

Exploring Parental and Instructor Perspectives of Learning in the Natural Environment for
Young Children: A Qualitative Study

by

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A thesis submitted in partial fulfillment of the requirements for the degree of

Master of Science

in

Health Promotion and Socio-Behavioural Sciences

School of Public Health

University of Alberta

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Abstract

Background: Nature-based or outdoor experiences have important implications for childhood learning and development. Nature-based learning (NBL) utilizes the benefits of nature by weaving the goals of the school curriculum into the natural environment (Larimore, 2016). A paucity in the NBL literature is evident, although research has steadily grown with the increase in programming following the onset of the COVID-19 pandemic. To expand our current knowledge, I explored the following questions: (RQ1) how do parents and instructors perceive children’s learning in the natural environment in an early childhood learning setting? and (RQ2) how is remote learning during the COVID-19 pandemic experienced by parents with young children registered in NBL? Departing from the current research available, my study utilized a health promotion lens to critically examine NBL programs.

Methods: This qualitative study followed an Interpretive Description (ID) methodology (Thorne et al., 1997). I purposefully recruited 10 parents and 3 NBL instructors to share their experiences via phone or virtual interview. Instructor interviews were included to provide insight on the experience of learning and inform parent interviews. Data analysis was conducted using thematic analysis (Braun & Clarke, 2006) supported by constant comparison strategies (Glaser & Strauss, 1967).

Results: Findings were grouped by research question. Findings that explored the experiences of young children in nature were organized into four themes: (1) Nature-Based Education: A Foundation for Learning; (2) Natural Spaces for Health and Mental Health Development; (3) Community Building; and (4) Capacity Building. Findings that shed light on the remote learning experiences from the perspectives of parents were organized into four other themes: (1) Balancing

Responsibilities; (2) Gender Inequities Amplified by the COVID-19 Pandemic; (3) Nature for Health Promotion; and (4) Connection.

Conclusion: Based on the findings of this study, NBL programs can be positioned as a health promotion intervention for the benefit of child, family, and community health and wellbeing. The use of NBL as a health promotion intervention may have greater implications for families with limited outdoor experience and in future crises planning.

Preface

This thesis is an original work by Brittany Molner. The research project, of which this thesis is a part, received research ethics approval from the University of Alberta Research Ethics Board, Project Name “Exploring parental perspectives of learning in the natural environment for young children: A qualitative study”, Pro00097059, March 11, 2020. The final amendment, Pro00097059_AME7, was approved January 31, 2022.

Acknowledgements

Thank you to my friends and family for your continuous support. In particular, I would like to thank Garrett Molner, Danielle Klassen, Pamela Mellon, and Sadie Sych – thank you for patiently listening to me complain for the last three years. Without their support and friendship, I would not have managed both a master’s thesis and a global pandemic.

A special thanks to Markus Tookey for the support and thorough review of a qualitative study that likely made no sense as a positivist.

Thank you to my supervisory committee members, Drs. Kate Storey and Nancy Spencer, without your thoughtful and rich feedback, this project would not be what it is today. Thank you to my external examiner, Dr. Kim Raine for jumping in at the last moment with so much enthusiasm to be a part of my defence. I cannot do justice my immense gratitude to my supervisor, Dr. Candace Nykiforuk. In the years that I have worked and studied under you, I have matured as a professional, a student, and an individual. This experience is one that I will carry with me for the rest of life, professionally and personally, and am better because of this opportunity.

I would also like to acknowledge the financial support received during my studies. As a Graduate Research Assistant in the PLACE Research Lab I was supported from September 2019 – August 2021. Over the course of my studies I received numerous scholarships and bursaries that were greatly appreciated and integral to my academic achievements: the School of Public Health – University of Alberta Accelerating Community Responses to COVID-19 through Edmonton Community Foundation Public Health Community Impact Placements Bursary (University of Alberta); Joseph-Armand Bombardier Canada Graduate Scholarship (Social Sciences and Humanities Research Council); Walter H Johns Graduate Fellowship Award (University of Alberta); The Graduate Students' Association Bursary (University of Alberta); Alberta Blue Cross

Health and Wellness Graduate Bursary (Alberta Blue Cross); and University of Alberta Graduate Bursary (University of Alberta).

