective consciousness for well over a century, and yet, we are still actively engaged in trying to achieve this goal. An answer as to why such a consciousness pervades becomes apparent when the broader philosophy of nature itself is considered.

2.2.1.1 Philosophical Considerations

Historically speaking, nature as benevolent is a relatively new construction (Cronon, 1996; Wall, 2009). For centuries nature was thought of as a valueless expanse on the edge of civilization, of having, “little or nothing to offer civilized men and women” (Cronon, 1996, p. 9). It was not until particular ideologies of Romanticism, of nature as redemptive space, set in during the mid to late 19th century, that a new, more positive connotation of nature was constructed (Cronon, 1996; Wall, 2009). The romantic attraction to nature brought about “the belief that the best antidote to the ills of an overly refined and civilized modern world was to return to a simpler, more primitive living” (Cronon, 1996, p. 13). This sentiment continued into the 20th century as getting back to nature was viewed as a “healthy antithesis of modern urban life” (Wall, 2009, p. 32). Not only was this view a reversal of centuries of thought towards nature, but as the previous quotation suggests, it also became a form of resistance to early stages of modernism. Unfortunately for the Romantics of the time, once set in motion, the social changes associated with modernity, industrialization, and urbanization, were all but inevitable (Eyerman, 1992), and the hopes of returning to a simpler time remained nostalgic aspirations.

Here in lies one of the main issues of this back-to-nature movement, which finds its lineage in the contemporary environmental movement that blossomed out of romanticized

thought (Cronon, 1996); its founded on a nostalgic, yet unrealistic notion of returning to a simpler way of life that the relentless cogs of modernization are not likely to allow.

Therefore, instead of continually trying to resist modern life, we need to develop innovative solutions that work within the complexities of modernity and provide the means to achieve the human-nature connectedness outcomes that Louv, and many before and after have argued, are vital to the health and wellbeing of our society and planet. The next section examines the nature connection literature to set the stage for considering possible solutions.

2.2.2 Nature Connection Research

Implicit in the back-to-nature movement is the understanding that if the degraded state of the natural environment can be, at least in part, attributed to the (dis)connection between humans and nature, then a logical solution to this problem would be to foster human-nature (re)connection. It therefore becomes important to have a solid understanding of nature connection.

2.2.2.1 What is Nature Connectedness?

Restall and Conrad (2015) explain that research on connectedness to nature involves “understanding how people identify themselves with the natural environment and the relationships they form with nature” (p. 264). This work appears to be far from straight forward, with many different, yet intersecting disciplines having taken up nature connection, including environmental psychology, environmental philosophy, environmental education, and outdoor recreation (Beery, 2013b; Bragg, 1996; Liefländer et al., 2012; Tam, 2013). As Restall and Conrad (2015) continue to explain, the range and diversity of the nature connection literature has presented challenges in establishing a

comprehensive understanding of the topic. For example, as mentioned in Chapter One, many terms and concepts have grown out of this literature including commitment to nature (Davis et al., 2009), connectedness to nature (Mayer & Frantz, 2004), connectivity with nature (Dutcher et al., 2007), emotional affinity toward nature (Kals et al., 1999), environmental identity (Clayton, 2003), inclusion of nature in self (Schultz, 2001), and nature relatedness (Nisbet et al., 2009); and yet there is discrepancy as to whether or not these concepts are synonymous or distinct. Restall and Conrad (2015) contend the former, while Tam (2013) argues the latter. And thus, one definition of connectedness to nature appears somewhat elusive. For this reason, and given the highly correlated nature of each of these terms (Tam, 2013), Capaldi, Dopko, and Zelenski (2014) suggest that a comprehensive definition of nature connectedness should include a patchwork comprising each of these concepts. And though there is certainly benefit in allowing all of these concepts to inform a definition of nature connectedness, I believe that it is important to decide on one that is the most useful for the purposes of one's research.

One conceptualization that I believed to be the most useful for the context of this project is that developed by Mayer and Frantz (2004). These authors draw on Aldo Leopold to explain connectedness to nature as,

The extent to which people experientially view themselves as egalitarian members of the broader natural community; feel a sense of kinship with it; view themselves as belonging to the natural world as much as it belongs to them; and view their welfare as related to the welfare of the natural world (Mayer & Frantz, 2004, p. 505).

This definition is useful because it articulates what is meant by “connection”. It provides fairly tangible characteristics and some concrete direction for analyzing connectedness outcomes.

2.2.2.2 Nature Connectedness Outcomes

Nature connectedness research appears to work within two lines of thought: one that focuses more on the anthropocentric outcomes or benefits resulting from connecting with nature; while the other perspective hints towards a more ecocentric orientation, focusing on the environmental implications of nature connection.

Anthropocentric Outcomes

Although seemingly counter to the ideals of nature connection, anthropocentrism, “the belief that humans are separate from and superior to all other life and therefore have the right to dominate and control [it]” (Russell, 1995, p. 24), appears to pervade much of the research. Foundational to this dominating human-centered worldview is the notion that for nature to be valued, it must have instrumental purpose (Attfield, 2014). That is, nature has value if it is perceived to have the ability to satisfy human wants and needs. This way of thinking dominates much of the nature connectedness literature as studies are primarily interested in determining the utility of nature connection in fostering anthropocentric outcomes. That is, connection with nature is believed to be important to study because of the multiplicity of benefits afforded to human beings through this connection. As Capaldi et al. (2014) explain, a major focus of nature connectedness research examines the relationship between nature connection and human wellbeing. These sentiments are echoed by Nisbet and Lem (2015) who contend that researchers are

increasingly interested in investigating the association between nature connection and physical and psychological health.

With an arguable glut of nature connection literature with such a focus, Russell et al. (2013) sought to “weav[e] together disparate strands of evidence” (p. 494), in order to synthesize and bring clarity to this field of thought. In their systematic, multidisciplinary literature review, these authors found that several constituents of wellbeing including physical health, mental health, spirituality, human cognition, identity/autonomy, and connectedness/belonging have been consistently reported as being positively associated with nature connectedness. These authors come to the conclusion that “the balance of evidence indicates conclusively that knowing and experiencing nature makes us generally happier, healthier people” (Russell et al., 2013, p. 473). What underpins this conclusion is an ideology that values nature not for its intrinsic value but for its ability to enhance the wellbeing of mankind.

The way recreation is taken up in nature connection literature tends to have similar anthropocentric undertones, not only because of the anthropocentric tendencies of most outdoor recreation opportunities (Oelschlaeger, 1995), but also because the literature focuses on the benefits of outdoor recreation that result from connecting with nature. One such example of this is a report put together by the Canadian Parks Council (CPC)—an agency within Parks Canada—titled *Connecting Canadians with Nature: An Investment in the Well-Being of our Citizens*. In this report the CPC explains that “there exists now a rich and cross-disciplinary base of knowledge that explores and validates the benefits people derive from personally connecting with various elements of the natural environment” (Canadian Parks Council, 2014, p. 9). In examining the empirical research to do with nature

connection and outdoor recreation, the CPC reveals that connection with nature within the context of Canadian parks has the ability to promote human-centered benefits in the way of our economy, health, spirit and identity, personal development, and communities. With that said, the CPC report also highlights the environmental benefits associated with human connection with nature, which begins to hint at more ecocentric related outcomes.

Ecocentric outcomes

An ecocentric environmental ethic extends rights to the natural world, promotes the value of nature for its own sake, and “judge[s] that [nature] deserves protection for its intrinsic value” (Thompson & Barton, 1994, p. 149). Nature connectedness is often regarded as an avenue in which to foster such an ethic (Beery & Wolf-Watz, 2014). This perspective, as Beery and Wolf-Watz (2014) explain, has been a recurring theme within environmental discourses for the past 50 years. That encounters with nature can illicit “individual transformation towards higher levels of environmental concern and pro-environmental behaviors” (Beery & Wolf-Watz, 2014, p. 198), has ties to environmental psychology, environmental philosophy, environmental education, and outdoor recreation (Beery, 2013b; Bragg, 1996; Liefländer et al., 2012; Tam, 2013), and has been aptly deemed the environmental connectedness perspective by Beery and Wolf-Watz (2014).

As mentioned, vital to the environmental connectedness perspective, is the suggestion that, “spending time in nature will, given repeated experience, help an individual feel connected to nature, more inclined to care about nature, and, ultimately, to protect it.” (Beery & Wolf-Watz, 2014, p. 198-199). This notion of connectedness, as Beery (2013) suggests is deeply associated with Aldo Leopold’s philosophy of environmental action, which Goralnik and Nelson (2011) summarized:

1. Our experiences with the environment as our biotic community will prompt an emotional attachment to, and sense of value for, that community;
2. We act to preserve those things we are emotionally attached to and in which we posit value;
3. Thus, we will act on behalf of the environment if our experiences with it portray it as a community to which we belong (p. 189).

Several studies support the association between nature connection and pro-environmental behaviour. For example, in their discussion of five studies looking at nature connection, Mayer and Frantz (2004) conclude that nature connectedness can be a significant predictor of pro-environmental behaviour. Similarly, Kals, Schumacher, and Montada (1999), who looked at the emotional motivations of pro-environmental behaviour among a sample of German participants, found that emotional affinity with nature proved to have significant explanatory power over nature-protective behaviours. Müller, Kals, and Pansa (2009) further supported these findings amongst German and Lithuanian adolescents, concluding that emotional affinity toward nature “contributes significantly to willingness for pro-environmental commitment” (p. 59). Findings similar to these are evident throughout the environmental psychology, environmental education, and environmental behaviour literature (Davis et al., 2009; Goralnik & Nelson, 2011; Gosling & Williams, 2010; Nisbet et al., 2009; Schultz, 2001), which has bred widespread appeal and support for this environmental connected perspective.

With this said, sometimes the potentially ecocentric outcome of pro-environmental behaviour, is taken up in a very human-centered way. For example, looking again at the CPC report, authors explain that connection to nature is important in fostering positive

environmental attitudes, values, and behaviours, which are important because “Canadians can only reap maximum benefit from natural services if the natural environment is valued and cared for.” (p. 21). We therefore must be mindful of the way these outcomes are discussed. If we are truly seeking to contribute to an understanding of ecocentric outcomes, we must remind ourselves that the end goal is not for the betterment of mankind, but for the betterment of the entire biotic community, of which we are a part.

2.2.2.3 Nature Connectedness Barriers

Despite all of the research supporting the plethora of benefits that can accrue as a result of connectedness with nature, the prevalence of human nature encounters necessary to foster such connections are increasingly declining (Louv, 2005). In their discussion of trends to do with nature and Canadians, the Canadian Parks Council (2014) outlines many barriers that have led us to stray from nature. These barriers include, urbanization and access to nature, competition for time, indoor and sedentary lifestyles, and fears of stranger danger and the outdoors (Canadian Parks Council, 2014). These barriers to nature encounters and nature connectedness, discussed later, are supported by empirical research.

Urbanization and access to nature is increasingly impacting our ability to connect with nature. According to Statistics Canada (2011) over 80 percent of the Canadian population live in urban areas. The rural to urban shift has resulted in an intensification of urbanization causing green spaces in urban and sub-urban environments to become a rarity (Chawla, 2015; Malone, 2004). This, as Tam (2013) explains, has cost those living in cities an intimate connection with nature. Simply put, as the number of green spaces

continues to decline, access to nature for the majority of the population is significantly reduced, resulting in an inability to connect with nature.

Another barrier is competition for time. Not only are the demands of work an issue for adults' leisure time (Hilbrecht, 2007), but increasing demands on children's time are becoming problematic for nature connection (Louv, 2005). Research indicates, "growing numbers of children are spending substantial time in settings that focus on structured educational and recreational activities, leaving little time for participation in open-ended, self-initiated free play" (Canadian Council of Learning, 2006). This has implications for nature connection because, as Mainella et al. (2011) argue, these structured activities often take the place of unstructured, outdoor free play that is so important to children's connection with nature (Chawla, 2015; Louv, 2005).

Indoor and sedentary lifestyles are also limiting our connections to nature. There is a growing body of research that supports the notion that sedentary behaviour both in children and adults has increased in recent years (Active Living Research, 2014). This not only has significant health implications but it also has a considerable impact on the time people spend in nature. The prevalence of screen-based technologies, be it television, computer, phone, or tablet, that engender sedentary behaviours has been shown to discourage children from playing outdoors (Clements, 2004). Larson, Green, and Cordell (2011) found that interest in these screen-based activities were the most commonly reported reasons for children not wanting to play outside. Opting to stay indoors has understandably negative effects on the frequency of nature encounters and nature connection.

Fears of stranger danger and the outdoors are also having an impact on our ability to connect with nature. A frequently reported reason for the decrease in children's outdoor play is parents' concern for the safety of their children (Harden, 2000). Clements (2004) found that over 80 percent of mothers indicate that a key factor in preventing their children from playing outdoors is a concern for their safety. Parental fears of "stranger danger" have been commonly found to prevent children from pursuing unstructured, unsupervised outdoor play (Harden, 2000; Louv, 2005; Malone & Tranter, 2003b; Maynard & Waters, 2007; White, 2004). Similarly, a fear of the unknown in the outdoors for both parents and children has brought about comparable reservations towards outdoor, nature-based play (Aaron & Witt, 2011; Louv, 2005) which, in tune with the preceding, has negative implications on nature connectedness. With so many barriers to nature connectedness it becomes important to consider potential facilitators.

2.2.2.4 Nature Connectedness Facilitators

Research on specific nature connectedness facilitators is quite minimal. Trigwell, Francis, and Bagot (2014) even conclude their study on nature connectedness and eudaimonic well-being with the recommendation that future research should aim to determine facilitators of nature connection. With that said, proponents of the environmental connectedness perspective discussed previously, would argue that the key facilitator to nature connectedness is simply encounters with nature. Thus, those engagements that elicit nature encounters could be viewed as facilitators of nature connectedness. Henderson and Bialeschki (2010) make the case that outdoor nature-based recreation can be such a facilitator. Similarly, outdoor education boasts an ability to provide the necessary contact with nature that is thought to promote connectedness

(Foster & Linney, 2007). But in a world where urban life is increasingly commonplace and opportunities for such encounters with nature seem to be fewer and fewer for children (Chawla, 2015; Fjørtoft, 2001, 2004; Louv, 2005; Malone & Tranter, 2003b; Ozdemir & Yilmaz, 2008), there is a need for innovative solutions that work within the constraints of such a society.

Fortunately, there are those such as Frances Kuo who have taken up this call, and have devised ways for us to “most effectively and efficiently address [Louv’s] nature-deficit disorder in an increasingly urban and technology-centered age” (Kuo, 2013, p. 184). In his systematic review of the literature pertaining to the notion of nature-deficit, Kuo (2013) developed several recommendations that would help to address nature-deficit at a population level. One recommendation had to do with “green[ing] everyday places [...] includ[ing] residential areas, workplaces, and schools” (Kuo, 2013, p. 180). Of significance to this study, is the greening, or naturalizing, of school playgrounds. White (2004) highlights the importance of programs that target school grounds, emphasizing that in an age when children’s

...access to the outdoors and the natural world [is] becoming increasingly limited or nonexistent, child care, kindergarten and schools, where children spend 40 to 50 hours per week, may be mankind's last opportunity to reconnect children with the natural world (p. 3).

Fortunately, there appears to be a budding global interest in school ground greening as a way of getting children back to nature.

2.2.2.4.1 Naturalized Playgrounds

Internationally, schools have adopted the development of naturalized play grounds, of “transforming hard, barren expanses of turf and asphalt into places that include a diversity of natural and built elements, such as shelters, rock amphitheaters, trees, shrubs, wildflower meadows, ponds, grassy berms and food gardens” (Bell & Dymont, 2006, p. 16). These naturalized playgrounds are becoming particularly prominent in Canada, Australia, the United Kingdom, the United States, Scandinavia, New Zealand, and South Africa (A. Bell & Dymont, 2006). As previously mentioned, one organization dedicated to this cause that provided the context for this study was KidActive, an agency devoted to supporting the development of healthy children through active outdoor play and learning (KidActive, n.d.-a). Through their Natural Play and Learning Space (NPLS) program, KidActive works collaboratively with students, teachers, parents, principals, and their communities to naturalize school grounds in order to enhance children’s play and learning experiences (KidActive, n.d.-b). Through a collaborative case study with KidActive, this project aimed to illuminate the valuable outcomes of such a program and contribute to a better understanding of the broader implications of school ground greening.

2.2.2.4.1.1 Outcomes of Naturalized Playgrounds

With the emerging interest in providing naturalized playgrounds, a growing body of literature explaining the benefits of these spaces has understandably ensued. These benefits have been considered across a variety of research disciplines resulting in a multitude of outcomes that range from the individual child, to the child’s school, to the broader community (Raffan, 2000). Of particular note is the associations reported between nature-based play and healthy development of children, because as Raffan (2000) explains,

the benefits tend to have a trickle-up, or fountain effect, beginning with the child. For example,

Improved academic performance as a result of involvement in a school ground naturalization project on the part of a student, may have direct effects on a teacher's enthusiasm for teaching, which in turn will affect the morale of the school, which in turn may increase enrollment or enhance public perception of the school, which in turn may encourage community members to become involved in school affairs or give them a heightened sense of community satisfaction (Raffan, 2000, p. 6).

Authors have conducted extensive reviews and meta-analyses of the literature, and there appears to be growing consensus amongst researchers in regards to the assertion that healthy developmental outcomes, including physical, cognitive, and social development, in children are supported through nature-based play in naturalized playgrounds (Bell & Dymont, 2006; Heft, 1988; Raffan, 2000; Raith, 2015; Taylor & Kuo, 2006).

Evidence of the physical benefits of nature-based play in naturalized playgrounds has been well documented. One of the more recent studies conducted by Anne Bell and Janet Dymont looked specifically at the ability of naturalized playgrounds to promote physical activity in children. This report was commissioned by Evergreen, "a Canadian charity and international thought leader [that] has provoked bold action in transforming public landscapes into thriving community spaces with environmental, social and economic benefits" (Evergreen, 2016, para. 2). Through a national survey conducted in elementary schools across Canada, Bell and Dymont (2006) sought to explore the implications of school ground greening on children's physical activity. Their study found that the diverse design elements provided through school ground greening (i.e. trees, rocks, shrubs, sticks,

branches, leaves, logs, and stones), promoted more active play amongst a wider variety of students across light, moderate, and vigorous physical activity levels (A. Bell & Dymment, 2006). These findings have supported the results of other studies seeking to determine the physical benefits that play in such spaces provides compared to conventional school grounds (Barbour, 1999; Fjørtoft, 2001; Fjørtoft, 2004; Heft, 1988; Kirkby, 1989; Lieberman & Hoody, 2000).

Bell and Dymment's (2006) survey also revealed the cognitive outcomes that result from naturalized playgrounds. Several studies have supported this notion. For example, Dymment (2005) investigated the influence of green school grounds within the Toronto District School Board. Through questionnaires and follow up interviews, she determined that student learning and academic achievement were enhanced through green school grounds (Dymment, 2005a). Dymment (2005b) explains that such findings help to further verify the past quantitative work that yielded similar results. Examples of such work is that conducted by Lieberman and Hoody (2000) and Simone (2002). These studies analyzed the standardized test score results of those schools who participated in some form of greening program and found associations between those involved in the program and academic performance (Lieberman & Hoody, 2000; Simone, 2002). Studies such as these provide a quantitative perspective to the growing body of literature that supports the association between cognitive outcomes and naturalized playgrounds, that until recently has been more qualitatively oriented (Alexander, North, & Hendren, 1995; Heft, 1988; Malone & Tranter, 2003; Moore & Wong, 1997; Moore, 1996; Raffan, 2000; Waters & Maynard, 2010).

This body of research has also established that there are a variety of socially related benefits to naturalized playgrounds (Raffan, 2000). Green school grounds have been found

to provide more inclusive spaces for children (Dyment & Bell, 2008). Many authors point to the diversity that naturalized playgrounds provide in order to explain this tendency. Because naturalized areas provide a range of play choices and play opportunities, they allow children the flexibility to engage in activities that suit them best (Bell & Dyment, 2006; Dyment, 2005a; Herrington & Studtmann, 1998; Kirkby, 1989; Moore, 2014; Raffan, 2000; Rivkin, 2000; 1998; Wells & Evans, 2003). Children in naturalized playgrounds are less likely to feel isolated based on differences associated with gender, class, race, or ability because of the positive social dynamics that are fostered in these spaces (Dyment & Bell, 2008). This is different than traditional playgrounds that tend to favour competitive, aggressive boys (Moore, 1996). Evans (2001) explains that aggression and other anti-social behaviour such as “teas[ing], intimidat[ing] and generally annoy[ing] other children” (p. 49) often stem from boredom. The stimulating, and diverse design of naturalized playgrounds helps to reduce issues of boredom by providing children countless play choices (Evans, 2001; Moore & Wong, 1997; Raffan, 2000; Titman, 1994).

Though this research is valuable in that it certainly substantiates the ability of naturalized playgrounds to benefit children, there is virtually no discussion of any environmentally oriented outcomes. Not only does this reinforce the discussion just had, of the literature being dominated by anthropocentric thought, but it also provides a seeming gap within the research worthy of addressing. With a large body of literature denoting the importance of children’s contact with nature (Chawla, 2015), and another growing body of literature substantiating the importance of naturalized play grounds for fostering healthy childhood development (A. Bell & Dyment, 2006), it seems a logical extension to understand the role these arguably manufactured green spaces play in providing the

necessary nature encounters to foster nature connectedness in children. Such is not an easy task however, as Beery & Wolf-Watz (2014) contend, the association between nature encounter and nature connectedness is not as straightforward as those championing the environmental connectedness perspective may have you believe. As the following section explains, it becomes necessary to consider the subjective meanings inherent in nature connectedness.

2.2.2.5 Nature Connectedness Meanings

One issue with environmental connectedness perspective literature previously discussed, is its tendency to avoid looking into the subjective meanings of nature encounters and how they influence nature connectedness. As Beery and Wolf-Watz (2014) explain, the environmental connectedness perspective inadequately recognizes the influence of human values, perceptions and attitudes associated with nature encounters, which could understandably interfere with the ability of these experiences to foster nature connection and pro-environmental behaviour. Because it puts such an emphasis on time spent in nature and not on the subjective meanings associated with that experience, the environmental connectedness perspective nullifies any “assumption that individuals and groups may differ in their view and valuation of nature, or particular parts of nature” (Beery & Wolf-Watz, 2014, p. 202). These differing perspectives could either limit or enhance the ability of nature encounters to foster the nature connection that is associated with pro-environmental behaviour. Consequently, Beery and Wolf-Watz (2014) recommend a more complex conceptualization of the environmental connectedness perspective, calling for a place-based perspective to be considered. Thinking through nature encounters as encounters with a (natural) place benefits the environmental

connectedness perspective because it incorporates the importance of subjective experience and associated meanings into the nature encounter-environmental behaviour relation that the current environmental connectedness perspective effectively ignores (Beery & Wolf-Watz, 2014).

2.3 Place-Based Approach to Nature Connectedness

2.3.1 What is Place?

Considerable interest in the topic of place has emerged within academia (Stokowski, 2008). Understandably the concept of place is rooted in the field of humanistic geography, but as Cresswell (2014) explains, it is not bound to this discipline, rather it has become an interdisciplinary concept finding relevance in a variety of fields; recreation and leisure studies included (Smale, 2006; Kruger et al. 2008; Farnum et al., 2005). The concept of place is understood to comprise three features: geographic location, material form, and an investment of meaning and value (Gieryn, 2000). Of particular importance to place and to this study, is the latter. This feature provides a crucial distinction between place and space; space being primarily concerned with geographic location, and place being more concerned with the lived experiences in, and associated meanings and values ascribed to, a particular space. As Smale (2006) explains it is the human experience of place that becomes relevant to recreation and leisure studies literature as place is seen as “an important contextual factor influencing behaviour, shaping perceptions, and defining experiences” (p. 370), and it is often through leisure pursuits that meanings of place arise. These meanings of place are what Beery and Wolf-Watz (2014) contend are likely to have an impact on environmental connection and pro-environmental behaviour. In order to take a place-

based approach however, it becomes important to have an understanding of important place concepts.

2.3.2 Key Concepts in Place Literature

One of the most widely discussed concepts that dominates place-based literature as it relates to human connections to place is sense of place. Farnum et al. (2005) describe sense of place as “the entire group of cognitions and affective sentiments held regarding a particular geographic locale and the meanings one attributes to such areas ” (p. 2-3). Two interrelated terms that are commonly used within sense of place literature are place attachment and place meanings (Farnum et al., 2005). Unfortunately, articulating distinctions between concepts of sense of place, place meaning, and place attachment can be difficult because of their complex interdependence, which has led to them being used interchangeably in the past (Clark & Stein, 2003; Farnum et al., 2005). However, as Smale (2006) explains, it is very important to be able to distinguish between these place related concepts.

In order to do this, I will attempt to unpack Farnum et al.'s (2005) definition of sense of place just cited, particularly, what is meant by cognitive and affective components. Stewart (2008) refers to place meanings as the cognitive components of sense of place—our thoughts about a particular locale. Drawing on Stedman (2002), Wynveen (2009) further explains place meanings as the “beliefs and/or cognitions ascribed to a setting that reflect the value and significance of the setting to the individual” (p. 9). Alternatively, place attachment, or the affective components of Farnum et al.'s (2005) sense of place, has to do with the “positive emotional bond that develops between people and their environment” (Stedman, 2003, p. 672). When discussing the antecedents of place meanings and place

attachment, it often becomes a debate much akin to the dispute over “what came first, the chicken or the egg?” As Farnum et al. (2005) outline, arguments can be made for both, but for the purpose of this study, I have situated this research in the camp that supports the notion that our place meanings are informed by the place attachments that we develop. In other words, the emotional bonds we form with a place invoke particular place meanings; both of which foster a sense of place.

2.3.3 The Importance of Place Attachment and Place Meanings on Pro-Environmental Behaviour

Authors have demonstrated the importance of place and pro-environmental behaviour, arguing that attachments to place, particularly natural places, and their associated meanings can foster and/or be predictors of pro-environmental behaviour (Halpenny, 2010; Scannell & Gifford, 2010; Vaske & Kobrin, 2001). In trying to understand this linkage, it becomes important to consider how these attachments develop. Research increasingly supports the notion that the physical environment plays a role in place meanings and place attachment (Gustafson, 2001; Raymond, Brown, & Weber, 2010; Stedman, 2003). In conjunction with this research, literature also describes the role of the physical environment to shape place identity (Morgan, 2010), a dimension of place attachment related to psychological affiliation with a physical setting (Vaske & Kobrin, 2001). I argue that this place identity piece can be likened to other environmental connectedness related concepts that describe an “affective, cognitive, and/or physical human relationship with nature” (Beery & Wolf-Watz, 2014, p. 198). This is important because it provides the necessary mechanism or line of thought to explain the associations between place, nature connection, and pro-environmental behaviour. Thus, it is premised that as we engage in activities in natural spaces, we may begin to form a sense of place

through place meanings brought about by place attachments, forming an identity with said place. Through this mutual identity between self and nature, a connection to, and sense of kinship with, the natural world may form, encouraging pro-environmental behaviours.

2.3.4 The Importance of Understanding Place Meanings

Research on place, such as that outlined, has predominately focused on understanding place attachments, with far less research considering the importance of place meanings (Farnum et al., 2005; Stedman, 2008; Stokowski, 2008). But as Stedman (2002) explains,

Research must deal not only with the strength of attachment but also with the meanings that one attributes to place or the beliefs one has about a spatial setting.

Knowing that someone is strongly attached to place does not by itself suggest much about the nature of this attachment or what behaviors may ensue (p. 566).

Of relevance to this study is the ability of leisure (Smale, 2006), in particular outdoor play (Alexander, Cocks, & Shackleton, 2015) within naturalized playgrounds, to provide the experiences necessary to engender meanings of place.

While the literature discussing the intersections of outdoor play and sense of place and its associated place meanings and attachments is rather limited, Malone (2004) and White and Stoecklin (1998) are notable exceptions. As Malone (2004) explains, we need to, “acknowledge the importance of unregulated natural play as key to children's development of a sense of place” (Malone, 2004, p. 62). Perhaps it is in environments that allow for the intersections of play in natural environments and connections/attachments to nature and place that solutions to the societal and generational disconnect with the natural environment can be found. It is proposed that the perceived place meanings that develop

through outdoor, nature-based play in naturalized playgrounds can help contribute to an understanding of these intersections. One theoretical perspective that may be useful in fostering such an understanding is that of environmental ethics.

2.4 Environmental Ethics Dimension

2.4.1 What is Environmental Ethics?

The field of environmental ethics has its roots in the workings of the late writers and nature enthusiasts John Muir and Aldo Leopold, but has really only gained wide support within the last half century with the development of the contemporary environmental movement (Kortenkamp & Moore, 2001). Environmental ethics can be defined as a “discipline in philosophy that studies the moral relationship of human beings to, and also the value and moral status of, the environment and its nonhuman contents” (Brennan, 2008, para. 1). It is useful in the context of this study because it provides a dimension through which to look at and understand human relationships with nature.

2.4.2 Environmental Ethics Perspectives

As environmental ethics has developed as a discipline, so too has a number of environmental ethics perspectives. These perspectives can be grouped into two broad schools of thought: anthropocentrism and ecocentrism. Both schools of thought express a concern for the natural environment, but differ in the reasons as to why they value the natural environment (Thompson & Barton, 1994). This difference in motive is the difference between conservation and preservation (Cocks & Simpson, 2015).

As previously discussed, anthropocentrism is the belief that human beings are the most important beings on the planet, and that nature has “value only because it is useful to human beings” (Casas & Burgess, 2012, p.184). In other words, nature is valued because it

has instrumental value. From this perspective, it is thought that the “environment should be protected because of its value in maintaining or enhancing the quality of life for humans” (Thompson & Barton, 1994, p. 149). And though this ethic could be easily viewed as a non-environmentally friendly perspective, Kronlid and Öhman (2013) as well as Cocks and Simpson (2015) warn this is not the case. After all, anthropocentric views can still protect the environment; it is simply the motive behind the protection that is different. For example, as Kortenkamp and Moore (2001) explain, using an anthropocentric ethic, “it would be considered wrong to cut down the rainforests because they contain potential cures for human diseases” (p. 262). In this scenario, the forests are conserved because they are of benefit to humans.

Alternatively, there is ecocentrism. As previously explained, an ecocentric ethic “value[s] nature for its own sake and, therefore, judge[s] that it deserves protection because of its intrinsic value” (Thompson & Barton, 1994, p. 149). The notion of intrinsic value here is meant to capture the idea that nature is valuable beyond that which can be seen as usefulness to humans (Casas & Burgess, 2012). Donnelly and Bishop (2007) describe an ecocentric act as, “one in which the reason to act is the provision of a benefit to the environment” (p. 90). Continuing with the previous example, from an ecocentric perspective, “one could judge that it would be wrong to cut down the rainforests because it would cause the extinction of many plant and animal species” (Kortenkamp & Moore, 2001, p. 263). This time, the forests are protected in the name of preservation.

2.4.2.1 Leopold’s Land Ethic

Despite not being a philosopher, Aldo Leopold, in his renowned book *A Sand County Almanac*, put forth what is often considered the “best known environmental ethic of our

time” (Oelschlaeger, 1995, p. 335). This ethic has proven to be foundational to ecocentric thought, as Leopold writes in his essay, *Land Ethic*,

There is as yet no ethic dealing with man’s [*sic*] relation to land and to the animals and plants which grow upon it...The extension of ethics to this third element in the human environment is...an evolutionary possibility and an ecological necessity (as cited by Kortenkamp & Moore, 2001, p. 261).

Important to Leopold’s ethic was bringing the broader biotic community into moral consideration (Callicott, 1987). As Leopold writes “the land ethic simply enlarges the boundaries of the community to include soils, waters, plants, and animals, or collectively: the land” (Leopold, 1949, p. 239). It is from this perspective that we see ecocentric thought coming to fruition because by extending what Goodpaster (1978) calls “moral considerability” to the land, our actions towards it will reflect an ethic that respects the intrinsic value of nature. To put it in the words of Leopold’s often-heralded maxim of the land ethic (Callicott, 1987), “A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise” (Leopold, 1949, p. 247).

Also imperative to Leopold’s land ethic is including ourselves as egalitarian members within the land-community. As he writes, the land ethic “changes the role of *Homo sapiens* from conqueror of the land-community to plain member and citizen of it. It implies respect for his [*sic*] fellow-members, and also respect for the community as such” (p. 240). From this communal way of thinking, a nature connection dimension to the land ethic is created. As we find ourselves connecting with nature, we find ourselves feeling in community with it (Goralnik & Nelson, 2011), and as Leopold (1949) explains, “when we

see land as a community to which we belong, we may begin to use it with love and respect” (p. viii).

2.4.3 Conceptualizing a Place-Based Environmental Land Ethic

This feeling of community with nature is very much akin to the earlier discussion of nature connection. As previously explained, the underlying premise of the environmental connectedness perspective is Leopold’s land ethic—when we feel in community with nature, i.e. connected to nature, we are likely to do that which is in best interest of the entire community (Goralnik & Nelson, 2011). But as Beery & Wolf-Watz (2014) explain, and as argued previously, this connectedness perspective could benefit from a place-based understanding of the nature connections. So, given that place meanings are said to influence our nature connectedness, I argue that our feelings of being in community with nature are also likely influenced by these meanings. And thus, by contextualizing the land ethic within our place meanings, we can perhaps better understand the connections that form between humans and nature that are crucial in both extending moral consideration to, and feeling in community with, the land that Leopold believed was requisite for pro-environmental behaviour.

2.5 Weaving It All Together

In order to help conceptualize the intersections amongst the bodies of literature discussed throughout this chapter, I developed a graphic that illustrates how all the different concepts connect to one another (see Figure 1). The visual depicts naturalized playgrounds as providing a nature-based context or experience that can foster individual and community wellbeing outcomes, as well as place meanings, nature connection/feeling in community with nature, and an extension of moral consideration to the biotic

community. The place-based land ethic lends itself to understanding these intersections because it acknowledges the need to consider place meanings in the development of a human-nature connection that can foster an environmental ethic with an inclination towards pro-environmental behaviour.

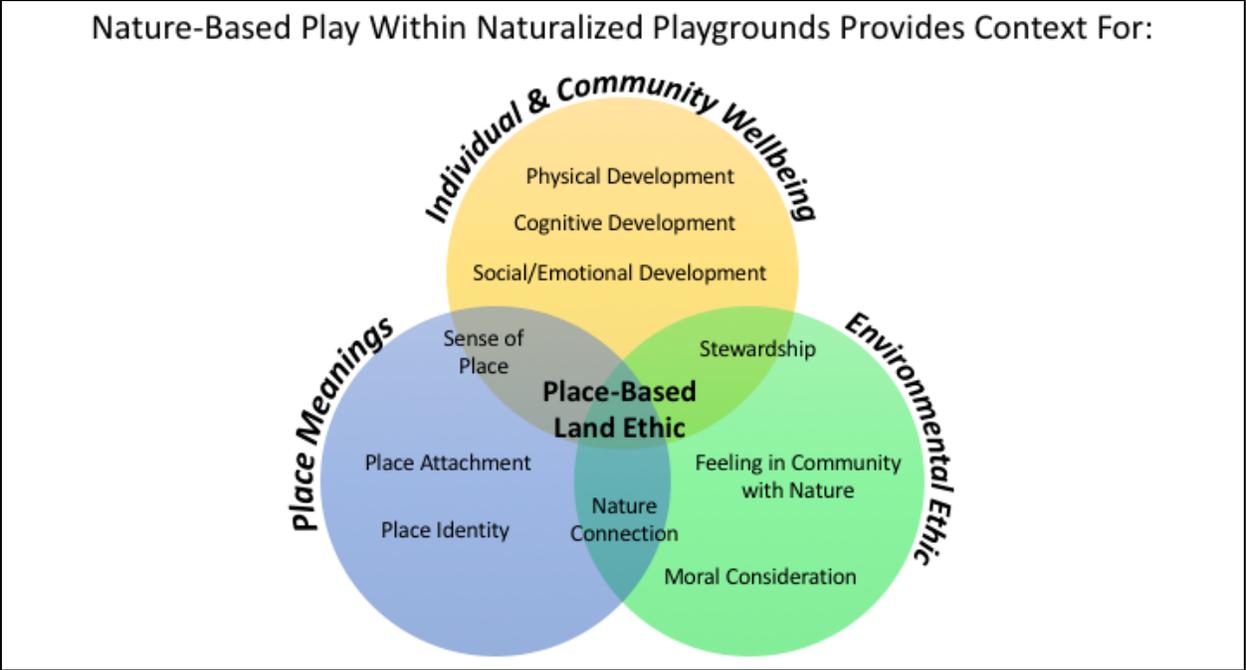


Figure 1: A Conceptual Model. This figure illustrates my understanding of the intersections between the relevant bodies of literature and associated concepts.

2.6 Seeming Gaps

Though the relevant literature has made significant contributions to our understanding of naturalized playgrounds and the developmental outcomes that can be fostered in these spaces, there remain several seeming gaps that should be addressed. Firstly, the majority of research on naturalized playgrounds appears to have occurred prior to 2010, and thus is somewhat dated and in need of scholarly advancement. Secondly, while arguments have been made that the current research is dominated by qualitative work (Raffan, 2000) and conversely quantitative work (Hamarstrom, 2012), it would

appear that what is dominant within the literature is objectivist, post-positivist thinking. The majority of the studies consulted for this literature review were very deterministic in nature, attempting to prove cause and effect. And though there is value in this type of work, Crotty (1998) explains that other epistemologies can help to bring about different understandings. Thus, there remains a gap in the literature for constructionist thought that aims to shed light on multiple perceptions, meanings, and understandings, specifically with respect to the outcomes associated with naturalized playgrounds, which have previously been studied in a post-positivist manner. Thirdly, with relation to the content of the research, much of the current studies fail to acknowledge the potential for naturalized play spaces to promote place meanings and an environmental ethic, which have implications on nature connection and nature relationships in children.

These perceived gaps helped situate the relevance and purpose of this thesis: to analyze the meanings and outcomes associated with children's nature-based play within the context of naturalized playgrounds. More specifically, by drawing on a qualitative and collaborative case study of KidActive's Natural Play and Learning Spaces program, the research focused on identifying, understanding, and evaluating perceptions associated with naturalized playgrounds and the role they play in fostering nature connection, place meanings, and outcomes linked to individual and community wellbeing. In order to achieve this purpose, the following research questions were addressed:

1. What place meanings and perceived outcomes do students, teachers, administrators, parents, and NPLS facilitators associate with nature-based play specific to the NPLS program?

2. What are the perceived barriers to, and facilitators of, the place meanings and outcomes produced in these naturalized play spaces?
3. How, and to what extent, does the NPLS program facilitate nature connection within the schoolyard and other outdoor places?
4. How, and to what extent, does the NPLS program facilitate the development of an environmental ethic?

Answering these research questions the helped to achieve the two guiding objectives of (1) providing a program evaluation for KidActive's NPLS program, and (2) interpreting the extent to which nature-based play in this context serves as a mechanism for moral development through place-based nature connection.

CHAPTER THREE: METHODOLOGY

The following chapter discusses the various methodologies, methods, and analyses that were drawn on to elicit stories from those engaged in KidActive's Natural Play and Learning Spaces (NPLS) program in order to develop a better understanding of the role these playgrounds play in fostering nature connection, place meanings, and outcomes linked to individual and community wellbeing.

3.1 Improvisational Inquiry

Qualitative inquiry is continually moving towards more innovative research approaches that push the boundaries of traditional scholarship, and leisure studies can often be found spearheading this movement (Berbary & Boles, 2014). While perhaps not as edgy or radical as some of the scholarship at the forefront of this movement, I would consider this project to align well with what Berbary and Boles (2014) describe as improvisational inquiry, an approach to research that "pulls from multiple methodologies, methods, analyses, and representations to 'do research differently'" (p. 1). Although the purpose of this project is not to trouble traditional approaches in the ways that more critically oriented improvisational research can, it was my intent to conduct research that was useful beyond the realm of academia, and thus, improvisational inquiry was deemed the most useful approach. Improvisational inquiry allowed me to develop a collaborative case study informed by tenets of participatory research, evaluative research, narrative inquiry, and observational research, without fear of scholarly dissent.

3.1.1 Participatory Research

Participatory research focuses on a bottom-up approach, which utilizes local priorities and perspectives to gain a better understanding or solution to those priorities

(Cornwall & Jewkes, 1995). This project drew on tenets of participatory research in that it involved working collaboratively with local participants—i.e., KidActive—in designing and implementing the project so that it best suited their needs.

As discussed, KidActive’s NPLS program provided the context for this study. Having implemented the NPLS program for three consecutive years, associates from KidActive expressed a need to document the outcomes of their program. Director of KidActive, Shawna Babcock, and Education Coordinator at KidActive, Carly Meissner, discussed that a program evaluation of the NPLS program would be extremely beneficial, explaining that programs similar to KidActive’s NPLS program have received significant funding partly owing to the fact that they had been evaluated (personal communication, July 13, 2016). And thus, as per the tenets of participatory research, the objectives, intentions, and processes of this project were developed in consultation with KidActive. In particular, Babcock and Meissner expressed interest in conducting a program evaluation with a narrative focus.

3.1.2 Program Evaluation

With a growing body of literature accentuating the variety of developmental outcomes and benefits associated with naturalized playgrounds, it is understandable that many have begun designing and implementing greening programs across the globe. If considering this progression within the context of recreation and leisure program provision, the first two pillars of Arai's (2007) program provision process, program planning and program implantation, have already occurred. It is now time for the third pillar—program evaluation.

Program evaluation, as mentioned, is the third pillar or stage in the leisure program provision process (Arai, 2007). It is the “systematic collection of information about the activities, characteristics, and outcomes of programs to make judgments about the program, improve program effectiveness, and/or inform decisions about future programming” (Patton, 1997, p. 23). Program evaluations help practitioners gain valuable insight into the strengths and weaknesses of their programs, and help determine whether program goals have been met (Arai, 2007; W.K. Kellogg Foundation, 2004). Essentially, the primary objective of any program evaluation is to provide useful information that will inform future decision-making.

Program evaluations are understandably of particular importance in the program provision process because they help practitioners determine whether or not their program is working (Arai, 2007). For example, just because research explains that physical, cognitive, and social benefits will accrue from school ground greening, does not mean that all programs will be successful in attaining such aims. Thus, for programs such as KidActive’s NPLS program, there is a need to evaluate the ability of it to meet its objectives, and to garner information that can be used to improve its overall efficacy.

Program evaluations also become important within the context of not-for-profit organizations like KidActive, whose longevity often rely on grants and other philanthropic funding (Murray, 2009). As Arai (2007) explains, results from program evaluations can be used to market the program and its benefits. In the case of the NPLS program, KidActive can use the results not only to leverage support in order to acquire funding and resources, but to also articulate the efficacy of the program in order to obtain buy-in from gatekeepers such as school board superintendents and school principals who ultimately make the

decisions as to whether or not schools will participate in such a program. Thus, consideration of the audience of the evaluation becomes of particular importance when designing a program evaluation both in terms of what is evaluated and how the results are represented and disseminated (Arai, 2007).

3.1.3 Narrative Inquiry and Evaluation

Program evaluation has historically been dominated by post-positivist thinkers attempting to determine the efficacy of a program through quantitative methods oriented around the experimental model (Greene, 1994). However, as Greene (1994) continues to explain, such an approach is not the most useful way to conduct social program evaluation. Fortunately, with the development and acceptance of different epistemological perspectives in social science research, “a diverse range of alternative approaches to program evaluation, including practical, decision-oriented approaches and approaches framed around qualitative methodologies” (Greene, 1994, p. 535) has ensued. More recently, Costantino and Greene (2003) have explained that there is growing interest in using narrative inquiry in evaluative projects. They argue that narrative serves as a particularly useful tool because of its ability to help realize the contextualized value of a program. Through narratives, “contextual meanings and experiential insights” (Costantino & Greene, 2003, p. 37) are revealed, which provide a more informative and multifaceted evaluation. Indeed, the stories that are elicited through narrative can provide a captivating evaluation that can be used to promote the program and its benefits more effectively than results from more quantitatively oriented methods such as surveys or questionnaires.

Because of the nature of narrative data, it can be analyzed from a variety of perspectives. It can yield the necessary information to make informed statements about the

perceived outcomes needed for a qualitative program evaluation, but it can also be analyzed in order to make scholarly contributions to the literature. As Glover (2003) explains, “narrative inquiry offers a great deal of promise and potential to leisure scholarship aimed at exploring the meaning of leisure experiences in the lives of individuals” (p. 160). In considering experiences in naturalized playgrounds as leisure experiences, it would appear that narrative inquiry might be a suitable approach for trying to gain an understanding of how these spaces promote sense of place and other associated place meanings. And thus, in order to understand these meanings, it becomes important to engage the public, gathering their stories and constructing them into narratives (Davenport & Anderson, 2005) that effectively capture the subjective experiences and associated meanings of these nature encounters.

3.1.4 Logic Modeling

One evaluative tool that was deemed useful in framing such narratives is the logic model. A logic model is a tool that is often used by managers and evaluators alike to describe how a program works to achieve the initial, intermediate, and long-term outcomes it seeks to produce (McDavid & Hawthorn, 2006; Claphem et al. 2017). These assumptions outline what is often referred to as program theory, the underlying theory that explains how a program works or is supposed to work (Cooksy, Gill, & Kelly, 2001). The theory weaves the various components of the model together into a causal chain. Essentially, “program theory provides meaning to the logic model by defining the connections among the four logic model elements” (Gugiu & Rodríguez-Campos, 2007, p. 346): inputs, activities, outputs, and outcomes. Inputs consist of all the resources that are needed to deliver a program; activities are thought of as the work done in a program; outputs are

described as the tangible results of these program activities; and outcomes are referred to as the resulting change in condition due to the program (McDavid & Hawthorn, 2006). By describing the inputs, activities, outputs, and outcomes, it has been argued that these models can effectively tell the story of a program (Goertzen, Fahlman, Hampton, & Jeffery, 2003; McLaughlin & Jordan, 1999). As McLaughlin and Jordan (2004) explain, “it can be the basis of a convincing story of the program’s expected performance, telling stakeholders and others the problem the program focuses on and how it is uniquely qualified to address it” (p. 8).

Not only is this tool valuable in its ability to tell such a story, but it can also provide users with evaluative insight in regards to how and if the program in question is meeting its objectives (McDavid & Hawthorn, 2006). The logic model developed by an organization can become a useful tool to assess the underlying assumptions of the program theory against the actual program delivery and the resulting program outcomes (McDavid & Hawthorn, 2006; McLaughlin & Jordan, 2004).

Because of the unique ability of logic models to provide a straightforward framework for evaluation as well as tell the program story, it was decided to draw on this evaluative tool for this project by asking KidActive associates Meissner and Babcock to put together a basic program logic model (presented later). I asked them to simply fill in a chart that lists the inputs, activities, outputs, and outcomes (initial, intermediate, and long-term) pertaining to the NPLS program. Initially it was intended that this model would then be used to help frame the questions we would ask participants in interviews—a primary use of logic models generally (McDavid & Hawthorn, 2006; Gugio & Rodrigues-Campos, 2007; McLaughlin & Jordan, 2004) but temporal issues resulted in the model coming to fruition

later than intended so the model was not used to directly build the interview guide. Instead, it was decided to use the model as a tool to analyze the data collected, looking for congruencies and incongruences between the model developed by KidActive, and the stories told by the various NPLS stakeholders.

3.2 Research Methods

3.2.1 Research Ethics

Ethics approval was obtained from the University of Waterloo's Office of Research Ethics. This process also involved acquiring approval from both the Renfrew County District School Board, and the Renfrew County Catholic School Board. As suggested by Veal (2011), participants and the site chosen (i.e. stakeholders and associated schools) were given pseudonyms in order to safeguard anonymity and confidentiality. Linking files containing names of participants with their pseudonyms were not kept with interview and/or observation notes, as this would compromise confidentiality. However, given the nature of participatory research and the element of personal narratives, complete anonymity could not be guaranteed, and participants were warned of this in advance.

3.2.2 Sample and Participants

I addressed the aforementioned research questions by collecting observational data with students, and interview data with teachers, administrators, parents, and one NPLS facilitator that have been involved in the NPLS program. In total, I met with five classes ranging from Kindergarten to Grade 4, amounting to approximately 100 students for my observations. Interviews, which ranged from 30 to 70 minutes in length, were conducted with six teachers, six administrators, three parents, and one NPLS facilitator. By working with participants with different perspectives of the program, I was able to capture the

various voices necessary to develop a nuanced understanding of the meanings and outcomes of the NPLS program. In consultation with KidActive, it was determined that a canvas of seven schools that have been involved in the NPLS program would be the most useful. This helped to gain an understanding of the perceived meanings and outcomes associated with the NPLS program throughout participating schools, and allowed us to capture the voices of NPLS stakeholders who were at varying stages in the NPLS process.

In order to gain access to the participants and the institutions under consideration, I had to reach out to gatekeepers including school board superintendents followed by school principals. A brief proposal of my research was submitted to, and reviewed by, these gatekeepers in order to gain access. The connections KidActive has made in implementing the NPLS program within particular schools and school boards helped me to gain access and secure permission to conduct research with the participants.

3.2.3 Data Collection

As discussed, in order to elicit a nuanced understanding of the importance of naturalized play spaces, a qualitative and collaborative case study of KidActive's NPLS program was conducted. This improvisational project was guided by tenets of participatory research, evaluative research, narrative inquiry, and to a lesser extent, observational research. The study was participatory in nature in that a relationship between KidActive and myself was developed so that we could work collaboratively in designing and implementing this evaluative study of the NPLS program.

As Costantino and Greene (2003) explain, there is growing interest in using narrative inquiry in evaluative projects. They argue that narrative serves as a particularly useful tool because of its ability to help us realize the contextualized value of a program.

Thus, data collection focused on gathering individual stories pertaining to the lived experiences of those involved in the NPLS program, including teachers, administrators, parents, and NPLS facilitators through one-on-one, semi structured, conversational interviews. Appendix A provides a copy of the interview guide that was used, which outlines some of the questions and prompts that were used to garner rich stories from participants.

A standard interview protocol was followed, whereby instructions were given to interviewees, questions were asked, followed by probing to encourage participants to explain their ideas in more detail (Cresswell, 2014). With that said, interviews were intended to be conversational in style and based on the reflective narratives and perspectives of participants. And therefore, participants ultimately set the pace of their discussions, and my role as the researcher was to listen, clarify, probe, and possibly bring up topics relating to study objectives that had not arisen spontaneously in the course of the conversation. Audiotapes from the interviews were recorded with participant permission. Data was also recorded through handwritten notes. Furthermore, transcriptions of audiotapes were added to interview notes.

Once the interviews were transcribed, they were sent back to the participants, often with follow-up questions that occurred to me as I listened to the interviews. The intent was to get clarification on comments made and to provide participants an opportunity to elaborate on their stories and make any adjustments to the transcripts they felt were warranted. This member-check helped to ensure that the data (i.e., stories) collected were true to how participants wanted to be portrayed.

To augment these stories, observational research methods were used. As Veal (2011) explains, observation can be useful when research is concerned with children's play. It provides an avenue through which to better understand patterns of play and play behaviours of children (Veal, 2011), as well as human-environment interactions (Sussman, 2016). This method involved observing participants engaging with the naturalized playgrounds developed through the NPLS program (e.g., how students were using the playground, how teachers were using the spaces created) in order to help contextualize the stories of the interview participants.

In total, five unstructured, non-participant observations were conducted with one class at five of the seven schools involved in this study. They were conducted at the end of the elementary school year, when everything was green and in bloom, as opposed to winter, which would have left many of the playground elements buried under snow and ice. Observations consisted of me introducing myself and the project to the different classes and asking them to simply go out with their classmates and play as they typically would at recess. As the children played I did my best to make notes pertaining to how they were using the space, the types of play I saw, and certain interactions that stood out to me. I also made sure to sketch a map of the playgrounds and take pictures of those elements that had been installed as a result of the NPLS program. Directly following each of the observations, I prepared a one-page summary of my hour with the students based on the notes I had jotted down.

These methods were used not only because of their ability to get local community members involved in the research process, but also because of the tangibles it produced in the form of detailed narratives that provided captivating accounts of personal experiences

The “contextual meanings and experiential insights” (p. 37) that Costantino and Greene (2003) explain are revealed through stories, were further contextualized through unstructured observations, which contributed to the development of an informative and multifaceted evaluation of the NPLS program.

3.2.4 Data Analysis and Representation

The interview data for the project was analyzed from a pragmatically oriented constructionist perspective (Crotty, 1998), which provided a lens from which to interpret the significances of the meanings and perspectives of the research participants. These interpretations were used to inform an understanding of the outcomes associated with the NPLS program. Data analysis was guided by what Polkinghorne (1995) describes as narrative analysis. This approach to qualitative analysis involves integrating the accounts of participants into an amalgamated narrative that provides a community story encompassing the voices of all research participants (Glover, 2003). This “story” was framed around a program logic model whereby participant narratives were dissected into passages that coincided with different elements within the model. Though this differs from traditional narrative analysis as discussed by Polkinghorne (1995) and Glover (2003), it proved to be useful in capturing the individual accounts of NPLS participants and incorporating them into an amalgamated narrative able to address the various dimensions under study.

This approach also lent itself to providing the creative space necessary to develop a representation of the data that aligns with KidActive’s intentions of developing an accessible, rich, and captivating account of what their NPLS program means to its

participants. Given the participatory nature of this research, it is hoped that KidActive will be able to use the results to promote the NPLS program and acquire any necessary funding.

3.2.4.1 Analytical Process

Because of the slightly unstructured nature of my narrative data, I found it useful to draw on what Ritchie and Spencer (2002) refer to as framework analysis, which provided an analytic scaffolding to sort and interpret my data. Although framework analysis was initially designed for applied policy research, it has been proven to be an effective tool when research involves logic modeling (Clapham et al., 2017). Essentially, this approach to analysis involves “a systematic process of sifting, charting, and sorting material according to key issues and themes” (Ritchie & Spencer, 2002, p. 310). This process proved useful because it provided a series of five stages that I could follow to help organize and make sense of the data. These stages are familiarization, identifying a thematic framework, indexing, charting, and interpretation (Ritchie & Spencer, 2002).

Familiarization. This stage involves immersing oneself into the data (Ritchie & Spencer, 2002). For me, this entailed reading and re-reading transcripts several times to get a sense of what was there. These initial readings allowed me to gain an impression of the depth and richness of the data. I made sure to jot notes pertaining to key ideas and recurring themes across stories and transcripts to refer to in later stages of this process.

Identifying a thematic framework. This stage involves developing “a thematic framework within which the material can be sifted and sorted” (Ritchie & Spencer, 2002, p. 313). The processes in this, and the subsequent, stage are not unlike what Creswell (2014) would refer to as coding, “the process of organizing the material into chunks or segments of text and assigning a word or phrase to the segment in order to develop a general sense of

it” (p. 241). The point of this stage is to produce a sort of index that outlines the various categories that emerge from the data; something very much akin to what you might expect from focused codes—i.e., categories that “synthesize and explain larger segments of data” (Charmaz, 2006, p. 57)—developed through traditional thematic analysis. Though I did rely on insights garnered during the familiarization stage of this process to help build the thematic framework or index, I also decided to utilize the logic model that I had asked KidActive to prepare (mentioned previously, presented in Chapter Four) to inform the index categories. This is in tune with Ritchie and Spencer (2002) when they explain that researchers in this stage should also be drawing on a priori knowledge to determine these categories. Thus, an index was created that was divided into eight broader themes each of which had roughly six to twelve index categories that coincided with the data from the interview transcripts and the logic model (see Figure 2).

cluttered margins, as Ritchie and Spencer (2002) explain, this is regarded as a benefit to indexing because it allows researchers to begin to see the interconnections between themes and categories.