Lastly, I'd like to thank my mother, Donna Clark-Molner. A woman that inspires me every day to try a little harder, be a little kinder, and leave the world a little better than I found it.

Table of Contents

ABSTRACT	II
PREFACE	IV
ACKNOWLEDGEMENTS	V
CHAPTER 1: INTRODUCTION	1
BACKGROUND.....	1
<i>Nature-Based Learning</i>	1
<i>Social Determinants of Health</i>	2
<i>Health Promotion</i>	3
CONTEXT	4
<i>Education and Nature-Based Learning in Alberta</i>	4
RESEARCH FOCUS	5
RESEARCHER POSITIONALITY	6
PURPOSE	9
OBJECTIVES	9
RESEARCH QUESTIONS:	9
OVERVIEW	9
KEY DEFINITIONS	10
SUMMARY	11
CHAPTER 2: LITERATURE REVIEW	12
INTRODUCTION	12
<i>Nature-Based Learning</i>	12
<i>COVID-19 and the Impact on Natural Environment Exposure</i>	19
<i>Public Health Implications of Nature-Based Learning</i>	20
CHAPTER 3: METHODS	22
METHOD AND METHODOLOGY	22
<i>Interpretive Description</i>	22
<i>Theoretical Perspective</i>	24
<i>Participant Recruitment</i>	25
<i>Recruitment Process</i>	26
<i>Sample Characteristics</i>	28
<i>Environment</i>	29
EXPLORATORY PHASE.....	30
DATA COLLECTION	31
<i>Data Collection Strategies</i>	31
DATA ANALYSIS	35
RIGOUR.....	39
ETHICS	40
CHAPTER 4: FINDINGS – PARENTAL AND INSTRUCTOR PERCEPTIONS OF LEARNING IN THE NATURAL ENVIRONMENT FOR YOUNG CHILDREN	42
STUDY FINDINGS	43
1. <i>Nature-Based Learning: A Foundation for Learning</i>	44
2. <i>Natural Spaces for Health and Mental Health Development</i>	53

3. <i>Community Building</i>	56
4. <i>Capacity Building</i>	61
CHAPTER 5: FINDINGS – THE EXPERIENCE OF REMOTE LEARNING FOR PARENTS WITH YOUNG CHILDREN	72
STUDY FINDINGS	72
1. <i>Balancing Responsibilities</i>	74
2. <i>Gender Inequities Amplified by the COVID-19 Pandemic</i>	79
3. <i>Nature for Health Promotion</i>	81
4. <i>Connection</i>	90
CONCLUSION	98
CHAPTER 6: DISCUSSION	99
NATURE-BASED LEARNING AS A HEALTH PROMOTION INTERVENTION	101
1. <i>Nature as a Foundation for Education</i>	101
2. <i>Capacity Building in Communities</i>	105
Summary	111
NATURE-BASED LEARNING AS MEDIATOR DURING PERIODS OF STRESS	112
1. <i>Nature-Based Learning and Health Promoting Behaviours</i>	112
2. <i>Nature Spaces and Virtual Spaces for Connection and Community Building</i>	115
3. <i>Mothers and Nature-Based Learning during the Pandemic</i>	120
Summary	124
POLICY IMPLICATIONS	124
PRACTICE IMPLICATIONS	127
STRENGTHS	129
LIMITATIONS	130
FUTURE RESEARCH	131
CONCLUSION	133
CHAPTER 7: CONCLUSION	134
SUMMARY	134
KNOWLEDGE TRANSLATION	136
CLOSING	136
RESEARCHER REFLECTIONS	137
REFERENCES	139
APPENDIX A: INSTRUCTOR INFORMATION LETTER	170
APPENDIX B: PARENT INFORMATION LETTER	173
APPENDIX C: INSTRUCTOR SEMI-STRUCTURED INTERVIEW GUIDE	176
APPENDIX D: PARENT SEMI-STRUCTURED INTERVIEW GUIDE	180
APPENDIX E: THEMATIC MAPS	184
APPENDIX F: KNOWLEDGE TRANSLATION PRODUCT – STORYBOOK AND PARTICIPANT FEEDBACK	186

Chapter 1: Introduction

Background

Nature-Based Learning

The disconnect between children and nature has grown with a rise in technology, fear, and adult-led organized activity. The “Biophilia Hypothesis” (Wilson, 1984; Gullone, 2000) asserts that humans have inherent partiality to the natural environment. Further, connection to nature and outdoor risky play has been suggested to be essential and beneficial to childhood health and development (Largo-Wright et al., 2018, Brussoni et al., 2015).

Nature-based learning (NBL; or nature-based education or nature kindergarten or Forest School or Waldkindergartens) is an alternative pedagogy to traditional classroom settings with growing interest from parents and school community stakeholders (Sobel, 2014; Larimore, 2016). Interest has grown particularly in response to the COVID-19 pandemic (Dashingdad.com, 2021), as evidenced by the creation of public health measures that encouraged physical distancing and outdoor activities (CDC, 2022). NBL brings academic curriculum into the natural environment, in addition to developing children’s physical, emotional, and social skills (Child & Nature Alliance of Canada, 2019). NBL and learning in nature spaces positively influences learning by increasing attention, reducing stress, and increasing self-discipline and motivation, while also creating opportunities for safe risk taking (Kuo et al., 2019; Coe, 2017); NBL benefits are further explored in Chapter 2. A large number of these programs in Canada follow an emergent curriculum where the children’s interests lead program experiences (Child & Nature Alliance of Canada, 2019).

Social Determinants of Health

Social Determinants of Health (SDOH) are social and economic factors that influence personal health and wellbeing (Raphael, 2009). Education and early life experiences are two determinants that can impact individual and community health (Raphael, 2009). Education can influence better health outcomes and correlates with other SDOH: income, employment security, and working conditions (Mikkonen & Raphael, 2010). Early life experiences including physical (e.g., low birth weight), financial (e.g., poverty) and psychological (e.g., social relationships) experiences can impact immediate and future health and wellbeing (Mikkonen & Raphael, 2010). “Accumulated disadvantage[s]” (p.23) from these experiences can have negative cognitive and emotional effects on children (Mikkonen & Raphael, 2010). Understanding the importance of these SDOH, funding education to support curricula, and supporting children and families (through policies and benefits; e.g., childcare) have been suggested as policy strategies to support the health of Canadians (Mikkonen & Raphael, 2010).

SDOH overlap with socioeconomic status factors (e.g., education, income, etc.). Socioeconomic status, a metric that combines economic and social resources, in childhood impacts health later in life (Mathews et al., 2010). Specifically, low socioeconomic status contributes to poor health outcomes later in life (Mathews et al., 2010). Evidence suggests that direct and indirect causal relationships between socioeconomic factors and health outcomes (e.g., chronic disease development) exist and may be moderated or mediated by health behaviours (Braveman & Gottlieb, 2014). The promotion of positive healthy behaviours (or ‘healthy lifestyle’) may influence future health outcomes despite disadvantageous socioeconomic factors (Wang & Geng, 2019). Fostering positive healthy behaviours in childhood has significant impacts on lifelong health and wellbeing (Conti et al., 2016). Braveman and Gottlieb (2014) advocate for the implementation of health-

promotion strategies that extend to the community level to influence the strongest determinants of health, factors related to living and working conditions. School communities are critical arenas for health promotion activities for children, teachers, school administrators, and families.