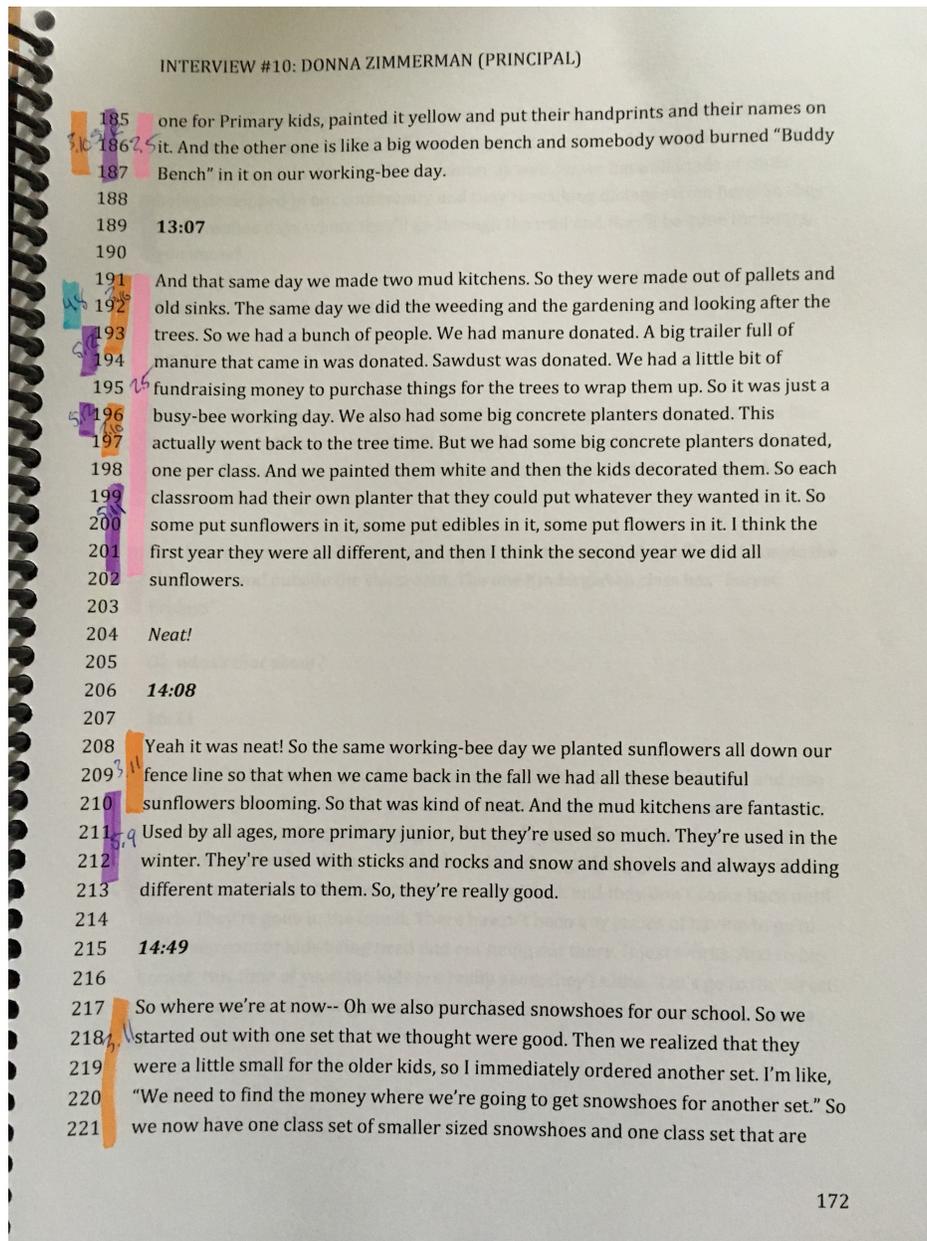


Figure 3: Indexed Transcript. This figure depicts how indexing was carried out throughout the interview transcripts.

Charting. Once all the transcripts were indexed I began the charting stage whereby “data are ‘lifted’ from their original context and rearranged according to the appropriate thematic reference” (Ritchie & Spencer, 2002, pp. 17–18). In other words, I pulled the quotations from the transcripts and organized them into charts that were systematized by theme and index category. Beside each quotation I indicated the participant via their assigned number as well as the corresponding line number(s) (see Figure 4). This differs slightly from the process outlined by Ritchie and Spencer (2002), in that quotations were copy and pasted verbatim from the transcripts; whereas they suggest paraphrasing the quotations when plugging them into the chart. Aside from perhaps having a more concise chart, I did not see the value in paraphrasing the quotations. Relatedly, I felt it necessary to keep the quotations in their entirety because the point of narrative is to try to stay as true to the participant stories as possible, and to honour them and their voices (Grimwood, 2016); paraphrasing at this stage would impede this.

1.0 INPUTS	
1.1 FUNDING	
Funding (1.1)	
You have to be very creative with how you come up with funds.	(#1, 143-144)
There are grants available. They're very specific, you know, for example, the Whole Foods, we've done some of those before. The TD Friends of the Environment, there are grants like that	(#1, 390-392) Also see 8.4
So we got a TD Grant out of that. So we got about \$3200 I think out of that.	(#3, 43-44)
And they granted us the money. I think it's around \$1800. So this year we're going to, in the spring, we're going to build our raised garden beds.	(#3, 106-108)
And we have a Meet-the-Teacher every September, and this year we decided to hold a barbeque before, and all the funds went to our yard. So just ways that we can raise money that way too because-- I don't want to say it's all about money because you don't want to turn people off if their school doesn't have a budget or they can't fundraise or whatever, but in terms of a plan that you want to keep growing, you do need a little bit of funding, some funds.	(#4, 369-375)
We're still fundraising. We're hoping the more money we raise by spring, the more we can put in	(#6, 66-67)
We did some joint fundraising together. We also applied for a Toronto Dominion grant that came through for us.	(#7, 17-18)
So we used the bulk of our TD grant, which was upwards of about \$3500 if I remember correctly. Plus we had some fundraising that we did through our School Council and through our school community	(#7, 40-42)
So we started with, you know, we got a grant from Toyota Evergreen, I believe it was \$1000, and then they matched it; the local Toyota dealership matched it with another \$1000.	(#10, 48-50)

Figure 4: Charting Example. This figure depicts a portion of the indexed quotations that were pulled from the transcripts and organized during the charting phase of my analysis.

It should also be noted that throughout both the indexing and charting stage the thematic framework I had developed was not fixed, rather it continued to be shaped and molded as I applied the index to the transcripts (see Figure 5) and again as I charted the data. In this regard, the process was quite iterative, providing me the flexibility to add, remove, combine, or reposition index categories throughout the thematic framework according to what emerged as I worked with the data.

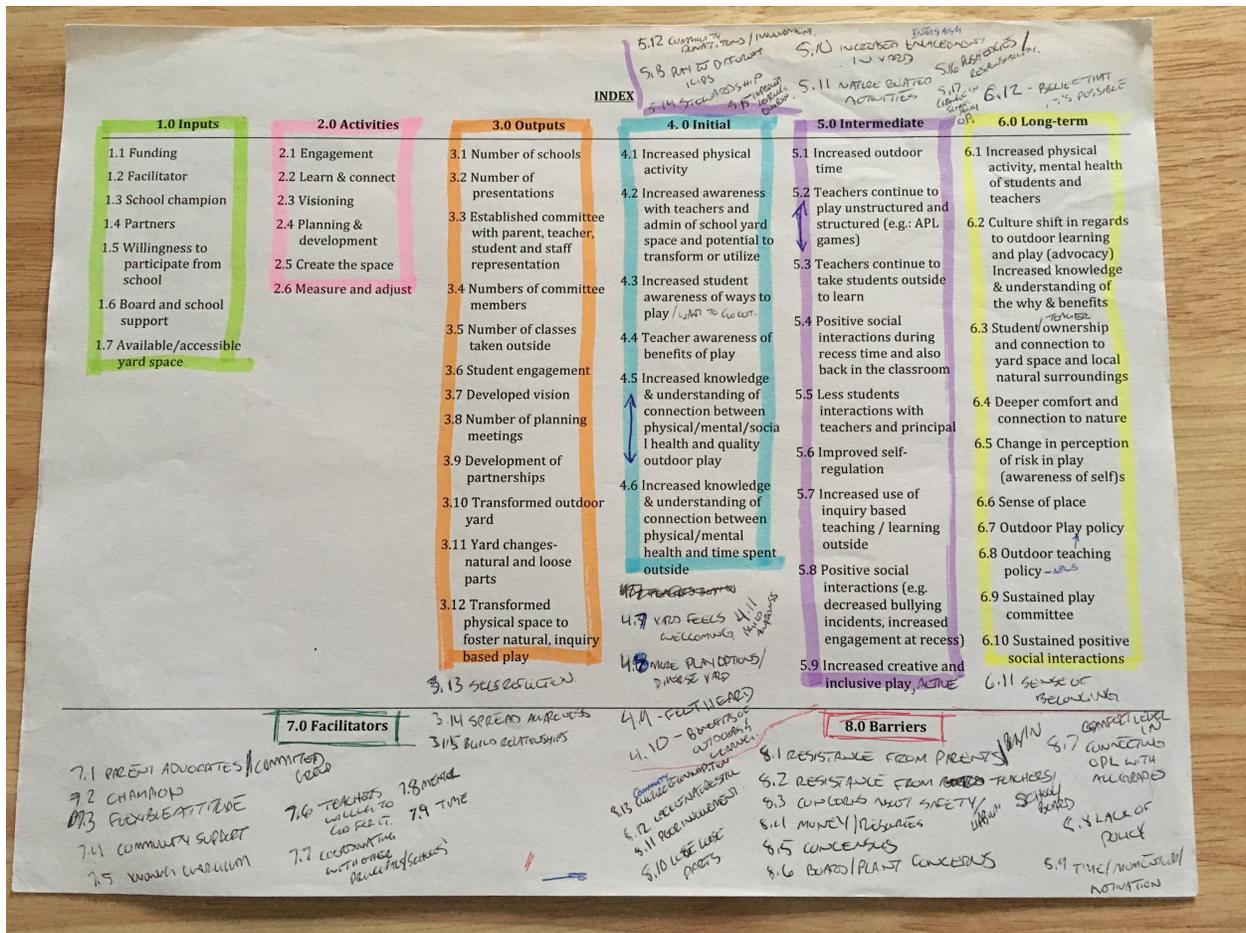


Figure 5: Modified Index. This figure illustrates how the initial index evolved as it was applied to the transcripts.

Interpretation. With all the data organized according to the thematic framework, the final stage of Ritchie and Spencer's (2002) framework analysis is to interpret the data. The processes in this stage understandably differ depending on the objectives of the research project (Ritchie & Spencer, 2002), but for me it involved using the narrative data to begin adding depth to the logic model KidActive had prepared in order to help it better tell the NPLS program's story. This process involved reading through the participant quotations organized in the charts, and interpreting the connections between them and the broader logic model themes that had guided the initial indexing. The result was a draft logic model (see Figure 6) that continued to be reworked as I immersed myself in the data.

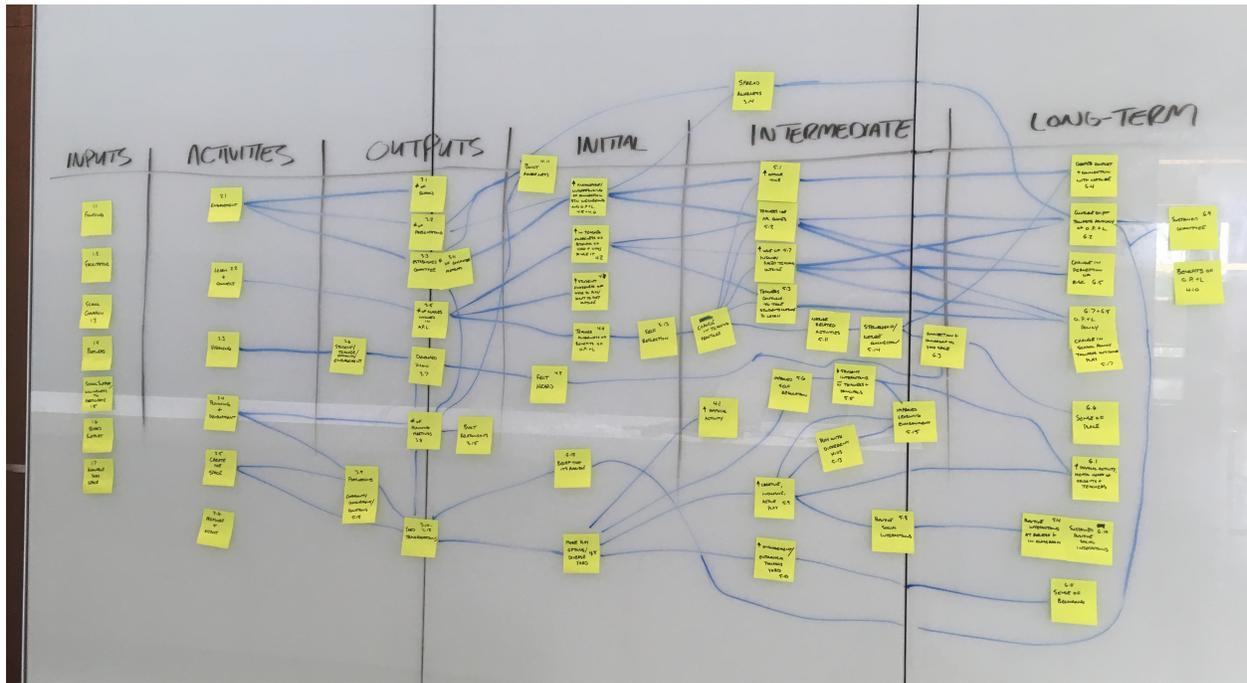


Figure 6: Draft of Logic Model. This figure depicts one of the initial drafts of the logic model, whereby I attempted to place sticky notes of the various index categories into their rightful columns, drawing the various connections I had interpreted from participant stories.

CHAPTER FOUR: RESULTS AND ANALYSIS

As a reminder, one of the chief objectives that influenced the design of this research was providing a program evaluation for KidActive's Natural Play and Learning Spaces (NPLS) program. Therefore, this chapter seeks to present the research findings while providing an evaluative analysis of the NPLS program by storying KidActive's NPLS logic model. As previously discussed, as a part of the data collection phase of this project, I asked KidActive to put together a basic program logic model. I asked them to fill in a chart that listed the inputs, activities, outputs, and outcomes (initial, intermediate, and long-term) pertaining to the NPLS program. This model (see Figure 7), which reflects KidActive's perceived ideals, was then used as a tool to analyze the data collected, looking for congruencies and incongruences between the model developed by KidActive, and the stories told by the various NPLS stakeholders.

NPLS Program Logic Model					
			<i>Outcomes</i>		
<i>Inputs</i>	<i>Activities</i>	<i>Outputs</i>	<i>Initial</i>	<i>Intermediate</i>	<i>Long-term</i>
<ul style="list-style-type: none"> - Funding - Board - School - Evergreen - TD - Community - Other - Facilitator - School champion - Partners - Willingness to participate from school - Board and school support - Available/accessible yard space 	<ul style="list-style-type: none"> - Engagement - Learn & connect - Visioning - Planning & development - Create the space - Measure and adjust 	<ul style="list-style-type: none"> - Number of schools (participants) - Number of presentations - Established committee with parent, teacher, student and staff representation - Numbers of committee members - Number of classes taken outside - Student engagement - Developed vision - Number of planning meetings - Development of partnerships - Transformed outdoor yard - Yard changes- natural and loose parts - Transformed physical space to foster natural, inquiry based play 	<ul style="list-style-type: none"> - Increased awareness with teachers and admin of school yard space and potential to transform or utilize - Increased student awareness of ways to play - Teacher awareness of benefits of play - Increased knowledge & understanding of connection between physical/mental/social health and quality outdoor play - Increased knowledge & understanding of connection between physical/mental health and time spent outside 	<ul style="list-style-type: none"> - Increased physical activity - Increased outdoor time - Teachers continue to play unstructured and structured (e.g.: APL games) - Teachers continue to take students outside to learn - Positive social interactions during recess time and also back in the classroom - Less student interactions with teachers and principal - Improved self-regulation - Increased use of inquiry based teaching / learning outside - Positive social interactions (e.g. decreased bullying incidents, increased engagement at recess) - Increased creative and inclusive play 	<ul style="list-style-type: none"> - Increased physical activity, mental health of students and teachers - Culture shift in regards to outdoor learning and play (advocacy)/ Increased knowledge & understanding of the why & benefits - Student ownership and connection to yard space and local natural surroundings - Deeper comfort and connection to nature - Change in perception of risk in play - Sense of place - Outdoor Play policy - Outdoor teaching policy - Sustained play committee - Sustained positive social interactions

Figure 7: Initial NPLS Program Logic Model. This model depicts the initial model developed by KidActive that reflects the perceived ideals of their NPLS program.

Those trained in logic modeling would likely critique this model due to its inability to indicate how the different activities are linked to specific outputs and how these outputs are connected to the different outcomes (McDavid & Hawthorn, 2006; W.K. Kellogg Foundation, 2004). This chain of reasoning, or series of potential if-then statements are said to illustrate how each element in the model results in the succeeding elements (McLaughlin & Jordan, 1999; W.K. Kellogg Foundation, 2004). For example, if we have these inputs, then we will be able to provide this activity; and if we provide this activity, then we will get these outputs, and so on. However, despite the inability of this model to demonstrate what authors refer to as “casual linkages”, McDavid and Hawthorn (2006) commend such a model because it still helps us to “categorize and describe program processes and outcomes” (p. 46).

Moreover, this potential limitation aligns more with positivist/post-positivists paradigms that seek to make causal claims, whereas, and as mentioned previously, I am situating myself within the constructionist camp that seeks to interpret the significances of meanings and perspectives. Thus, I was not overly concerned with developing generalizable causal chains for KidActive’s logic model. Instead, the model yielded itself to being an effective framework from which to construct the story of the NPLS program. Figure 8 presents a simplified version of the logic model I created, intended to prime readers for the slightly more complex version presented afterwards. In this model, the various elements within the logic model categories (i.e., inputs, activities, outputs, and outcomes) have been collapsed into overarching themes. These themes are expanded on in Figure 9, which presents the model in its entirety.

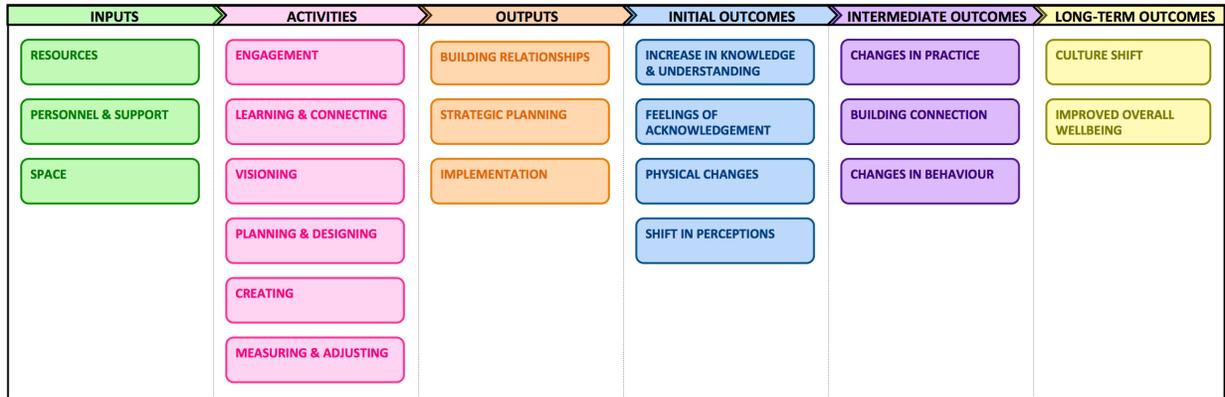


Figure 8: Synthesized NPLS Program Logic Model. This figure illustrates a simplified version of the logic model developed from participant stories.

In keeping with the tradition of logic modeling, the model depicted in Figure 9 does have the requisite linkages (i.e., causal connections) foundational to logic modeling. However, these linkages should not be thought of as causal connections; instead, they are more appropriately considered storied connections, as these linkages are based on the perceptions of the research participants. Furthermore, they are based on my situated and partial perspective as analyst, and therefore I am just as a part of the following representation as the research participants. As such, the storied connections between related elements in the model have been intentionally drawn with a dashed line instead of a solid arrow—which is conventionally used in logical modeling—in an attempt to distance my research from the more post-positivist tenets of logic modeling, while also honouring its moorings in this paradigm. Thus, it is perhaps more appropriate to consider the model a heuristic, a visual representation that provides some structure and order to the data in a way that allows audiences to see and understand how everything relates.

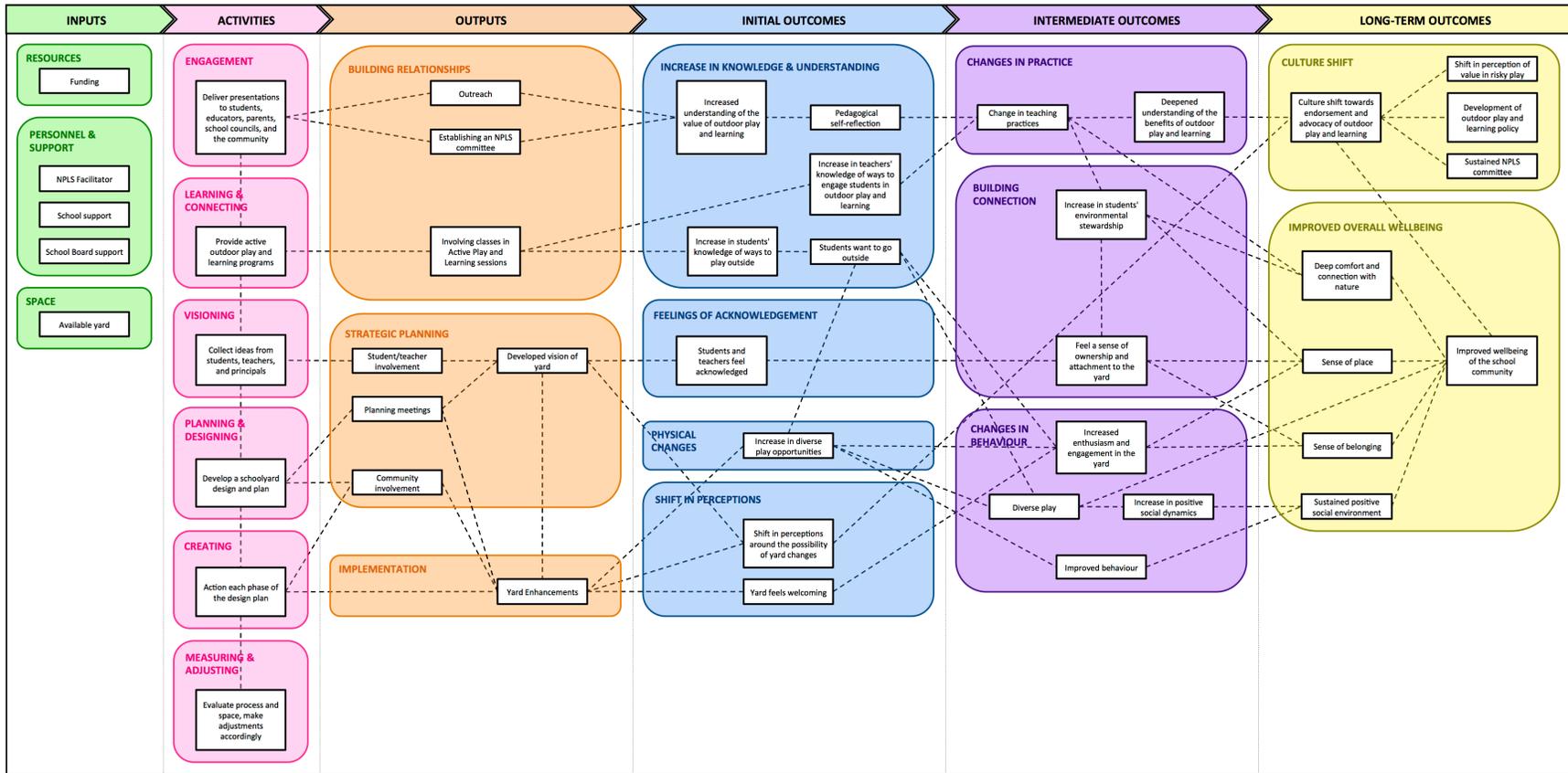


Figure 9: Entire NPLS Program Logic Model. This figure illustrates the detailed version of the logic model developed from participant stories.

The complexity of this model warrants expounding and thus, the remainder of this chapter seeks to unpack each of its components utilizing participant voices to substantiate the different themes and their corresponding elements.

4.1 Inputs

In program logic models, inputs consist of all the resources that are needed to deliver a program (McDavid & Hawthorn, 2006). Without these elements, the program would be unable to operate. In order to successfully deliver the NPLS program three types of inputs were deemed necessary: resources, personnel and support, and space. The following sections outline these inputs as described by the research participants.

4.1.1 Resources

The main resource that participants explained to be vital to the success of the NPLS program was funding.

Funding

One of the main prerequisites for being able to successfully provide a program is funding. In the case of the NPLS program, funding is required at an organizational level. With KidActive being a charitable organization, they rely heavily on grants to be able to pay their staff to facilitate the programs they offer. As Heidi (NPLS facilitator) explained, KidActive had to “*apply for some funding...through the Ministry of University, Colleges, and Training to support [her] position in starting this project*” in schoolyards throughout Renfrew County. With this funding, KidActive was able to begin reaching out to schools and start to facilitate the NPLS program. The need for funding however does not stop there.

Despite KidActive providing the NPLS program to participating schools for free, it is the responsibility of the schools (with the help of Heidi) to acquire the necessary money to

fund the actual yard enhancements that take place. As Joyce (principal) explained, *“I don’t want to say it’s all about money...but in terms of a plan that you want to keep growing, you do need a little bit of funding.”* Jane (principal) puts it a bit more matter-of-factly when she said, *“I mean financially, obviously the more grants we can get, the more funding we can get, the more we can do with it.”*

With money being a requisite input that is often hard to come across in budget-strapped schools, Sophia (principal) spoke of the need to, *“be very creative with how you come up with funds.”* Many of the participants spoke about acquiring money through Toyota Evergreen School Ground Greening Grants and Toronto Dominion Friends of the Environment Grants. Some, like Donna (principal), have relied on the more creative fundraising efforts that Sophia alluded to. For example, when speaking about some of her school’s fundraisers, Donna explained,

We had a used clothing sale where we had parents donate used clothing and we had a big sale in the gym during a PA day trying to raise money...I hold a harvest supper for the school in the fall. So I donated my money towards the snowshoes last year. This year I’m donating the money...to build another shade structure...

Later she remembered, *“We had a photo fundraiser too. So one of the parents is a photographer and she did mini family shoots in the winter outside and any of that money went back into Natural Play as well.”* Through such creative avenues, schools worked to fundraise the money needed to support their respective NPLS programs.

4.1.2 Personnel and Support

Though funding was deemed important, participants also spoke of the need for particular personnel as well as support from key decision makers.

NPLS Facilitator

The NPLS facilitator, who was foundational in forming the partnerships between the participating schools and KidActive, was another input that participants believed to be vital to the delivery of the NPLS program. In all cases it would seem that it was the facilitator who exposed the schools to the potentiality of their playgrounds to be able to encourage outdoor play and learning. As Nicole (teacher) put it, *“Heidi started us on our way, on our path.”* Relatedly, when explaining how her school’s journey with KidActive began, Joyce (principal) explained,

Heidi came to the staff meetings—this is how it all began...she did a bit of a presentation and a slide show for staff just to expose us really to what our play space could look like, incorporating more natural pieces into our play space.

She continued to explain the importance of the facilitator’s role in helping them change their thinking in regards to outdoor play and learning saying, *“I think a person like Heidi is important to get people started...I think her work to get us going and get us thinking in a different way was really important”* (Joyce). Importantly, this is something that Heidi (NPLS facilitator) recognized as being part of her role as facilitator:

It is being able to support people in starting to open up and see that there are different options and possibilities, and if at the heart of what we want to see is really healthy children, then we’ve got to get out of our own way and not do what we’ve always done and try new things out and be vulnerable and put in energy in different ways.

To do this Heidi would meet with interested individuals from the school community and help them *“to come up with ideas to help encourage/facilitate natural play”* (Theresa & Katrina, teachers) in their playgrounds. Donna (principal) described it as *“kind of like winning the lottery, because we got Heidi to come and support us and really have a look at our playground and, you know, see what we could do to make some improvements.”*

Heidi also played a role in helping schools acquire the necessary funding to move the projects forward. As Nicole explained,

What she really helped with was of course money and funding and that. She really helped us bring forward grants...So then I did the paper work and then I sent it her way, and then she kind of had a look at it and made some suggestions. She was like, "You know...you probably would be better if you did this, or if you said that," which really helped because I don't have the vocabulary related to environmental type things

Although the NPLS facilitator proved invaluable in regards to starting the schools on their outdoor play and learning path, participants also emphasized the necessity of the facilitator in terms of keeping the project extant and moving forward. Heidi (NPLS facilitator) referred to this as *"having someone there for a while to hold [the school's] hand, to help guide them along, to say, 'This is important'...having someone external to help support holding the container...having that facilitator, that mentor."* Nicole (teacher) explains the impact of *"Heidi's constant checking in"* when she said,

It was those little check-ins, those little "How's it going?", those extra like, "We should have a meeting", like those things. Whereas it probably would have got put on the back burner. Or we would have been like, "We tried. We give up", you know?

Similarly, Jason (principal) spoke of the importance of the NPLS program and consequently, the NPLS Facilitator for keeping him focused:

The program and the involvement with KidActive has kept me focused on it, as opposed to just being something "Oh yeah. That's something I value and believe in, but I'm not going to get to," right? We have our regular meetings. We have our committee. People are doing things. We're taking action towards it. Whereas if it wasn't a structured thing, it would be something that we'd probably pay lip service to and wouldn't give the same service to.

So not only is it important to have the facilitator to get the program into schools, but it is also important for the sustainability and success of the program.

School Support

Another input necessary to establish the NPLS program is a supportive school community. If there is not a willingness within the school to take part in the program, the program will not happen. Heidi (NPLS facilitator) spoke of this when she told me about how two schools she has been working with failed to really buy-in and support the program:

Working with Fifth Street Elementary School, everything's just sort of petered off there. Same with another school we probably haven't even spoken about—Ninth Street...a new school where I did the Active Play and Learning and that's as far as I got...there was no support in this school from the administration...that's key, like I've learned this. I've learned not to have meetings without administration there because they're the person that really helps to hold the container for the school to work within. So there really wasn't much support from the admin at this one...Same sort of thing with Fifth Street. This big school, there wasn't a whole lot of...people holding the container within the school...I feel like the administration wasn't really able to support where it was needed.

Alternatively, when administration does buy-in, it was clear how this impacted the progress of the program. For example, Nicole (teacher) expressed at length the benefit of having a principal who backed the program:

She really has been really supportive of it...Like very open to anything. Not everybody is, but she has been. And then when I was like, "We need grass, and we need someone to come in and really do it right...because we can't do that part on our own." She was like, "Ok", and I was like, "This is going to cost a lot of money," and she was like, "Let's do it!"

Similarly, it was helpful from a principal's perspective that the teachers were supportive of the idea of the NPLS program. As Joyce (principal) remarked, "*Our teachers were really interested. They weren't all necessarily interested in being on that subgroup, but they were all very interested in having Heidi come in and do the visioning, and listening to kids. So that helps*". Furthermore, this support often materialized in the form of a school champion—

discussed in more detail in Section 4.5.1: Facilitators—“*someone willing to take the reigns and do it*” (Nicole, teacher). I mention this here as an input as well because without the school champion(s) saying, “*I will take it on. I will do it*” (Debra, parent), the likelihood of the NPLS program being successfully implemented appeared quite low. Thus, support from the school community (i.e., teachers, administration, and parents) was found to be an essential input.

School Board Support

Another required input according to participants was school board support. Lack of unbridled support from the school board was most often spoken about in the context of being a barrier to the success of the NPLS program. As Nicole (teacher) explained,

So there have been some challenges with respect to...the School Board...so we had to talk to Plant and things had to be approved. So they were very unsure...It's new to them and they are always concerned about safety, they're concerned about lawsuits and such...

Given the need to have approval from the school boards in order to be able to make the desired changes to the yard, it should therefore be considered an important input needed to provide the program. Although there was a general perception amongst participants that their school board lacked support for the program, it should be noted that, as Heidi (NPLS facilitator) explained to me, the Renfrew County District School Board granted KidActive's NPLS program funding to continue their work in the schools for another two years. If it were not for the support of the school board, it is unclear whether KidActive would have been able to continue the facilitation of the NPLS program. So not only have they shown financial support by directly funding the program, but Jane (principal), when addressing a

critique of the education system in that they need to support/subsidize programs like KidActive's NPLS program, was quick to explain how her school board demonstrates support by granting schools the autonomy to use their budgets as they see fit:

I think the Board gives the schools autonomy to support the initiatives that are important to our communities, right? Whereas some other schools...[have] a fantastic schoolyard with lots of trees and lots of already existing natural play space, right? So I think you wouldn't necessarily see the Boards jump on to support system-wide funding of the partnerships. I think it would really be an individual school community-based decision based on the needs of that school and what that looks like. But as long as they continue to give us the autonomy to use our funds where we see the need, I don't know that we would see central money coming down unless the government was pushing the natural play spaces, that all the schools need to do that.

What this demonstrates, is that just because the school boards might not allocate funding directly to schools to support the development of the NPLS and similar programs, does not mean that they do not support it. In giving the schools the freedom to allocate their money towards initiatives that are important to them, they are in a sense supporting the NPLS program.

4.1.3 Space

Lastly, available yard space to be enhanced and transformed is, perhaps, an obvious input required for the NPLS program.

Available Yard

Participating schools agreed to participate in the program often because they had acknowledged that their yards, "left a lot to be desired" (Nicole, teacher); something Heidi had noticed in her initial work with KidActive:

I just really started to hone in to the state of schoolyards, and really notice the lack of affordances and the lack of nature; so the lack of things that existed in the schoolyard for the kids to engage in.

Heidi was not alone in this assessment. Maureen (parent) had come to a similar conclusion in regards to her children's schoolyard: *"There was nothing for them to do. I mean you can't use your imagination when there's just gravel...it just looked bad. I mean no one would want to send their kid..."*

Others recognized that they had a nice yard, but that it had potential to be something more. For example, Sophia (principal) explained, *"we are blessed with an amazing green space, but we didn't have a lot of areas for activity or to promote activity in the yard. It's really open"*. Similarly, Joyce (principal) understood that her school's playground had room to grow into something more:

We have a lovely yard here, but at that time there wasn't a lot going on. And most of it was kind of sports oriented right? We had soccer nets and we had you know some tetherball type of thing up on the Primary yard, and we had play structures. That was kind of all we had.

Thus, for KidActive to be able to come in and provide the NPLS program, there had to be a decided need to transform or enhance the existing schoolyards.

4.2 Activities

In program logic models, program activities are thought of as the work done in a program (McDavid & Hawthorn, 2006). As explained previously, KidActive's NPLS program can be broken down into six main stages: Engagement, Learning and Connecting, Visioning, Planning and Designing, Creating, and Measuring and Adjusting. I will now discuss the various activities that occur within these stages as reported by the participants.

4.2.1 Engagement

The NPLS program's Engagement stage involves the NPLS facilitator giving presentations to students, educators, parents, school councils, and the broader community to introduce these different stakeholders to the program. The initial phase of Engagement

began with a survey that was sent out to potential participants. As Donna (principal) described,

I received a survey from Heidi Palmer...It was just asking about our school ground. You know, if there was shade, what kind of natural resources were there in our school ground? And as I was answering the survey, I was like, "Yeah it seems like our playground might be lacking a little bit."

Then, as Heidi (NPLS facilitator) explained,

I arranged to go to schools and present about the project...I went and first talked to the principal, and then presented at a staff meeting and Parent Council. And then really, the principal spoke with the school community and they made a decision. So all those schools then decided to participate.

When telling me about this stage of her school's NPLS journey Joyce said, "So [Heidi] showed us this really amazing slideshow incorporating some more natural elements into the play space and people were really excited about it." She continued,

And I believe Heidi came to a School Council meeting and showed the same slideshow to parents and talked to them about it. And they were like all over it. You can't help but want this stuff for your kids, right?

This initial outreach helped to pique the interest of potential participants and forced them to begin thinking about what kinds of changes they could make in their schoolyards. As Donna (principal) proclaimed after reflecting on the impact of Heidi's presentations, "You just think there's no limit to what you can do to encourage and get kids excited about playing outside."

4.2.2 Learning and Connecting

After the Engagement stage, the NPLS facilitator then visits the schools and facilitates Active Outdoor Play and Learning programs with the students and teachers. Heidi (NPLS facilitator) explained the Learning and Connecting stage to comprise of,

Engag[ing] the schools in some active play outside. So getting outside in the schoolyard and playing games, and getting the kids to take a look at their schoolyard and what's there, and to become familiar with me as a facilitator.

Donna (principal) explained that the Learn and Connect sessions “*helped the teachers...gave them some strategies, some things to use other than just free time outside; some organized games they could play.*” Relatedly, Mary (vice-principal) reflected, “*I think that's Heidi's goal coming in and working with teachers and the classes...the teachers are to be there...so that they can continue that during their outside activity time, their [Daily Physical Activity], or their Gym.*” In this way, the Learn and Connect sessions appeared to be a useful avenue in which to provide teachers the tools and techniques to continue to take their students outside to play and learn.

4.2.3 Visioning

A part of the Learning and Connecting stage is getting the school community to begin to reflect on what their schoolyard currently has. This is then followed by the Visioning stage. Joyce (principal) described the components of this activity as follows:

[Heidi] came into every classroom and they used the Smart Boards and did brainstorming about what was currently in our yard and then...what the kids would like to see. So she did maps with every class and then kind of a wish list. And then we compiled those and we shared them with staff and we shared them with parents.

Nicole (teacher) described this stage as “*a real dialogue between [the students] and [Heidi]*”. In reflecting on the importance of including the students in this stage of the program, Jane (principal) explained, “*they have a part in making it happen...their input's been involved in it...they feel like they've been a part of that process*”. The Visioning stage, then leads into the Planning and Designing stage.

4.2.4 Planning and Designing

This stage involves firming up the schoolyard design and developing a plan to bring that design to fruition. As Joyce (principal) explained, they would have committee meetings where they “[took] all the information from the students about what they would love to see, and [took] the information from the teachers on what they would like to see, and formed some sort of master plan.” This coincides with how Heidi (NPLS facilitator) described this stage of the program when she said,

So then we started committee meetings...looking at, “What is it the kids want? And how do we support this? And how do we decide where our priorities are and then decide what kind of changes to make to move forward?” And what was wrapped up in that too was applying for grants, and “Who in the community can support this process? What is it that we want to foster in the schoolyard?” Just kind of mapping all that out. And then meeting regularly and trying to pull it together and figure out how to action all of this stuff and how to make it happen.

Once a plan of action was established, the next phase was to implement it.

4.2.5 Creating

The Creating stage of the NPLS program is when the schools take their plan and put it into action. The specifics of what the schools did in this stage are described in Section 4.3.3: Implementation, but essentially creating the space involved gathering the different stakeholders—students, teachers, parents, principals, and community partners—to come together and transform the space. This involved planting grass, putting in trees, building mud kitchens, constructing outdoor classrooms, creating gardens, and bringing in loose parts both natural (e.g., logs and stumps) and synthetic (e.g., shovels, pipes, and tires) among other things. Often these installations would occur in phases because each element required a lot of work as well as access to resources, so it was a matter of implementing the plan in manageable, actionable phases.

4.2.6 Measuring and Adjusting

The final stage of the NPLS program is about Measuring and Adjusting—i.e., evaluating the process, evaluating the space, and making adjustments accordingly. Despite most schools being early in the NPLS process, the dynamic nature of the program lends itself to constant measuring and adjusting. For example, Sophia (principal) spoke about needing to be malleable to the always-changing wants and interests of the school community. She explained,

So it's finding out what they want, what the kids want. And it always shifts and changes. Like your priorities shift depending on the season, depending on, you know, what the staff want, what the kids show interest in. And I think you have to be flexible with your plan...So it's having a plan, getting input from partners, but it's also being flexible to know that depending on the needs of the kids and the needs of the staff, and where everybody is, where their passion lies, then that's where you put your funds and so forth.

Other participants shared similar stories of measuring and adjusting in response to needs as they arise. For example, Debra (parent) explained that they were beginning to realize that they did not have enough loose parts for the older grades. She explained,

The Juniors and the Intermediates are asking for them, which is great, especially those Grade 7s or 8s who don't usually want to put on a pair of snow pants...They want to play, there's just not enough for them to play with. So we're going to go purchase some for them now.

Reflexive adjustments such as these are necessary to keep the program relevant to the continuously shifting demands of the students.

4.3 Outputs

In program logic modeling the outputs are described as the tangible results of the program's activities (McDavid & Hawthorn, 2006). For KidActive's NPLS program, these are the direct products of each of the six NPLS stages. In typical outcome logic models these products are often countable; for example, the number of participants reached. This

however, was not the nature of the data I collected, so although the upcoming discussion does not provide specific tallies in regards to the different outputs, participant insights are used to demonstrate the production of these outputs, which could be grouped generally into three main categories: building relationships, strategic planning, and implementation.

4.3.1 Building Relationships

One of the key outputs of the different NPLS program activities was building relationships. Outreach, establishing an NPLS committee, and involving classes in Active Play and Learning sessions were all seen as important outputs pertaining the building of relationships between KidActive and the school committees in which they were providing the program.

Outreach

According to Meissner, the total number of schools KidActive has worked with to implement the NPLS program is nine; two of which are within the Catholic School Board, with the remaining being a part of the Public School Board (personal communication, September 17, 2016). These schools all vary in terms of their uptake of the program, with some being very committed to seeing the program flourish, and others having failed to gain any sort of traction with respect to moving forward from the initial Engagement and Learning and Connecting stages.

What is perhaps important to note, is that over the span of the three years that KidActive has been providing the NPLS program, the number of new inductees to the program has decreased. The first year they had five schools sign up; in the second year two more agreed to participate; and in the third year, another two schools decided to take part in the program (personal communication, September 17, 2016).

Also in regards to outreach, each of the seven schools that I spoke to all mentioned that Heidi had come and presented to them, whether it was to the students, the teachers and administrators, and/or the Parent Councils. Additionally, some participants spoke about presentations that Heidi did at higher levels in the board. For example, when talking about how she became aware of the NPLS program, and how her school's NPLS story began, Jane (principal) explained,

Heidi Palmer from KidActive came to one of our leadership team meetings a number of years ago to talk to all the managers and principals of our Board. She spoke a lot about what the schools have been doing in terms of just increasing natural learning spaces outside, what that looks like, and how we could make more outdoor learning available...So we jumped on board.

Similarly, Heidi (NPLS facilitator) told me about how KidActive was “*invited to come and present to the Board of Directors and Trustees of the Public Board,*” explaining that, “*We were invited to submit a proposal! So we did and they gave us some funding to continue the work!*” So not only were the presentations important in terms of fostering interest in the program at the school level, but they were also crucial in gaining support at the board level.

Establishing an NPLS Committee

An important part of the process that happens concurrently with the initial Engagement piece discussed previously, is that school principals who bought in to the program would have to then find members of the staff and community to form an NPLS committee. As Heidi (NPLS facilitator) explained,

And then at the same time we started building a relationship with the principals who started identifying key members on the staff and on Parent Council or other parents who were interested in forming a committee to take this information and take different goals and priority areas in the school and try to move them forward.

In some cases, it was the engagement piece and the presentations discussed previously that provided the impetus for the formation of an NPLS committee in the schools. In one case, it was the keen interest and ambitious attitude of a particular parent who wanted to see things move forward in regards to outdoor play and learning at her children's school:

I heard that they had got a grant so I actually emailed KidActive myself, to be like, "Hey whatever you guys are doing, I want on it. I want on the committee because I don't want my kid to go to a school where there's no grass to play on" (Maureen, parent).

Overall though, it sounded as if it was relatively easy to put together a group of individuals committed to the premise of the NPLS program. As Sophia (principal) explained, *"I have a large group of about 10 or 12 parents, which is huge considering most of the school groups now"*. Not all groups were large, but they were certainly dedicated to the cause; as Donna (principal) explained, *"I mean our Natural Play Committee isn't a big group...but it's a passionate group"*. She continued to express her gratitude for her devoted group and how happy she was *"just knowing how much it means to so many people and how much they're willing to do for our environment and for our playground."*

Involving Classes in Active Play and Learning Sessions

Classes getting involved in outdoor play and learning through the Active Play and Learning sessions was an output participants reported resulted from the Learning and Connecting stage of the program. When talking about these sessions, Joyce (principal) explained,

So then the next step was Heidi spent a portion of the day with every classroom in our building...taking them outside and engaging them in some games that were a little less to do with sports equipment and more to do with imagination and just using the whole yard.

Other participants corroborated this with very similar responses when talking about their NPLS program journeys.

The Active Play and Learning sessions proved to create a bit of a buzz around the NPLS program. As Cheryl (teacher) explained:

[Heidi] invited everybody to participate, like it wasn't just a couple classrooms, like everybody was having that hour and half of initial play...So I think that was key to the success because everybody was talking about KidActive. All the teachers were on board.

By including the entire school and getting everyone talking about the program, the Active Play and Learning sessions appeared to help to promote solidarity in regards to the objectives of the NPLS program.

Overall all, these outputs were seen as important because of their capacity to build relationships. Heidi (NPLS facilitator) spoke to the importance of these elements when she told me about a school that needed a lot of time to,

build the trust, build the community for them to kind of come together and figure out what it is they wanted to do. To vision and figure out what that vision was going to look like and have them move forward on it...and a lot of that was I think building relationships and conversation back and forth about really trying to understand what they wanted to do and really trying to trust this thing and to commit.

So not all schools bought into the program and the process right away. In some instances, as with the school Heidi was telling me about, a level of trust and understanding was needed in order to move forward, something that was accomplished by building relationships between KidActive and members of the school community.

4.3.2 Strategic Planning

Another key output of the NPLS program was strategic planning towards the development of an enhanced yard space. Important elements of this strategic planning

were student/teacher involvement, planning meetings, a developed vision, and community involvement.

Student/Teacher Involvement

Because of the collaborative nature of the program, all members within the school community, including students and teachers, were encouraged to be part of the process. As Jane (principal) explained,

They have a part in making it happen, right? Like the kids are actually out there. We actually had the whole planning stages, of conversations with staff, conversations with students, conversations with school council and parish like, "What do you want this space to look like? What do you guys want?" So their input's been involved in it as well, and they feel like they've been a part of that process, so that creates that attachment to it.

This by-product of connection and attachment that results from being involved that Jane mentions is important and will be discussed further in Section 4.4.2.2: Building Connection. However, as we discuss outputs, it is important to mention the involvement of the students and teachers because it is through this collective process that a vision of how each school's playgrounds could be transformed was created.

Planning Meetings

Another output of the NPLS program is the planning meetings that occur during the Planning and Designing stage. Heidi (NPLS facilitator) explained that the purpose of these meetings was to take the vision that had been developed by the school community and begin to, "*decide where [the] priorities are and then decide what kind of changes to make to move forward.*" The number of meetings that schools had appeared to vary depending on where they were at in the process of transforming the yard. As Donna (principal) explained, "*We used to meet monthly and now we meet four or five times a year*". As schools got further along in their development, they found they did not have to meet as often.

Developed Vision

Through the consultative process and various planning meetings described earlier, a vision of what the schoolyard could become was established. For example, Maureen (parent), whose children's schoolyard began as a patchwork of sand, gravel, and cement told me her school's vision:

They had KidActive in and had a plan of what they wanted...one of the biggest focuses was they wanted to have somewhere for the kids to play besides sand...they wanted grass, and they wanted trees and they wanted it to be more fun and bring in some loose parts and stuff like that.

With the grass now in, Jane (principal) explained the next couple phases involved in the vision they had developed:

The next sort of phase that we implement is a couple more different areas of grass...the raised [garden] beds so that there's an actual working garden, like where there's vegetable gardens/flowers, a little greenhouse area...finish up with the trees, and some living fences that we're looking at as well. That's the next area.

Taking these visions and bringing them to fruition is the job of the NPLS committees who would get together to figure out how they were going to do it.

Community Involvement

Another output that participants credited to the Planning and Designing stage, as well as the Creating stage of the program was getting the broader community involved. This involvement proved to be an important component of the strategic planning. Whether it was financial support, needed expertise, or even just donating time to come out and help on working days, it was important for the NPLS committees to reach out to their broader communities to make connections and see if anyone could help with their projects. As Joyce (principal) described, in most cases it was just a matter of looking around the table and trying to determine if anyone had any connections that they could tap into:

So we had a dad that came in. His company installed all those tires. We had somebody else who knew a person who owned a tire shop, and he donated all the tires. So he collected them over months from big tractors and that kind of thing...We had a person that knew somebody from Sport Renfrew that lobbied to get some new netting for our soccer nets. We have a dad here who's connected with a company that donated some money for our outdoor benches...And we got the rocks free from one of the parents' pits. Yeah so you just don't know until you start to ask.

Participants were eager to share their stories of being able to tap into and leverage their community for resources. Donna (principal) told me,

We had one of the grandparents of a student here, he lives right across the road, he made one of the benches [see Figure 9]. We had another grandparent donate the materials and had a local lumber company donate materials. So he made a second of the benches.

Nichole (teacher) explained to me, *"One of our parents worked at Home Depot and she donated a bunch of plants, so we now have hostas and everything underneath the trees.*



Figure 10: Yard Enhancement: Buddy Bench. This photo shows one of the benches that was created by getting the broader community involved with the NPLS project.

It was the job of the NPLS committee during the Planning and Designing stage of the program to pool these resources, harness the community's willingness to get involved, so that when it came down to actually creating the space, everyone was on board. As Donna (principal) explained, *"So we use the community resources and pull them together. So when it comes to one of our working days, like it's all hands on deck."* This leads us to the final output of the program: implementation.

4.3.3 Implementation

The final output of the NPLS program that participants spoke about was what was actually implemented as a result of first five stages of the program, discussed previously. Broadly speaking this implementation can be described as yard enhancements.

Yard Enhancements

Yard enhancements can be broken down into two main categories: loose parts and natural features. Loose parts were regarded as fairly easy to implement because of their low cost and perceived ease to install (i.e., simply putting them in the yard); and for that reason, many schools started there. As Jason (principal) explained, *"We started really focused on loose parts. That was the focus. That was something we felt we could really do right"*. Many schools reached out to their communities to get these elements donated. As Penny (teacher) explained, *"We got community members together to bring in loose parts and things like that"*. Some, like Donna (principal) would even put a call out in the local newspaper or school newsletter saying, *"Here's a list of what we're looking for. How can you help out?"*

These calls for loose parts were often answered. For example, Maureen (parent) explained how her, her husband, and her children responded to the request for loose parts:

“So we have property...60 acres of bush lot. So we just went and cut a whole bunch and then drove them to the school on a weekend and dropped them off...We brought in different disks and logs, which are all still there” (see Figure 11).



Figure 11: Yard Enhancement: Loose Parts. This photo shows some of the loose parts that were donated to the school.

Similarly, Penny (teacher) told me how her school acquired some of their loose parts:

So we had, my husband and a couple other people’s spouses cut up logs, some made circle plate-sized ones that were thin that they could use for tic-tac-toe or footprints and then little short logs that they could stack, that they could do different things with. And yeah they seemed to enjoy that...One teacher brought in those big wooden spools from Hydro and put them out there. So the kids either rolled them or they turned them into tables. So we just kind of put random things in there and they find things to do with them.”

Donna (principal) had this to say when explaining her school’s inventory of loose parts

We fundraised and we got a shed...where we keep some of our loose parts. We have some stumps and some wooden disks and sticks, and whatever kind of loose parts that we can put in there. We also have some that aren’t natural, so like the Dollar Store sells plastic bricks for making igloos and things. I think I bought 25 or 30 of those just so that we had enough for the kids who want to use them. We have shovels...that they take outside in the winter during recess. We have toboggans as well.

Many schools found benefit to these kinds of synthetic loose parts. Debra (parent) listed, *“crazy carpets and snow shovels...those blocks that you build igloos with”* when asked what loose parts her school had brought in. She also spoke about the 90 pairs of snowshoes that she spearheaded the purchase of. Though these elements were not natural, they all still provided a means through which the children could interact with the natural environment. This, as Heidi (NPLS facilitator) explained, was one of the goals of introducing loose parts to the schoolyards: *“A lot of the loose parts that we’ve tried to focus on are different things that they can then interact with what is natural there.”*

Then there were the yard enhancements involving natural features. These transformations looked different depending on the schools needs and desires. For example, the schoolyard at Second Street Elementary School used to be sand, gravel, and cement so all they wanted was to have grass: *“We just really wanted grass, like we really wanted grass”* (Nicole, teacher). So as Maureen (parent) explained, the *“biggest part of the project was getting the grass and trees planted so the children had a place to roll and tumble or a tree to sit under and read a book”*. Figure 12 presents a photo of these yard enhancements.



Figure 12: Yard Enhancement: Grass and Trees. This figure illustrates the grass and trees that had been planted in this schoolyard to help enhance the space, which had been gravelly sand previously.

Grass is such a simple intervention, and yet the impact was quite large. When talking about the impact of putting in the grass in her schoolyard Nicole exclaimed, *“It’s not depressing anymore!”*

Another school wanted to enhance the yard by manipulating the topography of the yard to give it a bit more texture. Donna (principal) explained, *“we actually just got a load of dirt dumped in and we made a hill. Then...we made a second hill. So it’s kind of like a camel hump out there.”* And again, this simple intervention had an immediate impact: *“like every kid in the yard was on them. These two little hills with the whole school on them... yeah it*

[was] pretty exciting” (Donna, principal). Figure 13 presents a photograph of this yard enhancement.



Figure 13: Yard Enhancement: Camel Humps. This photo illustrates the two small mounds that had been put in this schoolyard to add topographical diversity to the yard.

Several schools also put large rocks in their yards to enhance the space. Fifth Street Elementary School tried to create a bit of an outdoor classroom with the rocks they put in. As Evelyn (teacher) explained, *“It’s just a series of rocks that are made into a couple concentric circles that are maybe spaced about two feet apart”*. Penny who was there for the installation explained the intentionality of how the rocks were placed:

I was there in the summer when we laid it out. We tried to do it in a way that kids could use it for jumping rocks or they were close enough that you could sit and have a classroom conversation. We did it with a slope so that you could use the rock as a stage and have everybody looking... We put it in an area so that at some point, we planted some trees around it, so it’ll be in shade for part of the day.”

This yard enhancement is depicted in Figure 14.



Figure 14: Yard Enhancement: Rock Circle. This photo presents one of the rock features put in at this school that was intended to be a space for play and learning.

And though the space has yet to really be harnessed as an outdoor classroom, it sounds as if the kids are taking full advantage of it:

I don't know how well it's used...as a classroom but the students actually play on it a lot at recess. They jump from rock to rock and they play tag games on it. So it's being well used that way (Mary, vice-principal)

Regardless of the type of enhancement, be it loose parts or natural features, all participants appeared to speak of their yards with a sense of elation. For example, when describing the program output of an enhanced yard space, Jason (principal) said,

We all of a sudden had this square footage that we didn't have before that was contained that was under big pine trees that was perfect. So that became our creative play area and it was sheltered from the kids on the soccer field kicking balls. It was perfect. It had a shed where we could put our loose parts. It was amazing...it was awesome!

From these program outputs came a large variety of outcomes.

4.4 Outcomes

Outcomes tend to “indicate a change between a pre- and post-activity condition, usually related to knowledge, skills, attitudes, values, behavior or status” (Gugiu & Rodríguez-Campos, 2007, p. 341). These outcomes are typically divided into three categories: initial, intermediate, and long-term (McLaughlin & Jordan, 2004). Authors tend to agree that initial, or short-term, outcomes occur within the first three years of a program, while intermediate outcomes occur between years four and six, and long-term outcomes between seven and ten years (Gugiu & Rodríguez-Campos, 2007; W.K. Kellogg Foundation, 2004). However, because KidActive’s NPLS program has only been around for three years, the program logic model was designed less around temporal parameters, and more to do with a progression of change in individuals. Thus, initial outcomes were—for the most part—outcomes considered to be changes in awareness, intermediate outcomes changes in behaviour, and long-term outcomes more oriented towards further reaching impacts of the program.