Overall, SDOH impact health and wellbeing throughout the lifespan. NBL programs can influence education and early childhood experiences, potentially improving childhood health and development, with implications on future health and wellbeing. This impact on childhood health and development is likely, as childhood experiences in nature have been shown to impact physical and mental health in adulthood (Dibben et al., 2017; Engemann et al., 2019; Thompson et al., 2008), positioning nature as a potential primary health promotion intervention (Maller et al., 2006).

Health Promotion

Health promotion can be considered both a discourse and a “specialized field of intervention within the broader field of public health” (Rootman & O’Neill, 2017, p.25). Health promotion is defined by the Ottawa Charter for Health Promotion as “the process of enabling people to increase control over, and improve, their health” (p.1); to reach an overall state of health and wellbeing an “individual or group must be able to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment” (WHO, 1986, p.1). The physical environment and the impacts of climate change, resources, and sustainable development have implications on health promotion (Hancock, 2012). In this thesis, I use the concept of health promotion to refer to the practice of intervention intended to enhance individual, family, and community health. Health can be understood through the physical, mental, and social aspects that impact quality of life, which can be facilitated or impeded by both internal and external factors (Rootman & Raeburn, 1994; Raeburn & Rootman, 2007).

School communities and classrooms are important platforms for health promotion. The WHO's Global School Health Initiative encourages health promotion at all community levels to improve student, school staff, and family health through school-based initiatives (WHO, n.d.). Comprehensive School Health (CSH; JCSH, n.d.), an approach which emphasizes supporting whole-school health with an objective of improving child and youth educational outcomes, focuses on social and physical environments, teaching and learning, policy, and partnerships and services (JCSH, n.d.). School-based health promotion can be an effective strategy that positively impacts both health and education outcomes (WHO, n.d.), which in turn, can have positive long-term impacts for communities. NBL programs are not currently a part of the two previously mentioned approaches; however, they are all strategies that can be utilized to promote health and wellness in school communities. Nature offers an accessible space that inherently promotes physical, mental, and social health (Kuo et al., 2019). Bridging school-based health promotion with nature capitalizes on the benefits of these, often accessible, outdoors spaces for children, staff, and families, for many school communities.

Context

Education and Nature-Based Learning in Alberta

Education in many Canadian provinces takes a broad approach to curriculum, which may or may not include a focus on health and social development for children (McCall & Laitsch, 2017). In Alberta, the province has released a new kindergarten to grade six curricula (to be implemented September 2022) that includes a renewal of physical education and wellness curriculum (Government of Alberta, 2022). In this updated curriculum, students will “learn about active living, movement skill development, healthy relationships, nutrition, consent, human reproduction,

puberty and financial literacy” (Government of Alberta, 2022). Nature-based or outdoor play is not included in these curricula updates.

Despite NBL’s exclusion from the Alberta elementary education curricula, instructors in Alberta are increasingly including NBL in their classrooms and programs. For example, in two Alberta cities, Edmonton and Calgary, the number of programs is increasing and there is growing interest from parents looking for a COVID-safe space (i.e., outdoor spaces, spaces with increased ventilation,...etc.; CDC, 2022) for their children to learn and develop (Raisingedmonton.com, 2020; Dashingdad.ca, 2021). In a 2019 survey of NBL educators, Alberta was well represented in the sample with representation in 21 of the 165 programs, the third largest proportion amongst Canadian provinces (Child & Nature Alliance of Canada, 2019). Unfortunately, many of these programs are inaccessible to many families due to the high cost of the program in comparison to a traditional kindergarten or preschool program (Raisingedmonton, 2016). Because of this financial barrier, gaining government and policy influencer support for NBL is crucial to increase accessibility for all Alberta families.