4.4.1 Initial Outcomes

The initial outcomes stemming from different outputs of the program that participants spoke about were grouped into four main categories: increase in knowledge and understanding, feelings of acknowledgement, physical changes, and shift in perceptions.

4.4.1.1 Increase in Knowledge and Understanding

The initial outcome of increased knowledge and understanding was apparent throughout the stories shared by participants. Most notably were stories of increases in understanding the value of outdoor play and learning and the resulting pedagogical self

reflection, as well as the increase in both teachers' and students' knowledge of ways to play and learn outside.

Increased Understanding of the Value of Outdoor Play and Learning

What became apparent when talking with participants was that the presentations, committees, and the relationships that formed throughout the facilitation of the program sparked a dialogue around the value of outdoor play and learning. As Heidi (NPLS facilitator) explained,

An interesting thing that I see being impactful about working with schools to develop these spaces is that they start to build relationship and connection within that school community around the importance of [outdoor play and learning]...I've watched shifts in how teachers are valuing it... it's like, "Oh this is really important. How am I going to do that?"

This shift in the school community towards valuing outdoor play and learning was evident when Donna (principal) spoke about how her school took up the NPLS program in terms of communication with parents:

So starting off by just saying, "We really value the outdoors. We really value the time that children spend outside. This is what research shows. So we're going to be sending your child out if it's raining lightly. So be prepared. We're going to be sending your child out even if it's cold; up to -22 we're going out." So parents became aware that that's what we expect, that's what's happening at Third Street Elementary School.

What was interesting was that there appeared to be very little pushback from the students' parents in the communities I visited. In fact, of the parents I spoke with it seemed as if the view was that it was common sense that their children should be afforded these kinds of opportunities. For example, Lilly (parent) explained,

I grew up in the country and many of these things were just occurring in my childhood and to sort of sit down and sort of talk about encouraging kids to play with natural loose parts, for me, was like, "What? Isn't this already happening?" So I learned a lot just because I was like, "How are we even having a conversation about this?"

Similarly, in talking about conversations she had with parents about how she had integrated outdoor play and learning into her teaching, Cheryl (teacher) said,

I had tons of positive feedback from that. And then when we had our progress report meetings, I asked each parent what they thought because I was just kind of curious, and one hundred percent, everyone was behind it, they all thought it was fantastic.

Though most participants appeared to praise the idea of increasing the amount of outdoor play and learning at school, there were those that believed that “sometimes it’s overrated” (Evelyn, teacher). She continued to explain, “So my view is that nothing works to the extreme; moderation should exist and is the best in every environment.” So although there was quite a bit of enthusiasm from the majority of those interviewed, it is important to note that other individuals within the school community who were not as keen tempered this enthusiasm.

Pedagogical Self-Reflection

From the shift in how outdoor play and learning is valued came another outcome—pedagogical self-reflection. As touched on in the previous quotation from Heidi (NPLS facilitator), when teachers begin to value outdoor play and learning, the question that arises is “How am I going to do that?” Cheryl (teacher) spoke about this self-reflexive outcome that resulted from being involved in the Active Play and Learning sessions that KidActive had facilitated and how it motivated her to change her teaching practices:

For me, it all started when they came in and did that hour and a half of play, and I saw as a teacher like, “How can seven and eight year olds not want to play for an hour and a half? And how can they be worn out, right?” I took that reflection piece and I wanted to change that.

She explained,

So then what happened was I started thinking, "How could I change my classroom so we could be outside more often?" Like so it wasn't just a one-off, once a month this special group comes in and we do some stuff outside for an hour and half, but more that it's an expectation every day.

She continued,

...as a teacher, it gave me that chance to reflect on my own practice, right? And then kind of push the edge a little bit, where I could think, "I don't have to do all my learning inside." And then take that initiative to go outside...and all the great growth that's come from that, I think that's pretty cool. So for a teacher, I think that's been a positive part of the program

It should be noted that Cheryl—and the way she has transformed her teaching approach into taking her class outside for an entire teaching block every single day—is a bit of an exception. However, it just goes to show what is possible when you get those individuals who really take the program and its objectives to heart.

Increase in Teachers' Knowledge of Ways to Engage Students in Outdoor Play and Learning

One outcome that has yet to really be achieved is an increase in teachers' knowledge of ways to engage their students in outdoor play and learning activities. This is interesting because this is a major goal of the Active Play and Learning sessions that KidActive facilitates in the Learning and Connecting stage of the program. There were some who felt that these sessions were useful in that they *"[got] us kick started. [Gave] us ideas to start thinking outside of the box a little bit"* (Cheryl, teacher). However, Cheryl also spoke about how some teachers see the Active Play and Learning sessions as just another thing to check off their list: *"...some people were just like, 'Ok an hour and half, boom, done...My KidActive day is done'"*. So instead of using these sessions as a learning opportunity there are those that simply see it as an extension of recess or their Gym class. Cheryl puts it aptly: *"I mean you have to buy into something to want to do it right? Not everybody's into that"*

Buy-in is certainly a factor in terms of the adoption of the teaching philosophies pertaining to outdoor play and learning, but another factor that emerged was sustaining interest in incorporating outdoor play and learning. As Penny (teacher) explained the initial Active Play and Learning sessions sparked interest in many teachers: *"...it really spurred people on and people used the space outside a lot after that."* But she continues,

...then it kind of fizzles out, right? It's the same with everything, you know, you go to a workshop on Math and you get all inspired and you do all this great stuff, but then six months later you're doing something else.

Then, speaking about the potential of having Heidi (NPLS facilitator) back to provide workshops for the teachers on inquiry-based play and learning, Penny said, *"I think having her come in will kind of revitalize everybody"*. She continued to explain that she would really benefit from having a few ideas of games or activities she could use in the yard with her students:

...I'm like, "Surely if I Google it, there will be something!" But there's nothing. Like I've got this circular set of rocks, there's got to be something more that you can do with it, right? But there's nothing out there...So it would be neat to have some quick ideas for people that then they could go out and be out there...

Interestingly, when I spoke with Mary, the vice-principal at Penny's school, it happened to be shortly after one of these "revitalizing" workshops. She had this to say *"...teachers are actually using those games when they take their kids out for their gym time or Daily Physical Activity time...So they've been incorporating those games and the activities that Heidi was informing them on."* So although the Active Play and Learning sessions are effective in terms of sparking an interest in teachers who are inclined to take their students outside, it would appear that continued support is needed to ensure that they acquire the necessary skills and knowledge to continue to do it on their own.

Increase in Students' Knowledge of Ways to Play Outside

Another goal of the Active Play and Learning sessions is to teach kids how to use their outdoor spaces in different ways. According to participants, it would seem that this outcome, of increasing students' knowledge of ways to play outside, has been achieved. For example, when explaining what she was hoping her students would get out of KidActive's sessions, Joyce (principal) said,

We're looking for students to try to sort of get back to nature and not always look for adults to provide them with their entertainment, so maybe learning some new games. And we learned some from Heidi and kids have been incorporating that kind of play into their recess time!

She continued to explain that students were beginning to recognize that,

...you can have fun on a big rock or jumping from rock to rock. Or you can have fun inside a tire just hanging out with your friends. It doesn't have to be big expensive, thousand-dollar equipment...It can just be simple stuff.

Furthermore, Cheryl (teacher) explained to me that even a year after KidActive had come to run the Active Play and Learning sessions at her school, "*Some of the games that they taught, [students] still play at recess...without having teachers initiate it, they're doing it themselves. So that's cool!*" Similarly, when telling me about some of the things she felt her students had gotten out of the program, Penny (teacher) explained, "*...the kids tend to, once they learn [the games], they go outside at recess and they're playing them and doing things like that. So yeah KidActive played a huge role in that.*" What Penny is alluding to here is that often times the activities that KidActive does with the student during the Active Play and Learning sessions leads to another outcome of students wanting to get outside.

Students Want to Go Outside

The games and activities that students learn from KidActive appear to motivate them to want to go outside, and so too do the diverse play opportunities that the yard

enhancements result in (discussed in Section 4.4.1.3: Physical Changes). Regardless of the antecedent, participants believed that the NPLS program was increasing the students' desire to get outside, be it at recess or at home. As Sophia (principal) explained when telling me about the school-wide surveys her school does with the students, *"...time and time again it's come back that the yard has been a huge motivator for the kids..."* At Debra's (parent) school, they have focused heavily on bringing in loose parts to help get kids to be more engaged in play in the yard because they were noticing a lot of inactivity, especially in the older kids:

...they have a lot of kids, especially when they get a little older, they just kind of stand around and chitchat and they don't actually do anything at recess. And some of them are like, "Oh I'm going to stay in the library."

She continues, *"But now that there's something to do out there, they're more inclined to go out."* This is important because as she explains,

I find as kids get older, they want to be out there even less, you know? When they're little they're happy to go out, when they're Kindergarten, Grade 1, 2, even 3. My oldest is in Grade 4 and this is the first year that when there's something to do out there, like when there's stuff, if she knows it's her day to go sledding or whatever, she's excited to go out. But if it's not she's, "Mmmm, I don't want to go stand out there in the freezing cold and do nothing."

Thus, providing the students with more diverse opportunities to play in the schoolyard appears to have increased their inclination towards going out and playing in it. But as Lilly (parent) mentioned, the inclination towards going outside was not limited to the schoolyard, it was also a factor when her children came home. When asked if she had noticed if her children's engagement in spaces developed by KidActive had influenced their play choices at home, Lilly responded,

Yes. So they will, like when we're at home, they will be interested in sort of building trails and building forts and going out...Once they're out, it just all starts pouring out much more. You know, there's sort of that reinforcement

idea, so the more often they're out, the more they're encouraged, the more they just have things to build on.

Thus, the NPLS program has been able to nurture a desire in the children to be outside more, be it at recess, or when they are at home.

4.4.1.2 Feelings of Acknowledgement

One short-term outcome that participants spoke about having developed out of the consultative nature of the program was that everyone felt acknowledged.

Students and Teachers Feel Acknowledged

After talking with participants, it was clear that students and teachers felt that their voices and opinions were heard. As Cheryl (teacher) explained.

...they were involved with the surveys and all that and on what they wanted in the playground to change. So it was nice because then they had student voices involved, right? I remember last year they wanted a lot of running space. They wanted to do parkour, like...Instead of just that flat space, they wanted those ups and downs, versus like a traditional play structure where we're like, "Don't run on the play structure!" So that was cool, and then it came about. So I think that's nice for them to realize that their voice was heard and that changes were made.

Similarly, Jane (principal) explained the importance of everyone being a part of the process: *"It's been essential for them to really see that we're valuing what the parents want, as well as the kids, because they really have wanted that sort of area to grow outside."* She continued to explain how this was important in terms of fostering a culture of engagement in the school community.

4.4.1.3 Physical Changes

As briefly mentioned previously, a key outcome that participants spoke about resulting from the yard enhancements is an increase in diverse play and learning opportunities.

Increase in Diverse Play Opportunities

Participants commended the program and the spaces it had help to enhance for providing students something to do. Many participants echoed Theresa and Katrina (teachers) who told me that *“the materials purchased have extended opportunities and play for the students at our school.”* For example, Jane (principal) said, *“There’s just more for them to interact with and for them to do.”* When describing her schoolyard and all the different dimensions it now had as a result of the NPLS program enhancements Cheryl (teacher) said,

...we have soccer fields, play structures, basketball nets, shaded areas, rocks, varying levels of structures to climb, trees to hang out under...and lots of space for the kids. The kids have lots of places to move, run and seek out their own spaces

These diverse opportunities became more evident during my observations:

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Though most began the play session in the gaga ball pit, over time...others would go and do other things. Some began a game of grounder on the jungle gym, a variation of tag where you run, climb, swing, jump, and hang all around the climber to avoid whoever is it...Others could be seen playing a tag game called “Man Tracker”, chasing each other all over the expansive yard trying to catch one another...[Other] students played kickball and soccer, which appeared to be structured by the teachers. Some who were free to roam spent time on the swings. A group of seven or eight older girls sat inside a large tractor tire that was turned on its side...One pair of girls could be seen walking around a few rocks and trees that formed a bit of a circle, the beginnings of an outdoor classroom...Despite not seeing much in terms of play involving some of the more natural elements the NPLS program might have had a hand in bringing in, I was still pleased to still see all the kids active and engaged in their yard!

Heidi summarized why these kinds of diverse environments are significant to the children quite well when she said,

I think they just provide more opportunities...There’s more for those kids that want to play in a different way...it just gives more opportunities for them to be physically active, to be social, to have to problem solve with other kids, to be creative in their play.

She continued to explain why these enhancements were important as far as increasing learning opportunities:

The more we actually bring in, the more opportunities there are for them to learn at recess time, and the more opportunities there are then for teachers to use this and value this as an outdoor learning space.

4.4.1.4 Shift in Perceptions

Another initial outcome that participants described as arising from the yard enhancements was a shift in perceptions amongst the school community relating to the possibility of yard changes and the degree to which the yard felt welcoming.

Shift in Perceptions Around the Possibility of Yard Changes

Worth mentioning here because of its impact on potential long-term outcomes is a shift in perceptions within the school community around the possibility of yard changes. Notably, when asked about changes in attitude in terms of natural play and learning spaces Nicole (teacher) said,

Like when I was talking about these raised garden beds...it wasn't like, "That's not going to work" you know? Whereas prior to that we had been like, "Someone's going to break it." And now we're like "Well, someone may, if someone does turn it over then we'll pick it back up."

Then when probed about what she felt had caused this shift in perceptions, she responded,

It's because we have accomplished something that we didn't think we would ever accomplish. There was a lot of negative talk around the how, but we now have a grass area at Second Street. This has lifted our morale and made us think that we are capable of more.

Thus, by shifting the perceptions of those in the school community who were initially doubtful of the ability of the NPLS program to influence lasting change, a more optimistic space has been created.

Yard Feels Welcoming

One other initial outcome that participants spoke about that relates to a perceptual shift was how the yard enhancements helped to make the playground feel more welcoming. Interestingly, all the participants who shared this opinion came from the same school where prior to the NPLS program, the playground was sand, gravel, and cement. For example, when describing the state of the schoolyard Maureen (parent) said, *“It’s not very welcoming. It looks kind of ghetto...In my opinion if the space is more inviting people will get out and use it more.”* Then, having enhanced the yard with grass and trees, she commented, *“Now we have planted trees and of course it will take years for those trees to actually be anything, but I mean, there is that element of like there’s trees so it looks more warm and inviting.”* Additionally, Nicole talked about the impact that having a more welcoming space could have:

...there were a couple of parents when they registered their kids that said, “You know, we really liked how your Kindergarten yard has some nice grass in it.” So...it’s about image...And having a space that looks desirable and fun, and you know looks environmentally friendly and looks welcoming and warm, is certainly more appealing to send your child to than a space that is concrete and gravel.

4.4.2 Intermediate Outcomes

As mentioned previously, for the purposes of this project intermediate outcomes were considered those changes that could be categorized as behavioural changes. These changes were perceived by participants as resulting from the initial outcomes described earlier. The intermediate outcomes were grouped into three categories: changes in practice, building connection, and changes in behaviour.

4.4.2.1 Changes in Practice

With the increase in awareness and understanding of the benefits of outdoor play and learning and the accompanying pedagogical self-reflection described earlier, the associated intermediate outcome, as described by participants, is understandably a change in teaching practices and a deepened understanding of the benefits of outdoor play and learning.

Change in Teaching Practices

There were primarily three areas of teaching practice that appeared to be impacted: teachers increasingly taking their students outside to learn and play, an increase in inquiry-based learning, and an increase in nature related activities.

Interestingly perceptions around an increase in students getting outside appeared to be somewhat mixed. Principals were quite quick to say that their students are outside more often. For example, Sophia (principal) explained, “*Definitely they’re using it for not just recess time but instructional time too...They’re out every other day. They’re using the yard*”. Similarly, Joyce (principal) told me, “*...a lot of teachers are accessing the space,*” she continues later on to say, “*...there’s always somebody out there...teachers are out. Teachers aren’t afraid to get out and enjoy the space with the kids.*” Likewise, when asked if her staff were taking advantage of the yard in regards to outdoor play and learning Jane (principal) responded, “*Yeah, they absolutely are using it.*” However, such strong affirmations were tempered slightly by conversations I had with teachers and even more so with parents.

The teachers I spoke with tended to speak about how the space had increased the amount fellow teachers were taking their students out. For example, Nicole (teacher) told me that she felt the yard was well used, explaining “*Because it’s nicer...we’re more inclined*

to use it, more inclined to take a Gym class outside, more inclined to have Play Day here at the school..." And as Cheryl (teacher) told me,

There's different teachers that are trying to do it in their own sort of ways. Like the two Grade 6 teachers decided they wanted to do more of that fitness and that fresh air aspect, so each day at 12:30...they stop and the kids go outside, and they do a daily mile...And they have obstacles, and they go on the monkey bars, and they have to go on little fitness ladders, and jumping over the rocks and all that kind of stuff...So they've been doing that every day and that's great...

However, she continues to explain, "But I don't see a lot of it outside...it's hit and miss."

This notion of uptake being hit and miss was further echoed when I spoke to parents. For example, speaking about the buy-in at the school, Lilly said, "There would be teachers that sometimes participated that were responsive to it and other ones that I never really saw". Similarly, Debra's take on teachers' inclination towards taking students outside to learn and play was "Some do. From what I understand some do. It just depends on the teacher." When asked if she felt teachers were taking advantage of the yard and taking their students outside, Maureen (parent) responded, "Not really, no. I think it's 50-50 at the school. I don't 100 percent know, but...I don't think they play outside as much as they could or should, from a parent perspective." Maureen's response stands in stark contrast to the response from Jane (principal) quoted previously who was asked essentially the same question. What is particularly interesting about this is that both are from the same school. So although there are some stakeholders who believe that the NPLS program has resulted in a surge of outdoor play and learning, there are others who feel otherwise, or at the very least believe there needs to be more of it.

Another element that became clear in terms of the increase in teachers taking their students outside to learn and play, was that it was predominately primary classes. As Mary

(vice-principal) explained, “...I’m seeing it a little more in Kindergarten and the early grades and a couple of teachers that just believe that that’s the right thing to do.” Nicole (teacher) explained, “The Kindergarten class is more inclined to go outside for centers; they didn’t do that before.” In terms of the older classes and when they are taken out into the yard, the consensus seemed to be that it was mostly for gym. As Nicole said, “I think they’re mostly using it for Gym. I haven’t seen them go out to like do an outdoor class. I haven’t seen that yet.”

Participants explained that much of the play and learning that takes place when the students are outside tended to be inquiry-based, letting the children’s curiosities lead the way. As Donna explained it,

...rather than going to the gym and having organized activities and always being in control, “We’re going to do this, this, this,” the teachers are taking the kids out and just following their lead. So it’s more of a play-based inquiry approach, rather than top-down, “This is what we’re doing.”

Those that engaged in this approach to teaching were quite pleased with the results. Cheryl (teacher) explained,

The kids have more say in where they want to take their learning and I’ve been able to teach and explore concepts with them in new ways. We’ve had more opportunities for hands on and real life experiences to connect our learning too, which makes it more powerful.

Speaking of the power of this type of learning, Cheryl spoke about how what started off as a stream study where she was going to get her class to collect some water from a local stream and see what they could find snowballed into something much more:

I didn’t even know what we were doing, I just thought, “Oh it will be fun. We’ve got a cool microscope. We’ll look to see if we can see something in the water.” They were amazed at all the garbage floating in the water. So we collected all the garbage...Then when we brought it back we did a garbage audit through the Great Canadian Shoreline Cleanup...So it turned into a whole data management activity where we were sorting and graphing. The

biggest thing that came up was all the Polar Pops from Mac's, which has just been built about a year ago now. So the kids were like, "Before Mac's there was no garbage!" and all this kind of stuff, right? So that was interesting.

So then we did a whole bunch of, "Well who cares? It's in this little stream. Like what's the impact? What's the big deal? We'll clean it up, but is that going to impact anything?" And then we did a little bit of research. Kids found out about the Great Ocean Patch in the Pacific and so they were curious. Then we did a couple Google Hangouts with Ripley's Aquarium talking about plastics in the water. And then we did another Google Hangout with...Canadian National Geographic. They were travelling and studying all the micro-plastics in the water. So...we got a chance to ask them about all the micro-plastics in the water, like, "Do the Polar Pops in our little tiny stream here in Renfrew, does it make a differences where you are and where we are?" So they gave us some really cool websites. One was Litterati, and you can go on and you can see where people have collected garbage...so you can actually make a change because they are finding out that their garbage is being found around the world...

Then the kids wrote on the blog that they wanted to do something more about the Millennium Trail. So we went out and surveyed the community, like "Do you go on the Millennium Trail? What do you do with your garbage?" A girl made an "enviro-belt" that she brought to school. So when she's on a walk, she's going to wear it with a garbage bag attached. And then another girl actually just brought one in today, she has like a little holder. Anyways, so then they wrote letters to, or we tried to contact the Town Hall. And they made that (she points to a large bird-shaped craft made of plastic Polar Pop cups) because they found out about all the birds eating the plastics from the water and the turtles and all that, and how it was like killing them or coming into our food system.

So then we did the big presentation to the school about, "Did you know about all the stuff about plastics". So then they have all these suggestions for the Town Hall on the Millennium Trail...they put in for a grant through Learning for a Sustainable Future so that we could get a sign built for the Millennium Trail to kind of tell people what happens to plastics.

Another example of how being outside can provide great learning opportunities occurred during one of my observations:

June 28, 2017 - Fifth Street Elementary School

... We heard thunder so began to make our way back to the yard to see if the class was heading inside. On our way, my guide turned over a rock and found a small dark salamander... He carried it back to show the rest of the class as they gathered by the door to go in. The rain was beginning to fall now, so we headed inside bringing with us the salamander in a plastic tub lined with leaves, grass, and sticks the children had collected. The teacher gathered the class in front of the projector and began searching salamanders on her computer. She brought up a website that had a list of all the different salamanders that could be found in Ontario. She took the class through pictures, descriptions, and interactive maps to try to determine which kind it was. It was really neat to see how they were able to bring something found out in the yard and learn from it using technology. After learning about the different salamanders it could be, they released him back in the forest. The teacher then read to the class a book called *The Salamander Room*, a story about a boy who finds a salamander out in the woods and wants to bring it home. It was terrific to see her turn the finding of the salamander into a learning experience in the classroom.

And though there can be great benefit to taking this type of approach, it can often be uncomfortable for teachers to do so. Participants, like Jason (principal) discussed how adopting outdoor play and learning pedagogy was not universal:

Some of my teachers have been a bit more open to the idea of how much learning we can do outside...others will find a reason not to go outside, "There are bugs. The kids won't be focused. I need to get this done..."...So it's really down to the teachers' ideologies and values regarding outdoor play or just exposure to nature.

Some of the shifts in teacher practices also revolved around providing more nature related activities for students. These activities primarily had to do with planting and continuing to care for some of the natural elements like the gardens and trees that had been put in as a result of the NPLS program. For example, Joyce (principal) told me about how the cement planters they had installed (see Figure 15) became the responsibility of each classroom, explaining that they were in charge of "*planting their planter and weeding and watering it*" which turned out to be a good learning experience because they learned "*how to plant things, how to care for different plants...*" by comparing "*the different planters and the amount of care they're getting*".



Figure 15: Yard Enhancement: Cement Planters. This photo illustrates the planters that were put in this schoolyard as a part of their NPLS program yard enhancements.

Relatedly, Sophia (principal) described how a teacher at her school began a gardening club: *“They planted, they watered the garden, they talked about it, they charted the growth, and all of those pieces...The kids do all the work in beautifying the entire front.”* And though this was not a significant portion of what teachers tended to do in their outdoor space, it is worth noting because of the perceived impact these types of experiences were thought to have on the students’ stewardship of, and connection with, the natural environment.

Deepened Understanding of the Benefits of Outdoor Play and Learning

With teachers beginning to take advantage of the newly developed schoolyards, it appeared to further reinforce an understanding of the benefits of outdoor play and learning amongst participants. For example, Joyce (principal) said, *“I think teachers love it; they’ve seen the benefits,”* these benefits being the overall wellbeing of the students. As she explained, *“I really do think it has a direct correlation on discipline and kids coming in happy and ready to learn”*. Similarly, Lilly (parent) talked about what she had witnessed in her

children: *"I notice it helps them feel calmer. It helps them sort of switch modes and become more interactive with their environment."* Heidi (NPLS facilitator) spoke of a similar shift when telling me about what she had noticed after engaging students in outdoor play and learning saying, *"Like for the Grade 7s and 8s, it just shifted their energy. Like even the teacher, everyone. It was really like, 'This is great! Why don't we do this more often? How can we do this?'"* Speaking further to this moment of realization, Cheryl (teacher) explained,

I think in terms of teaching, I think a lot of people are nervous about how much time to take away from their classroom. And I think if they actually went into it, they would realize they were adding more learning time because the kids are getting real experiences that they can really connect to.

Even the students are beginning to recognize the importance of these types of play and learning experiences. Before I met with Cheryl she had decided to ask her class what they thought about learning in the outdoors; she shared their responses with me:

One girl was saying that "You do everything, like measuring and having fun learning". Another boy said, "You're getting lots of exercise, not always sitting in a room". Another boy said "It's better with the fresh air". Another girl said "It's not just one piece of paper. You're getting to explore it, feel it, see it". Another boy, I love this kid, he's very interesting. Inside the class he cannot focus. He cannot sustain any kind of focus. He cannot stay on task, yet outside, he's like a hundred percent different kid...And he said, "You're not locked in a battle with paper".

Jane (principal) also spoke about the benefits of outdoor learning within the context of providing an inclusive learning environment.

...often with a lot of high-needs kids with autism, the sensory need to just have something in their hand and playing with...the outdoor classroom lends itself easier to that than say a traditional classroom. Whereas in a normal classroom, it might be odd if a kid stands up and is just jumping or moving around, because some of them need to do that. Whereas outside that's more almost socially accepted I guess. So it's easier for other kids to not be distracted by that. So it certainly lends itself to a good environment for that. But in terms of just kids as a whole, like kids who aren't diagnosed with say autism or behaviour and that kind of stuff, just the engagement of having

something different keeps their interest level piqued, you know? It's experiential, and it's hands-on, like they're out there using that.

Relatedly, Penny (teacher) described how taking her teaching outside provided a more engaging learning environment, as space for students to excel in ways that they might not indoors:

So I just like how engaged they are. And some kids who aren't engaged at all will go out there and build a structure that completely surprises me. And I have other kids who are very academic who go out there and disappoint sometimes, you know?

4.4.2.2 Building Connection

The notion of building connection to the environment and yard was apparent in participants' stories when they spoke of increases in environmental stewardship and a sense of ownership and attachment to the yard.

Increase in Students' Environmental Stewardship

As just mentioned an intermediate outcome that participants felt resulted from the nature-based activities that the NPLS program had spurred helped to foster an environmental stewardship within the students. Continuing from Cheryl's (teacher) story about her class and where inquiry-based play and learning had led them, Cheryl described one boy who felt the need to take his environmental stewardship further. As she explained, this boy,

...set up a stand at the end of his driveway to tell everyone about the Great Ocean Patch like when they walk past. He was like, "I'm going to make a survey, and I'm going to ask them, 'Do you know about it?' And if they don't I'm just going to tell them about it."

She continued, *“So I think what they want to do, if you went around and asked them, they would want to spread the word. That’s the stage they’re at. They want to make a difference.”*

This desire to make a difference was evident during my observations with Cheryl’s class:

June 27, 2017 - Seventh Street Elementary School

Once inside the teacher asked for the students to share their thoughts with me on their “OEA” (outdoor education activities) time—the block of the day the class would spend outside involved in inquiry based learning...Others responded with a bit more insight saying things like, “I like it because we got to protect nature,”...When asked by the teacher how the year would have been if they didn’t go outside for their OEA time every day, they responded with a resounding, “It would be terrible!” One girl said she would be upset because she never would have thought to make her “enviro-belt”. Several spoke about not being able to go raise their concerns at City Council to help reduce the garbage on a local trail. They designed a sign that the town is planning to put up to remind users not to litter. There was consensus that without doing OEA that these kinds of things wouldn’t have happened.

Penny felt that this stewardship does not happen organically, i.e., just from being exposed to more natural elements. Instead she believes that it is something that needs to be taught: *“I went out with my class and said, “You can’t swing from these [trees]. They’re new”...But I think they now are getting a good respect for it...I think it’s something that we need to teach pretty explicitly...”*

She continued to explain, when you get other students braking branches off of trees,

...other kids would speak up...I mean you can hear them saying it, having that conversation where they try to teach each other...You hear that all the time, kids telling, “Don’t pull on that, it’s new. It’s just a baby” or whatever. You can tell they’ve had that conversation with their teacher, which is nice that the kids are becoming they’re own stewards, not just having to hear a teacher do it.

Feel a Sense of Ownership and Attachment to the Yard

Another intermediate outcome many participants spoke about was the sense of ownership over, and attachment to, the schoolyard. For example, when asked if she had noticed any signs of attachment to the space in her children, Maureen (parent) responded,

Yeah, my kids totally are...especially because we brought some of the loose parts there. My kids will always say, like you know, "We played with the stuff that we brought Dad! Remember cutting all that wood?" And I mean we've taken our kids out to cut the wood and like load it in the trailer, drop it of so...They are a part of the process.

She continues to explain, *"I think having trees, grass, and flowers in the yard that the students have helped put there, helps them feel attached to the yard and that there is something greater than them to take care of and help grow."* Participants were almost unanimous in their belief that having students involved throughout each of the NPLS program stages was crucial in forming this attachment. Joyce (principal) exemplified this when she said,

I think if students are involved in the planning of something, if they have input, if they're communicating their opinions, and people are listening to them, then I think that creates a space for them that they're really proud of and they're respectful of.

With that said, there was one participant who felt there was very little connection between her students and their schoolyard, if anything it is a *"connection that they take for granted"* (Evelyn, teacher). She explained,

This is my take of kids in Deep River. They're very used to the environment. It's part of what they live and breathe...this is what they're used to. So it's almost like they don't appreciate it because it's part of what they are...So it's not really a big deal to a lot of kids here...So on that note, they don't actually appreciate—I don't think—things like loose parts as much as somebody, or a child, who lives in a city where the yard is quite small and they don't have access to natural-feeling things like logs and so on because you can walk two seconds and you can touch thousands of loose parts naturally here, right? So it doesn't have the same impact in terms of that kind of work. Do they like it? Sure! But do they recognize that they could have something very different if they lived elsewhere? Probably not.

This is singularly different than what others had shared with me. Returning to Joyce (principal), she explained that her students are extremely invested in the space, so much so

that *“If things get wrecked, or something gets destroyed, or someone writes on our book tree or whatever, they’re devastated by that”*.

4.4.2.3 Changes in Behaviour

Participants reported changes in student behaviour as an important outcome of the NPLS program, pointing to increases in enthusiasm and engagement in the yard, diverse play, increases in positive social dynamics, and improved behaviour as notable changes.

Increased Enthusiasm and Engagement in the Yard

As previously discussed, the NPLS program has led to the outcome of more diverse play opportunities, and according to the participants these opportunities have increased the overall enthusiasm and engagement in the yard. Joyce sums it up well in her response to what she felt were some of the outcomes that have resulted from the NPLS program:

Busy kids. Active kids. Excited kids. Engaged kids. Kids who aren’t just hanging around looking for something else to get into, right? Like you’d be impressed if you came here at recess time to see how much fun kids are having together, just hanging out and enjoying their spaces.

Joyce attributed this to them never being bored because of the affordances the schoolyard provides saying, *“I don’t know that I ever hear of anybody saying that they’re bored at recess...Yeah nobody’s bored, nobody complains about being bored...It’s really awesome! Yeah, I hadn’t really thought of that before.”*

This level of engagement is important because, as Debra (parent) explained, *“There’s children that they weren’t able to engage before, and now they’re out there, and they’re playing and they’re actually doing things at recess.”* Jason (principal) told me about a group of Grade 8 students that *“would have just sat in a corner talking before,”* who now are engaged during recess that illustrates this. He said,

...my Grade 8s recently, instead of anything at recess, they've been building an ice shack to have so they can ice fish at recess. So if we go out into the corner of the yard, there is a clearing where the snow's been dug away and there's tires that the snow under the tire has been dug even deeper, there's branches for rods, there's wood benches around. And this is our Grade 8s...they sit there all recess pretending to ice fish and they're 13!

His exclamation highlights the unique ability of the NPLS program to increase students' willingness to play creatively in the yard.

Diverse Play

Participants described three types of play that increased as a result of the diverse opportunities the transformed playgrounds provided; one of which was active play. Theresa and Katrina explained that the items provided through the NPLS program "*are a hit with the students and it has given the students another opportunity to be more active during the school day!*" When describing the types of play she had seen fostered in the yard, Maureen said, "*They do a lot of bridge building and use their gross motor skills, like to step on and off stuff*". Jane added, "*They're using stumps to make little areas and obstacle courses, things like that. So there's lots of it; lots of physical activity.*"

Participants also talked about the ability of the spaces to encourage creative play. For example, when asked what children were getting out of the spaces she had helped to develop, Lilly responded,

Their imagination, their ability to sort of create things in ways that you don't expect. I mean it's obviously based in sort of them being able to create whatever they want, and just having these things available...So it really sparks new ideas and creativity...yeah, enriching their creativity, which is really fun to see."

This creative play was evident during my observations:

June 26, 2017 - Second Street Elementary School

...The boy and girl he decided to join were walking around the yard with the wheelbarrow pretending to sell ice cream. They stopped and asked me if I wanted one, listing off a variety of flavours that they offered. I chose banana, they asked me for money, with the one boy holding out his hand saying, “That’ll be a dollar”. I patted the palm of his hand with mine; he smiled then reached into the wheelbarrow and passed me one of the tree cookies then trundled off after another customer. Prior to this, the tree cookies had been cake that other students were baking over a pretend fire (they had gathered some of the larger logs into a circle and were sitting around a clump of smaller wood chunks [see Figure 16]). Their creativity appeared to know no bound... Later the fire pit would become a stove for cooking tomato chicken stew. As I watched a girl sitting by herself stirring a plastic bucket full of water and sand muttering to herself about the stew, a boy came by and asked if he could help. She said sure and he started adding wood chips to the stew. Soon another girl who felt it needed a bit of grass joined them. It was neat to see how kids were drawn to each other’s creativity. They seemed to feed off it. I was happy to see that no one ever said “No” when asked by their peers if they could join in the make belief.



Figure 16: Loose Parts Fire Pit. This photo depicts a fire pit that the children had created using some of the loose parts they had in their yard.

One other type of play that is alluded to in the passage, and that many participants reported seeing increases in was inclusive play. As Cheryl discussed,

It's fantastic because you see the kids running and using the whole space...you'll see Grade 2s and Grade 1s playing with the Grade 6s and they're running all over the schoolyard, so they're making use of the space. The bigger kids are being a little bit of role models for the younger kids, right? Because they know they're little and they can't keep up so they'll say, "Oh you can be on my team", like a Grade 6 and a Grade 1, "Let's go tag people." So that's kind of neat for the social dynamics of the school.

Similarly, Jason explained

There's a greater element of cooperation, less competition. Because it's not like when they're playing tag or they're playing a sport and it's about competition...it's not about me being better than you, it's about, "What can we do together? What can we build? What can we make out of these random things and what can we do with it?"

Several participants spoke about how the elements that were added defied age limits, which created an opportunity for kids of different ages to play together. Additionally, participants spoke about how it brought together children who would typically not associate with one another. As Penny explained,

I think sometimes too, the other thing that I notice is that they will play with different groups of people too. So there might be somebody who, in the classroom setting, they wouldn't choose to sit beside or choose to be in a group with, but all of a sudden something becomes a common interest outside that doesn't necessarily show up in the classroom. So they're engaging with students that they might never engage with or want to be around. So that's kind of interesting to watch because it helps pull those other people out of their shells. And when it comes back into the classroom, then it's somebody who now has become a peer or somebody that they want to do more with. So it helps to make the whole class become more cohesive.

Thus, the environments appear to foster a kind of play that brings children together.

Increase in Positive Social Dynamics

The diverse play opportunities and types of play that the enhanced schoolyards provide appear to also impact the social dynamics at the schools. Participants spoke about how the spaces and the play they induced resulted in the outcome of an increase in positive

social dynamics. For example, when asked to provide examples of the benefits she felt kids were getting, Joyce (principal) said to me,

They're hanging out at the tire park. It's been a smashing success. You know, you'll have kids inside [the tires] just chatting, you'll have kids sitting on top of that big one out there, just hanging out. So that social piece too, which I think is really important, which I think we've lost a little bit in this world of technology...And maybe they're not being active at that moment, but they're just enjoying each other. They're just enjoying the space. And that's, that's what it's all about right?

These sentiments were echoed by Nicole (teacher) when she told me how she felt the NPLS program had impacted the behaviour of her students:

Yeah that's a hard one..Am I like, "Oh they're all perfect now"? No. But...I think at recess time, when they're out there and they're running, there's just more of a sense of, even like community? Do you know what I mean? Like it's a nice place to be...It's more a feeling. Can I say that?...It's more like a pleasant feeling. That's how I would describe it.

Improved Behaviour

One final intermediate outcome that participants felt resulted from the NPLS program was improved behaviour. Jane (principal) explained it in terms of self-regulation, saying that these environments provide children a space for,

...being able to interact with each other outside and figure out those self-regulatory skills on their own, being able to manage conflict, being able to [figure out] the basic things in terms of inclusion and sharing and cooperative play. All that kind of stuff has really changed because of this.

She continued, "*We've seen a decrease in conflict as a whole on the yard, like in terms of just fighting...those kinds of things. So that's been good...*" Similarly, Jason (principal) responded, when asked about the kinds of outcomes he had seen, "*I will say we did see less behaviour on the yard, less arguments, less conflicts*". Participants attributed this decrease to the students being too preoccupied with the different play opportunities. For example, when asked about her perceptions of how teachers felt about the yard space, Sophia (principal)

responded “*I think they also feel as though, you know, kids are more engaged in the yard, so there’s fewer issues for them to deal with at recess time.*” She continues, pointing to a reduction in yard reports as evidence of this decline:

So if there’s an incident in the yard, you know, pushing, or shoving, or an argument, then we track it...And one thing I’ve noticed is yard reports were reduced when students had access to active play components in the yard...because kids are engaged

4.4.3 Long-Term Outcomes

As mentioned previously, for the purposes of this project long-term outcomes were considered to be those outcomes more oriented towards further reaching impacts of the NPLS program. And though it might be early to really be seeing such outcomes come to fruition, participants’ stories certainly indicate that they believe they are beginning to happen in regards to two key impacts: culture shift and improved wellbeing.

4.4.3.1 Culture Shift

In discussing the impacts of the NPLS program with participants, it was evident that the program was helping to induce a culture shift towards the endorsement and advocacy of outdoor play and learning, which participants linked to a shift in perception of the value of risky play, the development of an outdoor play and learning policy, and a sustained NPLS committee.

Culture Shift Towards Endorsement and Advocacy of Outdoor Play and Learning

After talking with participants, it was clear that there is a perception that a culture shift towards the endorsement and advocacy of outdoor play and learning is happening. Participants speak of it as being a gradual, sometimes subtle shift. This is likely due to the relative infancy of the program but they do speak of a shift. For example, Donna (principal) explained,

...trying to move forward with some of these things we were trying to do was like really a paradigm shift. It was trying to move from, you know, this safe kind of put your kids in a bubble, don't let them slide, don't let them do this, don't let them do this. Don't let them get hurt. Don't let them get hurt. You're going to get sued. Into let the kids play. Let the kids play. So there has absolutely 100 percent been a culture shift in the four years that I've been here. That's huge...Staff, parents, students, huge shift, which is wonderful. You don't really notice it because it's so gradual...But when you start looking back and reflecting you think, "Wow, we've come a long way!"

When asked if she had any examples that track the shift in culture that participants were reporting, Heidi (NPLS facilitator) said,

There's confidence and support for teachers like Cheryl at Seventh Street to take her students out daily to teach...At Sixth Street, Kindergarten teachers are taking their classes outside daily to forest space that they have. There are the Third Street teachers as well, walking with Ks to a wooded space every Friday for Forest Fridays. There's also been a few schools buying snowshoes and walking in the woods

This shift, though seemingly gradual and sometimes hard to notice, appears to be occurring at all levels within the school community. Nicole (teacher) spoke about how even at the school board people are starting to get it:

...I think we're definitely talking about it more. And I think the School Board is more aware of it as well because KidActive has been so vocal I guess in our area and getting in our schools...So I think they realize we want more of these natural play spaces.

Lilly (parent) spoke about how her children's principal gets it, saying, "Yeah, Jason is really encouraging which is wonderful! He gets it. He understands. Joyce (principal) talked about how her staff have gotten on board:

They're all in...teachers love it; they've seen the benefits. And they're using the yard, so you know they're in, right. You know they're buying in if they're using the yard. So it's been good. It's a great staff though. I think it's an exceptional staff. I feel very lucky because they're keen. They're keen and they're supportive and they just want the best for the kids. They really do.

And finally, Cheryl (teacher) spoke about the overwhelming support she has been seeing from parents in the community, telling me,

So [the parents] were all excited that [the children] were getting chances to get outside and get fresh air. I think as parents, I think we know that kids need to be outside playing more and that we know they need more of that free time, that fresh air...So I think they're appreciative of the fact that they're getting more outside time.

Thus, the majority of participants that I spoke with were happy to see this, albeit gradual, shift occurring, acknowledging that things have changed since they were in school, and that we as a society need to try to get back to a consciousness that supports outdoor play and learning. They also acknowledged that they are not there yet, that more work needs to be done to continue to convince others the importance of it.

Shift in Perception of Value in Risky Play

Very much connected to this shift in culture around endorsing outdoor play and learning is a shift in the perception of the value of risky play. By advocating for the nature-based, loose parts filled environments that the NPLS program had helped to develop, stakeholders were in effect endorsing a certain level of risky play. Though it was clear that the allowance of risky play in schools was not yet universally accepted in participating schools, it did appear that some participants were in full support of it. For example, when asked if her school had a positive perception of risky play, Penny (teacher) responded,

I think so, maybe not everybody, maybe not the people who the liability falls on. But I think as far as the teachers go, most of us. You know I have a little guy who brings in sticks every day. He just finds the perfect stick every day. And so some teachers are like, "He's got a bunch of sticks in his locker" [said disapprovingly], and I'm like, "Well if they're in his locker and he's not stabbing them at people and stuff--" And so you know, there's lots like that. There's always a couple of people who are more concerned about it.

This concern was evident in the conversation I had with Evelyn (teacher), when she said, “...if we could trust all children to go outside with pointy sticks and not poke each others’ eyes out, then they could play with pointy sticks,” but “There are some children who will go out with pointy sticks with the goal of poking each others’ eyes out, and as a result, everybody now can’t use the stick...” While some still had reservations about allowing students to play with sticks at school, Penny (teacher) did not. This difference in opinion was also seen in a story Donna (principal) shared:

...on yard duty this week one of the staff members said to me, “Oh that hill is really icy today. I don’t think they should be on it.” And so I’m standing there, I’m watching them, and I’m like “No, they’re doing ok. As long as they’re sliding down on their bottom one at a time, yeah they’re ok.” But still that old bubble wrap, safety, protective, “Don’t let them. Don’t let them. Don’t let them.” Like there’s still a little bit of that sometimes...

Another good example, was from a story Heidi (NPLS facilitator) shared of an experience she had when working with a teacher and group of Kindergarten students who had climbed up onto the top of a large rock:

...about four kids climbed up to the top of this rock, which was maybe...six feet...So the teacher immediately responded by noticing that these kids were there and she wanted them to get down. And I kind of stopped, and was like, “Can we just wait a second here?” I got her in time, but I just kind of brought up this idea of, “What is it that you think is going to happen?” And she was afraid they were going to fall off. And I just started to question her as to why, and then I kind of moved her from this place of, “Well instead of us being the ones to tell, why don’t we ask them what they’re plan is and what they’re up to?”...But when the teacher holds power and moves from their place of fear and risk, we don’t allow for opportunities of growth and experience and children being able to be with their own internal system of recognizing that.

When asked what the teacher got from this experience Heidi responded,

I’m not sure I can answer this but only speculate that I hope it has inspired her to think differently about her perception of risk and how she supports students and children in assessing risk...My sense in general is that working with teachers to understand and embody...requires a valuing from the person/teacher/mentor.

One participant I spoke with who seemed to have shifted his valuing of risky play in this way was Jason (principal). As he explained,

So my stance evolved very quickly to a 'Why aren't we letting them play?'...And Heidi and I had an amazing discussion about that and...I felt that those were chances I could take as a school administrator...why can't they have logs and sticks and pipes and stuff to build with and play?"

He told me about how at his school they had shifted from a “No you can't do this because we said so” to “...more of a, 'Let's give them the sticks and see what they're going to do” kind of mindset. He continued,

So there was a lot of change in thinking, but it was also bringing the staff on board because some of my teachers only knew this environment where you were worried about being sued, right? And you were worried about your liability as the supervisor in that circumstance. Some had come from different schools where it was, “No! You're not allowed to play on the snow banks” or, “You're not allowed to do this because it's dangerous, because it's dangerous, because it's dangerous.” Whereas, where is the true danger?...even if a kid falls and scrapes himself or breaks a bone or something, is that the end of the world like we kind of made it out to be?...what learning are we preventing in our kids by making it so bland?

The point Jason was trying to make was evident during one of my observations where I joined a Kindergarten class for their forest time:

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...Scattering into the forest, the children were off. I was happy to see some kids run right for a couple trees that had branches that made it perfect for climbing. It wasn't long before the branches were draped with kids six or seven feet off the ground. One girl climbed to a point in the tree where she was too uncomfortable to climb back down. She had to be lifted out, but when asked what she would do next time she climbed that tree, she responded, "Not climb so high". This kind of learning was apparent throughout the forest, with kids running along fallen logs to then slip off, brush themselves off then hop back on, this time running a little slower...Another boy who saw a girl who appeared to have climbed to a point on a pile of logs where she was uncomfortable getting down, clambered up to where she was and showed her how he would get down. "See put your bum down like this" he said to her. She watched as he made his way down then gave it a try. She was able to make her way down with a big smile then ran off to explore another part of the forest...Over the course of our time in the forest there were several tears. As kids would slip, tumble, and fall over roots, stumps, and logs. What impressed me was how resilient they were. Though they might have cried for a couple minutes and required a bit of attention from the adults out with them, before I knew it, they'd be back running through the undergrowth with big smiles on their faces once again. I think this is what they need. They need to be given the freedom to scrape a knee or bump an elbow. I think these experiences will help them to become more resilient little beings.

Jason could be considered one of the earlier adopters of this kind of play philosophy as far as school administrators go, but as he points out, a societal shift is slowly occurring where parents are also beginning to see the benefits of risky play:

...I think the current trend in parenting, the pendulum is swinging back to a bit more of a let's allow for some risky play, lets allow for some chances and risk, and away from bubble wrapping and preventing...So I do think the cultural shift will happen. The trend in parenting, whatever the current thought in parenting is, is reflected in the school...So I think that larger cultural shift will happen and more and more schools will be able to embrace this.

Development of Outdoor Play and Learning Policy

The NPLS program does not appear to have produced any formal policy document pertaining to outdoor play and learning, though participants tended to agree that one would be helpful in terms of the overall success of the program. As Donna (principal)

explained when talking about a document Heidi (NPLS facilitator) mentioned she was working on that would outline the dos and don'ts of developing naturalized playgrounds,

I think you know, with Heidi working on that document, that will help get some standards in place so we have something we can go to if we have a question. Whereas we were just working off of nothing, right now.

What the program has done however, is inspire action, which in a broader understanding of the word policy could be considered as such. In other words, the support of developing outdoor play and learning spaces in schoolyards and the types of play that comes with it inspired through the NPLS program is indicative of a developing outdoor play and learning policy. For example, Heidi (NPLS facilitator) mentioned how *“At Sixth Street they're letting kids explore puddles and they're sending notes home and having conversations with parents to send in extra clothes in case kids get wet, telling them the importance of this type of play.”* Though not a formal policy, it is a policy in the sense that it is a conscious choice made by the school to allow kids to go in puddles if they choose. These types of informal policies were mentioned throughout the interviews, whether it was Fourth Street and other schools allowing their students to play with sticks at recess, or the principal at First Street asking her staff to increase the amount of time they spend outside with students, or the Kindergarten team at Sixth street who allow their students to climb trees when out on their daily forest visits. In this latter instance, Theresa and Katrina (teachers) explained that, *“when climbing trees, we have agreed on a height that won't give us too many stressful thoughts”*. So rather than prohibiting tree climbing, they have a “policy” that allows children to play in a way that stimulates and challenges them. These informal policies are what make up what I perceive to be a growing outdoor play and learning policy amongst the participating schools.

Sustained NPLS Committee

One long-term outcome that is necessary in terms of the longevity of the program in schools is having a sustained NPLS committee. The intention behind the program as Heidi (NPLS facilitator) explained is “*to act as a springboard for more*”. That is, Heidi is there to support the schools in the early stages of the program, but the intent is that schools will then take ownership over it and carry it forward on their own. From talking with participants it sounds as if each school is a bit different in this regard. For example, Cheryl (teacher) explained how her school had gotten to a point where,

...eventually we sat down as a staff and were like, “Well, we can do all this. We don't need to have Heidi here. Let's just go ahead”...So we just kind of took it on ourselves versus just waiting for the KidActive program to sort of mentor us through it.

And then there are others who are questioning how to sustain this kind of commitment to the program. As Jane (principal) said,

...it's just about being able to maintain almost the manpower...how do we sustain that? Because there's always something that's coming up, and we're always getting hit by the Ministry...So how do we keep building something that's as important as this when there's so much provincial pressure to put resources and allocations somewhere else? So that's always a challenge, you know, to figure out how to keep those partnerships going and to keep it sustainable really.

This is something that Heidi (NPLS facilitator) is also grappling with in terms of determining how to get schools to a point where their program, and the culture around it, is sustained:

What I'm trying to figure out is how long is that, and how do you take a group to a point where their culture is shifted enough, that they value this enough that they're going to take it and own it on their own and it's not going to get lost...What's that going to look like in their school. And I think it's going to look different in every single school. My feeling about it is to really help them to see that this is something that...it's ok if it ebbs and flows a bit, but if it's a really important core value, then don't let it go. And how

are they going to weave this in as being just as important as Math and Literacy?

4.4.3.2 Improved Overall Wellbeing

Several of the longer-term impacts of the NPLS program that participants spoke of represented different aspects of overall wellbeing. These aspects included a deep comfort and connection with nature, a sense of place, a sense of belonging, and a sustained positive social environment, all of which were seen as contributors to the improved wellbeing of the school community.

Deep Comfort and Connection with Nature

In conversations with KidActive, it was often iterated that a deeper connection to the natural environment was not an outcome that they set out to achieve through the NPLS program, but instead was a byproduct of what they do through the program. But because this connection to the natural environment was important in terms of the focus of this research, I asked all participants what their perceptions were in terms of the ability of the program to foster nature connections. The responses I received varied.

Several participants spoke about developing nature connection as something they needed to work on. Sophia (principal), for example, explained, *“I think that’s an area to be honest that we still need to focus on, like it’s an area for growth...I think that’s an area where we still need some more help and development in”*. Relatedly, Nicole (teacher) said, *“I don’t know that we’re there yet,”* explaining that once they put in the raised garden beds that a deeper connection might be noticed. Maureen (parent) echoed Nicole when she said, *“I think when we get the gardens, I think that will bring a lot more. You know, seeing something grow, how it grows, and then learning about how other things grow...I think having the gardens will get them more connected”*.

Despite it possibly being a bit early to see this long-term outcome at participating schools, there were some who felt they were starting to see a difference. Lilly (parent) talked to me about how she felt the program had resulted in her children becoming more comfortable in and around nature:

I think it helps kids sort of relate on that level and to be exposed to it more and more, where they become more comfortable. It becomes something that's really familiar to them. So I do think that's really important. And I see that change in my kids.

She continues,

So they just start switching the way they interact. So they do sort of have a better understanding of having a bit more empathy when it comes to what might happen to their environment if they take things out of it. You know, like there's a consequence to taking all the leaves off a plant. So like they understand what that effect will have on that plant, and so I do see them interacting and having empathy and understanding their impact on their environment. It's starting.

Interestingly, this is precisely the kind of connection that Heidi (NPLS facilitator) felt the NPLS program could foster:

I think it has great potential to do that...The more that there's opportunities and affordances for children to build contact and connection and relationships with the natural world, the more they will inherently feel that connection to it, and want to look after it and protect it, which then builds the environmental ethic. So it's exposure, it's time, it's relationships through how they're mentored and who's with them out there. So if that's happening in school, where there's a value in it and there's support in being comfortable and being curious and starting to understand it, then I think there's potential for that to happen.

The approach Cheryl (teacher) has taken towards her teaching this past year was reflective of the contact, connection, mentorship, and environmental ethic that Heidi described. Again, Cheryl is the teacher who began taking her students outside for one third of the day every day to do outdoor, inquiry-based learning in the schoolyard as well as in nearby natural areas (e.g., trails and streams etc.). Cheryl's response when asked what she

has seen in terms of nature connection in her students helps to illustrate the impact of this type of learning:

I think also when you're outside in nature—and that's what I was kind of hoping for—day in and day out, you start to notice all the changes right? So you have a bit more of a connection to it instead of just kind of tromping through it.

*The other day, I saw little light bulbs go off in the kids because we were on the Millennium Trail and we were looking for muskrat pop-ups...Instead, they found all these tracks... they get so carried away with all of our tracking identification that we totally forgot to look for the muskrat pop-ups. But anyways we came back and I'm reading this book, *My Side of the Mountain*, and in it this kid's living in the mountains all on his own...he has a couple of different animals that he's kind of become attached to. So anyways, this human entered his camp, so he hung out there for a couple of days then he left. So I'm reading this to the kids and then after this character leaves...the animals start popping back up.*

So I said to them, "Why would the animals be coming, why do you think they didn't show up when the human was around?" and they were like, "Well they were frightened. They didn't know who he was" all this stuff. And I said, "Well we saw like a million tracks when we were on the Millennium Trail, yet we saw no animals." And one of the kids was like, "Well that's because we were all loud and we were running around" And I'm like, "Exactly!" So I said, "That's just our impact walking down the trail. Look at all these buildings and the town" And I said, "We live here, but there's others. You know, there's the trees and-" The kids are like, "Oh man! We've done so much!" So it was kind of cool because they really do see that connection. And I think I could talk about it in the classroom and that's fine, but I think when you're outdoors there, touching it, seeing it, doing it, being in it, I think you respect it a little bit more.

This coincides with what Heidi (NPLS facilitator) described as the key to developing a connection with nature that she feels the program has a lot of potential to produce:

I think nature connection comes through relating and through relationship. I think at the least, I mean there's way more that can potentially be done here, but I think for children to be able to experience and be comfortable being in a natural space and being able to touch and feel and see it as a living entity, it starts to build that relationship and they start to become comfortable. And then over time that can lead to nature connection

Furthermore, when asked if she felt her students' connection with the natural environment had changed as a result of these kinds of experiences, Cheryl responded,

Definitely... they're connecting more than when you're in the four walls of the classroom I think...I think it's just opening up their world a little bit more, even if it's just the world of Renfrew. Well the stream study is a perfect example, we realized our stream, after we came back and Googled it on our maps, goes to the Bonnechere, the Bonnechere goes to the Ottawa, the Ottawa filters into the St. Lawrence...So they're seeing their part in the big part of the world, so it's kind of cool.

It would appear, based on Cheryl's experience, that when children are given the opportunity to form that connection with the natural world, and are encouraged to think about their impact, they begin to understand their place in that world. Cheryl was under the impression that living in a rural community, and having easy access to natural areas was conducive to her students forming and becoming aware of their connections to nature. However, other participants felt that this ease of access hindered such a connection. As Evelyn (teacher) explained,

I think one only really becomes aware of your connection with something when it's missing. So only when it's gone or changed do you really understand what it is that you're connected to. And until that kind of thing happens, I don't believe the kids are aware of their connection to the natural environment. It is what it is.

She continued to explain how she believed that having outdoor, nature-based play and learning opportunities is "...not a big deal, not a big deal for many of the children," but added,

We have children who come from urban areas. We have children who are refugee families. I mean you should speak to some of them—the children who are from Syria—they think they've died and gone to heaven...Their connection with it is absolute. They love it. But they've seen a whole other set of circumstances which none of us can really image, right?

So perhaps it was not so much the ease of access to natural environments, but more the perspective of those engaging with them that impacted how participants perceived they would connect with the natural environment.

Jason (principal) highlighted this point when I asked him about the potential of nature connection in his school community stemming from the NPLS program:

I'm a bit discouraged in this particular area because while this community loves to be outdoors, they do not respect nature. Kids will snap branches off trees and think nothing of it...they're not synonymous in valuing time outdoors and respecting nature. Those things are not synonymous because I mean, you're going to drive home and you're going to hear a lot of those "brapping" machines [snowmobiles] going down the highway, and that's not-- You know you're outdoors, but you're driving a two-stroke with the oil mixed with the gas and it's pumping out a bunch of CO2, right?

He continued to explain how this consumptive sort of relationship with nature, this notion that "nature is to be consumed and it's how we sustain life" is "a very ingrained part of this community". And because of this, he does not know how to begin to shift these perceptions of the uses, connections, and relationships with nature.

Sense of Place

Sense of place is another long-term outcome that was alluded to during the interviews. Sense of place in the yard was most often spoken about in the context of strong feelings of ownership and pride in regards to the schoolyards, discussed previously (Section 4.4.2.2: Building Connection). When asked if she felt a sense of place had been fostered amongst participating schools, Heidi (NPLS facilitator) responded, "*Yeah, I do. And you can see that through the care right? The care and the ownership and them wanting to look after it.*" In talking with other participants, it became clear that the NPLS program and the yard improvements it had induced had really helped to enhance the overall sense of

place at the schools. For example, when asked about place attachments resulting from the NPLS program, Joyce (principal) had this to say,

Well people love Seventh Street Elementary School. Like we really do love our school. So I think this has just enhanced things...we're really proud of our school...and were all very proud of the things we've done. So I don't know if there's been a huge change, just enhanced maybe is the best word for it.

For Joyce, it seemed Seventh Street already had a sense of place, which could be gleaned from her words of admiration and affection when describing the school, but what the NPLS program had done, was further enhance this attachment. She points to the yard enhancements, among other factors, as having contributed to making it “*a good place to be*”. When trying to describe how she has seen this sense of place manifest in her students she pointed to attendance as an indicator:

The only other indicator that I would say is attendance, which you know, for those students that we have...it's a sign of disengagement when they're absent...So when we see attendance increasing for students that are in families that are struggling...when we see that maybe other years they haven't had great attendance...then you can tell school's a better place to be because they're coming...So it's some of those pieces I think maybe there isn't a direct link, but I certainly think it all adds to it for sure.

The sense of place that these enhanced playgrounds can create for a school was evident when Jason spoke to me about his concern about being able to reproduce it now that the school had switched locations. He said,

See this year we don't have that feeling. Being in the new building...We don't have that feeling. Before it was their space...You couldn't have designed it better...it was this cool new thing where we could build stuff. We had sticks and pipes and tires and we could do stuff. And I don't know whether we'll be able to replicate that here.

Despite bringing the loose parts that they had had at the old school, Jason explained how the new space “*hasn't grabbed hold like the other space did*”.

Sense of Belonging

Another long-term outcome that the NPLS program appears to have produced is a sense of belonging in those students who might not have had it previously. For example, Sophia (principal) spoke to me about an offshoot of the NPLS program, a garden club (previously mentioned) and how it has helped to engage particular students:

...it's getting kids engaged...I have students that maybe are not athletic...there's not a lot of clubs they're interested in. So I noticed those are the kids that are coming to garden club. It's the kids that are hard to reach sometimes. And they're the ones that are becoming involved. So from my perspective, when I see those kids that have a difficult time fitting into your standard sports teams...or whatever...they don't even want to show up for that because that may not be their forte. Then they're coming to Garden Club and they're coming with their garden gloves, and they're like "K, I'm ready to go!"...those are kids that they feel a part of the school in some way, that they've contributed. So it's huge...where you see those kids that are reluctant to be involved in school life and you're reaching them in some way.

Similarly, Jason (principal) told me about how the NPLS program was targeting students that would previously have had nothing to do at recess:

What we found was, there was a group of kids who previously would have just been sitting in a group together, because they weren't interested in the traditional sports, they weren't interesting in climbing on the climber, they were interested in playing creatively. And they had this home now. So that was amazing to see.

He continues,

...it's a place where they belong because you would see these games of soccer going on...and there would always be one or two kids who just had no interest in being there but were there because it was the only thing. And now they had another place and they didn't have to feel like they were choosing to do nothing instead of this, they had a choice.

Sustained Positive Social Environment

Although participants could not yet speak to a sustained positive social environment because of the relative infancy of the program, the discussion earlier pertaining to an

increase in positive social dynamics and improved behaviour amongst participating schools supports the likelihood of achieving this long-term outcome.

Improved Wellbeing of School Community

In providing the NPLS program and achieving the discussed outcomes, participants anticipate that the overall health and wellbeing of individuals within participating school communities will improve. A few participants shared particular examples of these improvements already occurring. For example, Nicole (teacher) told me how, *“It’s been a morale boost for our school.”* Specifically, for her,

...it’s even a psychological boost...I do morning duty on that yard every day, from 9:15 to 9:30 a.m. Prior to the addition of the grass, I regularly left that duty feeling “blah”. I actually found the yard depressing. Now, when I come in from my morning duty, I’m in a much better mood. The fact that my sandaled feet are rubbing against the soft grass is much more appealing than the rocks from the gravel hurting my toes.

Another example is when Maureen told me,

I just know, like from my kids’ experience, if they’re outside playing, they’re good tired. Like they’re tired, they sleep well, and then they’re ready to go again...So I think being outside more, or having the natural space to be able to play provides them with that good mental health stuff.

Participants anticipate that such outcomes will improve overall wellbeing, but the general view was that it was still too early and that it will likely take time for the schools to see a noticeable change. For example, when asked about the potential of these longer-term impacts, Joyce (principal) said, *“I don’t think we’ve been at it long enough...we’re not there yet. We’re too early...But I can get back to you. I can let you know about that.”* And though it might be too early to really see a noticeable change in overall wellbeing, given the numerous outcomes described, I do not think it is unfounded for participants to believe

that it is coming. As Heidi (NPLS facilitator) explained when talking about the significance of the spaces and the types of play they afford,

I feel like nature gives us so much in different ways. So I feel like starting to build these spaces really supports the development of the whole child...I don't really know how much impact we may be seeing yet...I feel like it takes time.

Thus, there certainly seems to be this perception amongst the participants that what they have done through the program is benefiting and will continue to benefit the students and teachers as time goes on.

4.5 Factors Impacting Success

Though not depicted in the NPLS program logic model presented at the outset of this chapter, it is important to recognize the existence of factors that can impact the success of the program, both positively and negatively. Thus, this section describes the main facilitators and barriers that participants felt impacted the success of the NPLS program.

4.5.1 Facilitators

In order for the NPLS program to have the success that participants reported, several factors were deemed important in facilitating this success. While participants discussed a variety of different factors that supported the success of the program, several key facilitators were commonly discussed and therefore warrant consideration alongside the program logic model presented. These key facilitators include having a committed group, leadership, and buy-in from the school community.

One of the facilitators that many participants spoke about was having a group of people within the school community really committed to the program. As Jane (principal) explained, it “...was just a matter of having a couple key people and Council, and staff, and parents who really were on board and wanted this to happen.” Similarly, when telling me

about the factors that had impacted the success of the program, Joyce (principal) said, *“you have to have a dedicated school group because Heidi can’t do it all”* She continued, having *“good people that share a common vision is really all it takes, and then you’re off. You can create quite amazing things!”*

Within these committed groups, there was often at least one, if not more, champion. Jane (principal) described these individuals as *“the leaders...the ones that were pushing and pushing...that want to go out and get it started.”* Parents, Maureen and Debra, both explained how their role in facilitating the NPLS program was to push. As Maureen explained, once they had developed a plan, *“...it was just pushing people, like, ‘Ok, well we have it, let’s do it’ like, ‘We need to stop talking about it and just get it done!’”* When schools had these individuals who were willing to *“really drive the process,”* Heidi (NPLS facilitator) explained, *“things moved faster.”* Sophia (principal) provided some insight into this when she explained *“...having those champions...that can kind of direct which way the yard evolves...that can kind of spearhead [the project]”* was helpful, *“because as a principal, you can’t be micro-managing all those little pieces; you need people to take initiative and run with it.”* Thus, the overall perception amongst participants appeared to be that when there were those who were *“holding this energetic commitment to the process”* (Heidi, NPLS facilitator) within the school communities, the NPLS program was more successful.

Buy-in from the school community was also reported as being crucial to the success of the program. In other words, the program would not have been as successful had the communities’ values not aligned with those of the NPLS program. As Jason (principal) explained,

...the values of the people involved need to jive with the values of the program for it to succeed. So you know, the values of the community, the values of the staff members of the school, those are such key parts in the success of the program.

This buy-in from the school community led to tangible support (i.e., funding and resources) that helped to drive the program forward. Jane (principal) highlighted the importance of this support when she said,

It's been a real community piece. Like really making it community, versus just the school, has been critical. So everything from, you know, we have some staff members whose spouses own a construction company. So they were a huge part in helping support us. We've had some of them who have worked with lumberyards and been part of actually bringing the pieces into the school and facilitating that...and of course our local bank that we got the grant from...the more community people we've had involved, the bigger that the program has actually been. And I think has been the number one key to its success because everybody's helping and we're all being a part of it.

Thus, participants felt as though having a committed group, strong leadership, and buy-in from the school community ultimately facilitated the success of the NPLS program.

4.5.2 Barriers

Without the facilitators just mentioned, obvious issues arise in terms of the successful implementation of the program. More specifically, not having facilitators such as community buy-in, tangible support, a committed team, and strong leadership were also reported barriers to success. However, participants discussed unique barriers that warrant further discussion, including current policy and regulation around naturalized playgrounds, concerns about safety and liability, and curriculum constraints.

Participants expressed difficulties when trying to implement their vision of what they hoped the schoolyard would become. These difficulties often stemmed from a lack of policy and regulation with respect to loose parts and other natural play features. As Nicole (teacher) explained,

...since the use of loose parts and natural elements is more new to school playground design, there are not a lot of regulations directing how they can and should be implemented. So, you get conflicting messages. You're not told not to put these things in, but you're told there may be a problem with them in the future.... they don't know. They had a book for like all the trees and everything and all the plants I could plant, but when it came to loose parts, they just, they didn't have a manual that said "yes you can have it", "no you can't" And I actually talked to the lady, she came over from the Plant to talk...and she's like "it's just so new for us, we don't know what's acceptable and what's not".

This lack of regulation and policy in regards to the implementation of natural play features in the yard was often attributed to the novelty of naturalized playgrounds, which as Donna (principal) discussed, requires a shift in perspective:

We hit a lot of snags just because it's new...Because there's such an emphasis in the education world on safety and playground standards and CSA approval that trying to move forward with some of these things we were trying to do was like really a paradigm shift. It was trying to move from...this safe kind of put your kids in a bubble...don't let them do this...don't let them get hurt...you're going to get sued; into let the kids play.

In fact, many participants echoed this culture of fear around safety and liability being a barrier for the successful implementation of the NPLS program. Penny (teacher) described this fear at the regulatory level:

But it does become a battle with the Plant Department, and you know, "Is it going to be safe? Is it going to be stable?" They want the companies that come in and install so that the liability is taken off the Board, which is fair enough.

Nicole (teacher) reiterated this barrier when she explained:

So there have been some challenges with respect to...the School Board in how to-- We had to talk to them because we were doing this. It's a grant project so we had to talk to Plant and things had to be approved. So they were very unsure about even the loose parts. It's new to them and they are always concerned about safety, they're concerned about lawsuits and such, right? "Are we being negligent in what we're allowing out there?" So this was a real concern.

The concerns expressed by regulatory bodies can often inform the concerns of teachers, and those interacting directly with the children. This was made evident when Nicole (teacher) expressed:

There is less enthusiasm from safety officials as they are concerned with lawsuits, and I get that, but their lack of enthusiasm is often discouraging and can make people fearful of change.

Alternatively, some participants felt as though the culture of fear and emphasis on safety among parents is what informs strict safety regulations, perpetuating this barrier in terms of building successful naturalized playgrounds.

I think that we actually really need to start looking at...and tackling this issue of parents and liability and the amount of fear and resistance that it creates within the school setting. It's like how much-- We're placing more value on fear of the parents than on what we inherently know is good for children (Heidi, NPLS facilitator).

A final barrier that participants felt greatly impacted the ability of teachers to take their students outside to learn was the curriculum itself. Many teachers expressed that they felt constrained by the curriculum, and that they could not meet curriculum objectives while engaging their students in outdoor play and learning. Evelyn (teacher) described this sentiment when she said,

We are extremely constrained by what the curriculum allows us to do. So we can't just sort of say, "Ok today we're just going to go for a walk", you know? The walk has to have...some curriculum-based purpose...So that's where the challenge often is in using the yard outside of recess, to make sure that we're using it in a fashion that's allowing us to meet some of the expectations for the curriculum.

Similarly, Penny (teacher) discussed that the willingness of staff to engage in outdoor play and learning is not the problem. The issue stems from educators not knowing how to effectively bring their classrooms outside.

Yeah I think there's a lot of people that would love to be doing more with the outside environment and are finding the same limitations. I feel like there's very few that are very resistant to it, but I think everybody just has a hard time figuring out how to do it.

Sofia (principal) explained that educators who are experiencing feelings of being unqualified in the field of outdoor play and learning may require further education and training to mitigate this barrier:

Like there are different resources out there for us to tap into, but I think it's the expertise. I think teachers are maybe not as experienced in that area. And so often times they'll go with what they know, right? So I think it's maybe further training or workshops in that area might help.

Hence, barriers including lack of policy and regulation around naturalized playgrounds, concerns around safety and liability, and curriculum constraints were among the most common barriers experienced by participants of the NPLS program.

CHAPTER FIVE: DISCUSSION

To begin this chapter, I want to recognize the complexity of the logic model presented in Chapter Four. Although I believe the extent of the results were needed in order to be able to effectively tease out the logic model in a way that accurately tells the NPLS program's story, the breadth of these findings certainly warrants further interpretation in relation to the guiding objectives that oriented this study. As a reminder, these objectives were (1) to provide a program evaluation for KidActive's NPLS program, and (2) to interpret the extent to which nature-based play in this context serves as a mechanism for moral development through place-based nature connection. To accomplish this, this chapter will focus on addressing the study's four research questions:

1. What place meanings and perceived outcomes do NPLS stakeholders associate with the NPLS program and the nature-based play it induces?
2. What are the perceived barriers to, and facilitators of, the place meanings and outcomes produced in these naturalized play spaces?
3. How, and to what extent, does the NPLS program facilitate nature connection within the schoolyard and other outdoor places?
4. How, and to what extent, does the NPLS program facilitate the development of an environmental ethic?

5.1 The NPLS Program: Place Meanings and Outcomes

5.1.1 Place Meanings

Drawing on Wynveen (2009) once again, who defines place meanings as the "beliefs and/or cognitions ascribed to a setting that reflect the value and significance of the setting to the individual" (p. 9), it becomes clear that participants had developed strong place

meanings towards the schoolyards that they had a hand in enhancing. Initially it was anticipated that the nature-based play fostered in the naturalized playgrounds would produce feelings of attachment to the space, engendering place meanings and an overall sense of place in the schoolyard. As David Sobel, a leading author in place-based education contends, place meanings and place attachments accrue from children's engagement in natural areas (Sobel, 2001). Participants in this study highlighted place meanings that revolved primarily around the yards becoming places to play, places to support healthy childhood development, places for learning, places to (re)connect with nature, and places for everyone.

A Place to Play

With the increasing erosion of opportunities for children to play outside (Waller, Sandseter, Wyver, Ärlemalm-Hagsér, & Maynard, 2010), naturalized playgrounds have been heralded in the literature as an innovative solution to this growing problem (White, 2004). Dymont (2005a) explains that naturalized playgrounds have a unique ability to foster play because of the diversity of affordances they provide in comparison to conventional playgrounds. In her study of the impacts of naturalized playgrounds in the Toronto District School Board, Dymont (2005a) found that play was limited in playgrounds that consisted of asphalt and turf, whereas naturalized playgrounds yielded a diverse range of play opportunities. These findings coincide with the meanings participants of this research attributed to their newly enhanced schoolyards when they explained that having these enhanced spaces means the children have a place to play, a place that is engaging and fun. This is important because as Ihmeideh and Al-Qaryouti (2016) point out, children need places to engage in outdoor play. They continue to explain that outdoor play environments

are "generally considered a fundamental and necessary component of early childhood settings" (p. 81) due to their benefits in terms of childhood development. However, in order to reap these benefits, children must first be attracted to the space and be enticed to play within it. In other words, if children do not find the space appealing, it is likely that they will not play, and if they do not play, then they will not accrue the benefits that are said to come from outdoor play in these environments. Fortunately, it would seem that the playgrounds enhanced through the NPLS program alleviate this problem.

A Place to Support Healthy Childhood Development

Foundational to the movement towards implementing naturalized playgrounds is the notion that these spaces help to promote healthy childhood development (A. Bell & Dymont, 2006; Heft, 1988; Raffan, 2000; Raith, 2015; Andrea Faber; Taylor & Kuo, 2006). With a growing body of literature supporting this view, it is not at all surprising that stories of participants spoke to a meaning of place that coincided with this notion of naturalized playgrounds as formative spaces. Although it might be somewhat intuitive that such place meanings appeared to form as a result of lived experiences in the enhanced playgrounds, it is worth noting that other elements of the NPLS program may have also contributed to this meaning, specifically in the Engagement and Learning and Connecting stages of the program.

I believe that the knowledge and awareness building towards an understanding of the benefits of naturalized playgrounds that resulted from the Engagement and Learning and Connecting activities of the NPLS program helped to foster this meaning of place in its participants. Place-based theorists may contend that place meanings are a result of experiences in particular spaces and places (Stedman, 2002), to which I would agree. I

would also add that the socially constructed nature of how we understand the world around us lends to the opinion that other socially and culturally constituted factors can impact the meanings we associate with particular places (McIntyre, Moore, & Yuan, 2008). Thus, I believe that the culture around the endorsement and advocacy of outdoor play and learning that KidActive is trying to engender in its participants may have also contributed to the perception that the playgrounds are places for healthy childhood development.

A Place for Learning

Some participants perceived the newly enhanced schoolyards as places for learning. For instance, the stories about Cheryl (teacher) who took her students outside every day reinforce the notion of the schoolyard as a place for learning. Yet this perception did not pervade the entire school community. Others found it very difficult to utilize the outdoors as a space for learning despite the literature contending that naturalized playgrounds provide dynamic environments ripe for it (Dyment, 2005a; Malone & Tranter, 2003b). Much of this was attributed to teachers feeling unable to meet curriculum expectations when taking their classes outside, which coincides with (Dyment, 2005a) who found that many teachers "lacked the confidence and skills to teach outdoors" (p. 43). So although some were able to take advantage of the schoolyards as an extension of their classrooms, more work appears to be needed in order for everyone to see the schoolyards as a place for learning.

A Place to (Re)connect with Nature

As discussed previously, much of the relevant literature fails to recognize the potential for naturalized playgrounds to promote (re)connection with nature. However, results from this study point towards a perception of naturalized schoolyards as being

grounds for such connection. Though, as discussed in Chapter Four, this perception was not unanimous amongst participants, there certainly were those such as Joyce (principal) and Heidi (NPLS facilitator) who described the enhanced schoolyards as places to (re)connect with the natural world. By incorporating natural features such as rocks, trees, stumps, logs, and sticks into the schoolyards, it was believed and hoped that connections with nature would form; not a far leap considering all the evidence that supports the ability of encounters with natural settings to induce nature connection (Beery & Wolf-Watz, 2014).

However, even Heidi (NPLS facilitator), who recognized the potential of these spaces to foster such connections, questioned the extent to which the kind of nature incorporated into the schoolyards could actually yield nature connectedness outcomes. This echoes Kellert (2012) who questions the ability of a "contrived, artificial nature" (p. 74) to promote nature connection. Though I would not consider the "nature" incorporated into the playgrounds through the NPLS program to be artificial, it is certainly a manufactured one. Regardless, this line of questioning brings rise to the consideration of the socially constructed nature of nature and whether or not the benefits of encounters with nature are contingent upon how the nature one encounters conforms to what society believes to be/constructs as nature (Cronon, 1996). That is, what do we consider to be nature? Are the natural features of the naturalized playgrounds enough to be considered as such? If so, is it "nature" enough to bring about nature connectedness and other related outcomes? These philosophical ponderings take us a bit beyond the scope of addressing the research question pertaining to place meanings, but certainly something for future research to take up.

A Place for Everyone

Lastly, there was a perception amongst participants that the yard enhancements incorporated through the NPLS program had helped to develop a place for everyone. For example, Jason (principal) shared a story that explained that the elements they had included in the yard gave way to features that appealed to all different play appetites and abilities. No longer were students made to feel like their only options in the yard were to either play in ways that did not suit them, or not play at all. These findings are consistent with Bell and Dymont (2006) who found that naturalized playgrounds provided a diverse range of play opportunities that "appeal[ed] to a wider variety of student interests" (p, 25). Thus, the playgrounds developed through the NPLS program appear to be achieving similar place meanings as those discussed in the literature.

5.1.2 Outcomes

Chapter Four was exhaustive in discussing the outcomes associated with the NPLS program, so rather than regurgitating those outcomes here, this section will discuss the key outcomes of the program as perceived by participants in relation to children, educators, and the community.

Child-Oriented Outcomes

Authors have conducted extensive reviews and meta-analyses of the literature, and there appears to be growing consensus amongst researchers in regards to the assertion that outcomes, including physical, cognitive, and social health, in children are supported through nature-based play in naturalized playgrounds (A. Bell & Dymont, 2006; Heft, 1988; Raffan, 2000; Raith, 2015; Andrea Faber; Taylor & Kuo, 2006). The results of this research further support the literature in that participant stories highlighted the realization of these

outcomes. For example, Bell and Dymont (2006) found that naturalized playgrounds enhanced physical activity by "increasing the range of enjoyable, non-competitive, open-ended forms of play at school" (p. 51). Participant stories echoed these findings as they spoke about the increase in engagement in their yards that resulted from the playground enhancements, explaining that they no longer have students just standing around at recess. They are out playing and getting exercise.

The ability of the naturalized schoolyards to encourage physical activity also appeared to have implications on cognitive development and learning. For example, Sophia (principal) alluded to the connection between the enhanced yard, among other things, to having improved standardized test scores. Though she was hesitant to claim direct cause and effect, she did believe the engagement in the yard had had an impact. These perceptions are supported in the literature by the likes of Dymont and Bell (2008) who found that the increase in active play induced in green school grounds promoted cognitive development and learning. They draw on a comprehensive meta-analysis of the effects of exercise on cognitive functioning that found regular physical activity supports better learning (Etnier et al., 1997) to undergird their claim.

From a social/emotional health standpoint, the naturalized playgrounds developed through the NPLS program were believed to be influential. Participant stories depicted the schoolyards as positive social environments thanks to the yard enhancements. Whether it was Jane (principal) explaining to me that the playground provided children a place for figuring out their self-regulatory skills, or the many others who spoke to a decline in negative behaviours in the schoolyard that made room for more inclusive and cooperative play, participants shared the perception that the diversity of play affordances provided to

the children through naturalized playgrounds fostered more positive social dynamics. These findings are consistent with other research that has found the stimulating and diverse design of naturalized playgrounds helps to reduce issues of boredom by providing children countless play choices (Evans, 2001; Moore & Wong, 1997; Raffan, 2000; Titman, 1994). Similarly, Dymont and Bell (2008) found that the diversity of play choices appeared to "foster the type of positive social dynamics that support more socially inclusive behaviour" (p. 176). Thus, the spaces created through the NPLS program appear to have been providing the necessary enhancements to achieve similar outcomes as those reported in the literature.

Educator-Oriented Outcomes

The majority of the academic literature that looks at naturalized playgrounds is primarily concerned with outcomes associated with children. With the exception of Dymont (2005a) and Raffan (2000)—who discuss the benefits for teachers as they pertain to child-oriented outcomes such as increased enthusiasm and engagement towards learning—very little looks at the implications of these spaces, and the programs that help to develop them for educators (i.e., teachers and principals). One potential reason for this perceived lapse in the literature could be because much of the impetus behind developing naturalized playgrounds revolves around supporting the wellbeing of children (A. Bell & Dymont, 2006; Dymont, 2005a; Moore, 2014; Raffan, 2000), and therefore research looks mainly at impacts of the playgrounds in this regard. What is perhaps different about KidActive's NPLS program is that it not only seeks to provide these enhanced spaces for the benefit of children, but it also aims to increase the capacity of educators to make use of these spaces in order to compliment their teaching practices. Thus, the subsequent

paragraphs will discuss the educator-oriented outcomes—increase in knowledge and understanding and the ensuing change in teaching practices—as they relate to the ability of the NPLS program to achieve these objectives.

Participant stories explained how Engagement and Learning and Connecting activities of the program were designed to help them become aware of the benefits of outdoor play and learning. Interestingly, for most of them these benefits were perceived to be commonsense; they all seemed to understand the value of outdoor play and learning for children. This coincides with studies that looked at the perceptions of teachers in relation to outdoor play and learning environments and found that teachers are aware of, and understand, the importance of outdoor play and learning (Ihmeideh & Al-qaryouti, 2016; McClintic & Petty, 2015). Yet, other research has found that outdoor play and learning at school is an opportunity missed by many educators (Mainella et al., 2011; Maynard & Waters, 2007).

This finding was also apparent in participant stories despite there being a perception that the Active Play and Learning components of the NPLS program had helped to increase teachers' knowledge of ways to engage students these types of experiences. With that said, there were some like, Cheryl, Nicole, and Penny (teachers), who made changes to their teaching practices as a result of the NPLS program. These individuals had begun to see many of the benefits that Dyment (2005a) and Raffan (2000) explain teachers can accrue by taking their teaching outside, including increased engagement and a general enthusiasm for learning. Thus, by considering the impacts of the program more broadly to include teacher-oriented outcomes, this study helps to provide some insight into what school ground naturalization programs can mean for teachers as well.

Community-Oriented Outcomes

The main community-oriented outcome that the NPLS program appears to be working to achieve is a shift in culture towards the endorsement and advocacy of outdoor play and learning. I consider this to be a community-oriented outcome because ideally this shift will occur amongst all members of the school community (i.e., students, teachers, principals, parents, and school board administrators). It became quite evident after listening to participants' stories that the NPLS program is indeed promoting such a shift. Stories of parents volunteering their time to sit on school councils to ensure their children had access to outdoor play and learning opportunities, teachers doing what they can to take the curriculum outdoors, and principals using their power as administrators to hold the necessary space to encourage, support, and nurture the changes brought about through the NPLS program signify that a shift is beginning to happen. This will please the likes of Janet Dymont, who in her report, *The Power and Potential of School Ground Greening*, articulated a need to shift culture if naturalized playgrounds are to become commonplace. However, this finding was tempered with stories of frustrated parents who felt that not enough teachers were taking advantage of the outdoors as a learning space. Relatedly, there were stories of teachers who felt discouraged because they did not feel equipped to do so. There were also stories of principals who felt constrained by school board regulations and parent perceptions in terms of what they could allow in the schoolyard. These stories speak to the complexity of this culture shift.

As mentioned, Dymont (2005a) calls for a "shift in the culture of schooling" (p. 47), arguing that the institution of education does not place enough value on outdoor play and learning, which impedes the progress of naturalized playgrounds. While participant stories

certainly share this perception, I would add that it is also about encouraging a shift within the culture of parenting, and arguably broader society because, as Jason (principal) and Heidi (NPLS facilitator) made apparent, parents hold a lot of power too in terms of what they feel is safe and acceptable for their children's play and learning. This dynamic, was thought to inhibit the development of naturalized playgrounds. Such perceptions are apparent in the literature as well, with Tovey (2007) explaining that teachers often feel anxiety over fear of accountability and litigation in today's risk-averse societies. Consequently, in conjunction with the culture shift previously discussed, the development of an outdoor play and learning policy within the education system and a shift in the perception of the value of risky play appeared to be needed in order to have naturalized playgrounds become more commonly integrated into schoolyards.

Thus, the findings of the current study help to reinforce the findings of previous studies as they relate to outcomes of naturalized playgrounds. This is important from the perspective of KidActive, because it provides them with the necessary evidence to trust that their NPLS program is both, achieving comparable outcomes to similar playground greening initiatives, and meeting their objectives of building healthier play and learning environments for students to enhance active outdoor play and learning.

5.2 The NPLS Program: Facilitators and Barriers

It is clear that participants perceived that the NPLS program is achieving desirable outcomes. From a program evaluation stand point it is important to reflect on what has both helped and hindered this success (McDavid & Hawthorn, 2006). In her study that investigated the potential of naturalized playgrounds within the Toronto District School Board, Dymont (2005b) reports what she describes as challenges and opportunities to

greening school grounds. Her report outlines several factors that were found to impact the success of school ground greening initiatives:

- availability of funding
- teacher involvement
- principal involvement
- student involvement
- parent involvement
- community involvement
- school board involvement
- availability of training opportunities
- availability of curriculum materials
- access to expertise
- access to physical materials
- other demands on time
- difficulty in maintenance
- vandalism
- key organizer(s) moving on (p. 39)

Unsurprisingly, many, if not all, of these factors were also described in the stories of my participants. However instead of describing how each of Dymment's (2005b) findings correspond with those of this project, the following section will unpack some of the key enabling and inhibiting factors as it relates to four key areas—human resources, policy and regulation, safety concerns, and professional development—some of which overlap with Dymment's (2005b) work, while others do not.

5.2.1 Human Resources

As discussed, participant stories highlighted the benefit of having members within the school community willing to buy-in to the NPLS process in order to support the implementation of the program. The results spoke to the need for a committed group of individuals dedicated to seeing the project through, a leader or champion to drive the project forward, and community buy-in resulting in tangible support through a variety of contributions. Though Dymment (2005a) appears to be the only other study that has

documented similar findings, it is an important result to reiterate especially when working in a program evaluation context. It is perhaps intuitive that without the dedicated involvement from all stakeholders within the school community (i.e., students, teachers, parents, principals, and school board administrations); the NPLS program would not have seen the success that it has. Such findings help to reinforce the importance of having someone like Heidi (NPLS facilitator) in schools fostering relationships, facilitating the process, and rallying these stakeholders towards the common purpose of developing natural play and learning spaces.

5.2.2 Policy and Regulation

Results from this study indicate that inconsistent policy and regulation in regards to outdoor play and learning environments made it very difficult for those trying to develop these kinds of spaces. Participants like Nicole (teacher) were very discouraged by the restrictive nature of current schoolyard policy and regulations that have prevented and/or limited what she was able to do in her schoolyard. It is not my intention, however, to point blame at the school boards. After all, they are merely adhering to the recommendations set out by their insurance companies, which suggest that all playgrounds meet the Canadian Standards Association's (CSA) Children's Play Spaces and Equipment Standards (OSBIE, 2010). However, as Herrington, Brunelle, and Brussoni (2017) warn, these standards "are not intended to address play value or child development" (p. 145). In fact, they are not even intended to be the steadfast policy that litigation cases misinterpret them to be (Spiegel, Gill, Harbottle, & Ball, 2014). They are simply voluntary standards that provide "guidance on requirements for the type of materials and equipment that promote optimal safety in playspace layouts" (Herrington et al., 2017, p. 145, quoting CSA, 2014). Unfortunately, the

promulgation of these standards as requisite playground policy has resulted in playgrounds being a far cry from what they should be—a stimulating and engaging space for all children to learn, play, and develop (Spiegel et al., 2014)

What is needed now is support from within the education system from a policy and regulation standpoint that supports, rather than hinders, the development of naturalized playgrounds. To do this we must continue to produce research that reinforces the notion that naturalized playgrounds provide tremendous benefit for children so that we can begin to shift the perception of the relevant bodies so that they understand that the benefits of naturalized playgrounds outweigh their concerns of risk of litigation. In the meantime, organizations such as Evergreen (www.evergreen.ca) and Nature Learning Initiative (www.naturalearning.org) have developed resources that can provide guidance to those who want to make changes to their schoolyards, while still working within the current schoolyard policy and regulations:

- *The Learning Grounds: Guide for Schools*
- *Nature Place & Learning Places: Creating and Managing Places Where Children Engage with Nature*

More information can be found on their websites.

5.2.3 Safety Concerns

Very much connected with policy and regulation are safety concerns. As just touched on, participant stories highlighted that parental fears were limiting factors in terms of what schools felt that they could do regarding outdoor play and learning. Such findings reinforce the growing concerns over our current risk-adverse society that authors such as Richard Louv (*Last Child in the Woods*) and Lenore Skenazy (*Free Range Kids*)

trouble when they speak of “helicopter parents” and “bubble-wrapped children”. Though these parenting buzzwords are common throughout popular media, there is also a substantial body of research that has looked at the impacts of these parental trends.

Interestingly, research suggests that we may actually be doing more harm than good when it comes to trying to keep children safe from any and all risks. Research as far back as 1997 suggests that over protective parenting can inhibit social, emotional, and physical development in children (Valentine & McKendrick, 1997). More recently, authors such as Wyver et al. (2010) have concluded that the pervasiveness of what they call “surplus safety” is actually doing a detriment to the wellbeing of children. Research such as this supports perceptions of participants like Jason who questioned whether the push to keep kids entirely safe was actually leaving them worse off.

Fortunately, as participants’ stories, demonstrate the pendulum is beginning to swing back, away from a society full of helicopter parents and bubble wrapped kids, to one that recognizes the importance of risky-play and alike for the betterment of children. An example of this shift within the relevant discourse is the *Position Statement on Active Outdoor Play*, which states that

Access to active play in nature and outdoors—with its risks—is essential for healthy child development. We recommend increasing children’s opportunities for self-directed play outdoors in all settings—at home, at school, in child care, the community and nature (Tremblay et al., 2015, p. 6475).

This statement is a welcomed addition to the play discourse as it is something that practitioners, researchers, and stakeholders have been saying for some time. So although NPLS stakeholders perceive that they are presently impeded by safety concerns, it would

seem that a shift is on the horizon that will support and encourage the development of these types of play and learning spaces.

5.2.4 Professional Development

The findings of this study suggest that more work needs to be done in order for the naturalized playgrounds to be used to their fullest potential. While there were some participants who felt that the yard enhancements had helped to get teachers outside, many felt more needed to be done in this regard. Echoing these sentiments are the findings of Dymont (2005a) who suggested that less than 10 percent of teachers at most schools were using the outdoors for teaching. Finding that it is a minority of teachers who are taking advantage of the outdoors is interesting given all the research that makes the case for it being a great learning environment (Malone & Tranter, 2003a; Moore, 1996; Moore & Wong, 1997; Raffan, 2000). Rickinson et al. (2004) provides several reasons why this might be the case.

In their extensive review of 150 research studies that looked at outdoor learning Rickinson et al. (2004) identified five key barriers that inhibit its occurrence:

- 1) Fear and concern about health and safety
- 2) Teachers' lack of confidence in teaching outdoors
- 3) School and university curriculum requirements
- 4) Shortages of time, resources and support
- 5) Wider changes within and beyond the education sector (p. 51)

While participant stories certainly touched on each of these barriers, the two that were most often discussed were barriers two and three. Interestingly, Dymont (2005b) whose work looked specifically at schools with naturalized playgrounds found the same thing, lack

of confidence and curriculum concerns, as major barriers.

What is concerning about this is that for over a decade researchers have noted that this is a problem and have made recommendations that suggest ways to solve it. The report by Bell and Dymont (2006) is a notable example, suggesting that “We need to develop curriculum that provides clear direction and examples of how to use school grounds for outdoor, experiential learning. Teachers also need professional development opportunities to build their confidence and competence in teaching outdoors” (p. 53). But despite such calls for action, this research has still found the same result.

Though KidActive may not be able to have much of an impact in terms of overhauling curriculum to align with outdoor play and learning values, it does have an opportunity to continue striving to fill a substantial gap in regards to teacher confidence and competence. While they currently facilitate activities that are meant to better prepare teachers for engaging in outdoor learning, it is clear that more can and should be done. As this study found, participants felt they would really benefit from more workshops and other opportunities for professional development that would help them to feel better equipped to take their teaching out into the playground.

5.3 The NPLS Program: Nature Connection

As discussed at the outset of this paper, the contemporary back-to-nature movement—spurred in part by the likes of Richard Louv—has made the case for the need to foster human-nature (re)connections and the importance of experiences in nature to do so. The argument was made that naturalized playgrounds can provide the context for such connection (White, 2004). However, answering how, and the extent to which, the NPLS program was able to do this proved complex.

5.3.1 Place-Based Perspective

Though the notion that time spent in natural environments can induce a connection to the natural environment is widely supported throughout the relevant literature, Beery and Wolf-Watz (2014) contend that this perspective could benefit from a place-based understanding of these connections. That is, nature connections should be more broadly understood within the context of subjective experiences and meanings associated with encounters in and with places, more specifically, natural places. While Beery and Wolf-Watz's (2014) call for a place-based perspective in nature connection research was a guiding directive for this study, participant stories did not overly reflect the ability of naturalized playgrounds to provide the necessary natural environments to engender place-based nature connections. With that said, there appeared to be some consensus that the spaces could provide the context to do so; it had simply not happened yet. Instead, the place attachments and meanings that participants primarily spoke of revolved mostly around providing the children with engaging spaces to play and learn.

Some participants alluded to the fact that nature connection was an outcome that they were not yet seeing. There were others however, who questioned to some extent the ability of the playgrounds to yield such an outcome at all. This finding, again, calls into question whether these arguably manufactured nature-scapes have the ability to foster similar outcomes as that of what might be considered more authentic nature. While defining what is authentic nature and what is not is an entirely subjective endeavor (Cronon, 1996), it would be interesting to see how the subjective authenticity of a natural area might impact the ability of outcomes related to nature connections. Relatedly, some studies have looked at outcomes of artificial nature versus real nature. Beukeboom,

Langeveld, and Tanja-Dijkstra (2012) is one such study that found patients who were exposed to real plants and patients who were exposed to pictures of plants both reported lower levels of stress when compared to a control group. Though stress levels and connection to nature are decidedly different constructs, I question whether similar results would be found if nature connection were the outcome considered. An area for future research perhaps.

Alas, this study did little to further a place-based perspective to nature connection within naturalized playgrounds. It did however, provide some insight into nature connection more broadly and some important factors in fostering it within the context of schools and nearby nature spaces.

5.3.2 Contact and Mentorship

The few participant stories that spoke of the development of nature connection as a result of the NPLS program were framed around (a) providing contact with nature, and (b) providing mentorship to foster connection to it. As discussed, children's contact with nature can elicit many benefits, one of which is a connection to nature (Chawla, 2015). Though some participants questioned the degree to which nature was truly present in the yard, there were others who perceived that the NPLS program had produced adequate nature encounters to benefit children in the context of the schoolyard, and also in nearby nature.

By encouraging teachers to get outside and engage children in outdoor play and learning, the NPLS program had spurred some to go beyond the confines of the school property and out into nearby nature, whether it was an adjacent forest or a local walking trail. These teachers who made a conscious effort to take their students outside on a

regular basis as a result of the NPLS program were the ones who reported seeing a connection to nature amongst their students. While this finding echoes that of a growing volume of research substantiating the notion that consistent encounters with nature improves nature connection (Nisbet et al., 2009), it furthers this scholarship in that it provides an example of this within the context of outdoor play and learning within naturalized playgrounds.

Though encounters with nature are important, so too it would seem, is the circumstance around that encounter. This study suggests that mentorship played an integral role in developing stronger connections to nature. Participants like Cheryl (teacher) shared stories that demonstrated that it was through her guidance, questioning, and lessons that students began to think more critically about their connection to the natural world. This finding supports Grimwood, Gordon, and Stevens (2017), who found that outdoor experiential education instructors played an important role in creating and holding a space for nature connection for its participants. Heidi (NPLS facilitator) echoed this when she spoke about the need to have someone—a teacher, a parent, a mentor of some capacity—around the children that supports and values nature in a way that fosters a connection to it. While this is perhaps beyond the scope of what the NPLS program was designed to provide, I believe it is a worthwhile direction for KidActive to consider moving in later stages of the program after the yard has been enhanced and teachers are looking for ways to engage their students in outdoor play and learning opportunities. This would actually align well with the aspect of KidActive’s vision that states that they want every child “connected to their natural environment” (KidActive, n.d.-a, para. 3).

5.4 The NPLS Program: Environmental Ethic

As made evident in the earlier chapters of this paper, this research was very much contextualized around the notion that naturalized playgrounds, as a solution to the decline in children's access to natural environment (Kuo, 2013), could provide the space necessary to potentially foster a (re)connection with the natural world (White, 2004). Furthermore, this was premised on the belief that such connections may help to develop an environmental ethic which would inspire pro-environmental behaviour (Beery & Wolf-Watz, 2014; Leopold, 1949; Mayer & Frantz, 2004). This environmental ethic was framed around what was deemed a place-based land ethic, whereby place meanings were thought to influence certain tenets of Aldo Leopold's infamous land ethic, specifically feelings of being in community with nature (Leopold, 1949). While the majority of stories captured in this project did little to support this theory, one participant's narrative certainly did suggest it was possible.

5.4.1 Being in Community with Nature

Of the few stories that were shared that suggested a potential connection to nature, Cheryl's (teacher) was the only one that really began to tap into the deeper notions of nature connectedness that Leopold endorses whereby the boundaries of one's community are broadened to include the biotic community (i.e., the soils, waters, plants, and animals) as well (Leopold, 1949). Her narrative highlighted the ability of the outdoor, inquiry-based approach she had taken to her teaching as a result of KidActive's NPLS program to build an awareness of this broader biotic community amongst her students. Although this finding perhaps has more to do with her teaching approach of immersing her students in the

outdoors, than it does with the yard transformations of the NPLS program, it was still framed within the context of her NPLS story, and thus warrants discussion.

In reflecting on the nature-based learning experiences she had provided her class, Cheryl insightfully suggested that by exposing her students to the outdoors and having them truly experience it—having them in it, seeing it, touching it, hearing it—she saw this connection and relationship to nature develop. This coincides with Mayer, Frantz, Bruehlman-Senecal, and Dolliver (2009) who found that exposure to nature significantly influenced one's score on the Connectedness to Nature Scale, a measure inspired by Leopold's land ethic that determines the extent to which one feels in community with nature (Mayer & Frantz, 2004). She continued to explain how these kinds of experiences helped to broaden her students' perceptions of the world and to consider their impacts on the natural environment. Although it is hard to say whether the students in Cheryl's class had begun to critically think about their moral standing in regards to nature, their actions tended to indicate that something in them had stirred towards a more ecocentric outlook of the world; that is, one that promotes action for the betterment of the natural environment (Donnelly & Bishop, 2007).

5.4.2 Pro-Environmental Behaviour

Further to Leopold's land ethic is the belief that feeling in community with nature is a prerequisite for pro-environmental behaviour (Leopold, 1949). The findings of this research support, to some extent, the growing body of literature that contends that connections with nature engender pro-environmental behaviour (Gosling & Williams, 2010). Cheryl's students—with their home-made "enviro-belts", driveway information stands, and meetings with City Council to put up signs to raise awareness about the impacts

of littering on a nearby walking trail—provide evidence of how their connection to the natural environment had resulted in a passion to protect it. Descriptions of such behaviours were not universal amongst participants, but similar to the nature connection discussion, it would appear that engendering such an environmental ethic required more than simple exposure to the natural environment. It also required intentional mentoring in this regard. Recently, Prince (2016) made arguments that support this finding, explaining that mentoring is one of several pedagogical approaches that can contribute to pro-environmental action because it is a technique that encourages mentorees to critically reflect on their environmental values and associated actions.

Thus, the findings are important to note, not only because they illuminate yet another important unintended outcome that has resulted from the NPLS program, but as explained in the outset, the current degrading state of the natural environment necessitates a future citizenry with the requisite values and behaviours necessary to mitigate the environmental issues they are sure to inherit. It would seem that the NPLS program is playing a part the development of such a citizenry.

CHAPTER SIX: CONCLUSION

Environmental degradation is widely considered to be one of the biggest challenges of our time (Dearden & Mitchell, 2009). However, modern environmentalism has been relatively ineffective in provoking substantial change in this regard as we are still faced with numerous environmental issues (Burns & LeMoyné, 2001; Cianchi, 2015). It has been argued that these issues may be in part attributable to a growing disconnect with the natural environment (Liefländer et al., 2012; Louv, 2005; Nisbet et al., 2009; Pyle, 2003). Therefore, fostering a human-nature (re)connection, particularly among the children of our society, may be part of a viable solution.

This proves a challenge given that children's access to natural environments that might engender such a connection is declining (Chawla, 2015; Louv, 2005; Moore, 2014). Authors point to the greening of everyday spaces as potential innovative solutions to this problem that can work within an increasingly urbanized society (Kuo, 2013). Of particular importance to this study is the greening or naturalizing of school playgrounds in an attempt to reconnect children with nature. KidActive's NPLS program is one example of these efforts.

The purpose of this research was to analyze the meanings and outcomes associated with children's nature-based play within the context of naturalized playgrounds. Drawing on a qualitative and collaborative case study of KidActive's Natural Play and Learning Spaces program, the research focused specifically on identifying, understanding, and evaluating perceptions associated with naturalized playgrounds and the role they play in fostering nature connection, place meanings, and outcomes linked to individual and community wellbeing. To do this, four research questions were addressed:

1. What place meanings and perceived outcomes do students, teachers, administrators, parents, and NPLS facilitators associate with nature-based play specific to the NPLS program?
2. What are the perceived barriers to, and facilitators of, the place meanings and outcomes produced in these naturalized play spaces?
3. How, and to what extent, does the NPLS program facilitate nature connection within the schoolyard and other outdoor places?
4. How, and to what extent, does the NPLS program facilitate the development of an environmental ethic?

Through an improvisational case study informed by tenets of participatory research, evaluative research, narrative inquiry, and observational research, the stories of various NPLS stakeholders including students, teachers, parents, administrators, and NPLS facilitators were gathered. These narratives were then analyzed by weaving together tenets of narrative analysis, framework analysis, and logic modeling oriented through a pragmatically minded constructionist lens to meet the study's two guiding objectives: (1) to provide a program evaluation for KidActive's NPLS program, and (2) to interpret the extent to which nature-based play in this context serves as a mechanism for moral development through place-based nature connection.

6.1 Key Contributions

This study has made important contributions both scholarly and practically.

Scholarly Contributions

From a scholarly perspective, it was hoped that this research would help to fill seeming gaps in the naturalized playground literature. One such gap was providing

scholarly advancement in the research pertaining to naturalized playgrounds using constructionist thought that aims to shed light on multiple perceptions, meanings, and understandings, specifically with respect to the outcomes associated with naturalized playgrounds. The other was contributing to an understanding of the potential for naturalized play spaces to promote place meanings and outcomes associated with nature connection and the fostering of an environmental ethic in children. The following discusses the contributions made in this regard.

As discussed in Chapter 5, nature-based play provided various place meanings for NPLS stakeholders, including: a place to play, a place for healthy childhood development, a place to learn, a place to (re)connect with nature, and a place for everyone. Although these place meanings appeared to do relatively little to engender a connection to nature and/or an environmental ethic, they add another layer of complexity to the naturalized playground literature in that they help to provide a more nuanced understanding of experiences in and with these places.

As far as key outcomes of naturalized playgrounds, this research furthers the relevant literature in that it provides narrative-based evidence of a variety of the outcomes that had previously been supported using more traditional research methodologies (Dyment, 2005a; Raffan, 2000). Child-oriented outcomes of the NPLS program were primarily concerned with physical, cognitive, and social/emotional health. Educators experienced outcomes associated with an increase in knowledge and understanding of the value of outdoor play and learning, and consequent changes in teaching practices. The primary community-oriented outcome was a shift in culture towards the endorsement and advocacy of outdoor play and learning. While barriers and facilitators of these meanings

and outcomes had been previously discussed (Dyment, 2005b), this study reaffirms past research, contextualizing many of these enabling and inhibiting factors in four key areas: human resources, policy and regulation, safety concerns, and professional development.

The results of this study did little to further a place-based conceptualization of nature connection (Beery & Wolf-Watz, 2014) because the place meanings found had less to do with connecting to the natural environment, and more to do with providing children engaging spaces to play and learn. However, it made headway in regards to drawing attention to the potential of naturalized playgrounds to foster the development of nature connection and an environmental ethic more generally. Of those who experienced an increase nature connection as a byproduct of the NPLS program, factors including contact with natural environments and mentorship were found to be important influencers. Similarly, of those whose outdoor play and learning experiences resulted in a feeling of being in community with nature, it appeared that an ecocentric environmental ethic emerged along with increased pro-environmental behaviours.

Methodologically speaking, this research contributed by demonstrating how improvisational inquiry (Berbary & Boles, 2014) can be used to weave together seemingly paradigmatically different investigative approaches to yield legitimate, practical, and meaningful research. By drawing on divergent methodologies (i.e., participatory research, evaluative research, narrative inquiry, and observational research) and modes of analysis (i.e., narrative analysis and framework analysis), this case study was able to work between and across paradigms to produce a narratively contextualized program evaluation that meets the needs of KidActive who sought a systematically produced captivating account of their NPLS program.

Practical Contributions

From a practical perspective, this study has contributed by providing KidActive a systematic evaluation that tells the story of their NPLS program. Generally speaking, this story outlines the elements needed in order to deliver the program, the activities it has been able to provide, and the numerous outcomes that have followed as voiced by key stakeholders. This study has found that the NPLS program has delivered on each of the outcomes it sought to achieve through this project, including:

- Enhancing the quality and quantity of active outdoor play and learning,
- Building a healthier learning and play environment for all students,
- Designing and creating spaces for inclusive, co-operative, creative, inspiring outdoor play and innovative outdoor learning opportunities in schoolyards,
- Sharing educational resources to support cross-curricular active outdoor learning, and
- Engaging school staff, student, parents and the community (KidActive, n.d.-b, p. 1).

With this knowledge, as well as a final narrative representation of the findings (discussed in Section 6.3: Next Steps) and the raw data from this research, KidActive will have the information needed to make informed decisions as to the future development and provision of the program. They will also have the evidence needed to be able to leverage support to acquire funding and resources, as well as articulate the efficacy of the program in order to garner buy-in from gatekeepers such as school board superintendents and school principals who ultimately make the decisions as to whether or not schools will participate in such a program.

6.2 Limitations

A primary limitation of this study was the inability to capture the narratives of child participants of the NPLS program. However, observations of child participants engaged in the schoolyards enhanced through the NPLS program helped to better understand their experiences. In addition, the participants of this study included key stakeholders of the NPLS program as identified by KidActive. This selection process may have resulted in narrative responses that might differ from participants who were not as connected to the NPLS program. However, the diversity of participant voices interviewed helped to mitigate these limitations by providing a wide range of perspectives around the NPLS program. Furthermore, an inherent limitation of qualitative interviews is the ability of the researcher to accurately capture the perspectives and voices of the participants. This limitation was minimized by the use of member checking, i.e., providing participants the opportunity to review interview transcripts.

6.3 Next Steps

Next steps in regards to this project would be to fulfill the participatory facet of this study by developing an accessible representation of the study's findings that honours the narrative dimension that KidActive was hoping to get from this research. This representation will aim to capture the story of the NPLS program in a way that can be used to promote the program and its benefits in a way that is most useful to KidActive and its stakeholders. That is, this representation should help to celebrate the success of the program and promote outcomes associated with it in a way that is accessible to diverse audiences. This representation will be developed such that it showcases what the program needs, what the program does, and what the program achieves by incorporating

participant voices and captivating pictures of participants engaged in the program. The work done by Bryan Grimwood and Michelle Gordon (www.uwaterloo.ca/nature-leisure-community-research-group/projects/stories-resilience) in collaboration with *the p.i.n.e. project* is an example of what this representation aims to be.

In terms of future research, long-term outcomes of the program (e.g., nature connection and improved overall well-being) need to be re-evaluated at a later stage in order to determine whether or not they have been attained. Additionally, future research on whether or not these arguably manufactured nature-scapes produce similar outcomes to those achieved through genuine experiences with nature should be looked at. Relatedly, similar research could be conducted in more urban contexts, as this study focused primarily on rural school communities. Finally, an analysis of the current education system should be conducted to determine if and how outdoor play and learning practices can be incorporated into the training of educators such that they acquire the necessary skills to effectively engage students in outdoor play and learning while still meeting curriculum expectations, and thus being able to use naturalized playgrounds to their full potential.

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APPENDIX

Appendix A: Interview Guide

Briefing: *Thank you for agreeing to participate in this study. As previously mentioned, I am interested in your hearing stories about the NPLS program and the meanings and outcomes associated with it and the experiences fostered in the natural spaces that are developed. This interview is meant to be conversational in style. I have some questions I would like to ask, however, I am also interested in exploring new ideas as they arise.*

I would like to remind you that you are not obligated to participate in the study or respond to any questions in the interview you do not wish to. You may choose to end the interview and/or your participation in this study at any time without repercussions.

Opening Question: *Tell me your NPLS story.*

Prompts associated with Research Question 1 (What place meanings and perceived outcomes do teachers, administrators, parents, and NPLS facilitators associate with nature-based play specific to the NPLS program?):

- *Tell me about what these spaces mean to you.*
 - *Why are these spaces significant to you, your children, and/or your students?*
 - *What makes these spaces meaningful?*
- *What do you see yourself, your children, and/or your students getting out of the NPLS program?*
 - *Why is it beneficial to you and/or them?*
 - *What have you noticed in terms of the development of children?*
 - *Nature connections, physical, mental, emotional, social health and well-being, overall health and happiness, changes in their behaviour generally and in regards to accessing outdoor play*
- *Tell about any changes in regards to the children's play*
 - *Creative, inclusive, co-operative?*
- *What about the NPLS program has been influential in shaping your, your children's, and/or you students' outlook toward outdoor play and learning?*
 - *What are your perceptions of outdoor play and learning?*
 - *How have they changed?*

Prompts associated with Research Question 2 (What are the perceived barriers to, and facilitators of, the place meanings and outcomes produced in these naturalized play spaces?):

- *Tell me about any factors that have impacted the success of the NPLS program*
 - *Tell me about any facilitators that helped the program*
 - *Tell me about any facilitators within the program that helped to achieve developmental outcomes and active play*
 - *Tell me about any barriers that hindered the program*
 - *Tell me about any barriers within the program have hindered the achievement of developmental outcomes and active play*
- *What elements of the program and/or space have contributed to you, your children, and/or your students feeling attached/connected to the space (sense of place)?*

Prompts associated with Research Question 3 (How, and to what extent, does the NPLS program facilitate nature connection within the schoolyard and other outdoor places?):

- *Tell me about the ability of the NPLS program to encourage nature connection*
 - *What have you seen/felt in regards to your, your children's, and/or your students' relationships with nature?*
 - *How have they changed over time?*
- *What transformations have you seen/felt in regards to how you, your children, and/or your students identify with the natural environment?*
- *What about the NPLS program has been influential in shaping your, your children's, and/or your students' outlook toward nature and play?*

Prompts associated with research Question 4 (How, and to what extent, does the NPLS program facilitate the development of an environmental ethic?):

- *Has the NPLS program caused you to think about your effect on the environment? If so, how?*
- *What elements of the NPLS program, if any, encourage or instill a care for the environment?*
- *Tell me about your, your children's, and/or your students' perceptions regarding your/their welfare in relation to the welfare of the natural environment*
- *To what extent do you see yourself, your children, and/or your students as being/believing to be in community with nature?*

Debrief: *That concludes my questions. Thank you for your participation and for sharing your stories and experiences pertaining to the NPLS program. If you would like, I can return to you your interview transcript when it's ready. This will give you the chance to elaborate on and clarify details from the stories you've contributed. Would you be open to us connecting again to do this? Thank you.*