Research Focus

Considering the current interest in NBL programs, the increase in NBL programming during COVID-19, and the potential for education in nature settings to act as a health promotion intervention, building a better understanding of NBL programs in Alberta is pivotal to the future of these programs. Further, the challenges brought on by the COVID-19 pandemic for Canadian families and the abrupt transition to remote learning for children, offer a unique opportunity to explore these families’ experiences during this period. The knowledge gained about these experiences can contribute to the growing COVID-19 pandemic literature.

Researcher Positionality

Positionality reflects a researcher's ontological and epistemological assumptions, as well as their assumptions about human nature (Holmes, 2020). These assumptions are developed through the researcher's values and beliefs that are formed by their lived experiences (Holmes, 2020). A researcher's positionality is an important consideration in qualitative work as it influences how research is conducted and the knowledge gained from the work; the researcher becomes an "instrument" (p.75) in qualitative research where their experiences and personal and professional influences affect how they approach their research (Thorne, 2016). Most significantly, it influences the area of study, and how they design a study, collect data, and communicate findings (Malterud, 2001). Considering I was the primary instrument in this qualitative study, I have interacted with my participants and data to influence findings, increasing the subjectivity of my findings (Merriam & Tisdell, 2016).

Positionality can be identified in three areas of a researcher's work: (i) where the researcher is positioned in the area of study, (ii) how they view themselves and how they may be viewed by the research participants, and (iii) how the researcher and context may influence their work (Savin-Baden & Major, 2013). To understand how I approached my research, in the following paragraphs I have explored my connection to the natural environment, NBL, and the participants.

To begin, I consider myself an outdoor enthusiast and proponent of connecting young children with the natural environment. Children can experience this connection in many ways, such as nature-based programs, outdoor education programs, or structured and unstructured recreational time outdoors. I feel that these outdoor experiences can lead to a lifelong connection with the outdoors and a deep appreciation for the environment, encouraging stewardship activities. I understand that not everyone will share my same appreciation for the outdoors, but I believe it to

be an effective health intervention based on my own experiences and the evidence from the current body of literature.

Raised in a single parent household in an urban environment, I spent limited time in the outdoors. This was due to many factors outside of my control, namely limited resources in my community (e.g., green spaces) and practicality (i.e., growing up in a single parent household reduced time and means to experience the outdoors through activities like hiking and camping). Although my parent ensured I had a rich childhood experience, outdoor experiences were a challenge due to her own inexperience and the inaccessibility of nature spaces in our community. As such, I understand why some parents might feel uncomfortable with a program like NBL (e.g., fear of the unknown, limited resources), but also might potentially welcome the experiences as it would provide a bridge to the outdoors for those families with limited outdoor experience.

Second, it is important to disclose that I am not a parent, so I took an outsider perspective to this experience. I cannot relate to the experiences of parenthood; however, I have tried to explore and describe their experiences with great care, respecting the nuanced experience of child rearing, particularly during a complex period like the current COVID-19 pandemic. Connected to this, I identify as female, which further influenced how I perceived the remote-learning and COVID-19 pandemic for my parent participants, who all identified as females.

Considering the experiences of the instructor, I have previous experience in education as an educational assistant, and I bring this knowledge with me into this research study. In this role, I worked in many different school settings, which became an opportunity to compare and contrast my experiences in these settings. Most notably, I spent time reflecting on the inequity experienced by many schools. Many schools were limited in what they could offer students, even though on a broad scale the needs of the children did not significantly differ across schools. This developed

my interest in studying school communities and exploring programming that could be implemented in a large number of schools with few required resources. However, this is where my similar experiences end as I do not have experience with scholarship in education and have not studied pedagogical methods in-depth. I have not worked in a classroom for long periods of time, and do not understand the nuanced experiences instructors have year to year.

In preparation for this study, I volunteered with a nature-based kindergarten program. I intended to complete my research with this program, in-person, exploring the experiences of the children in the school setting. This program was selected due to convenience, as I was able to leverage personal connections to create this opportunity as the instructor of this program and I were connected outside of the program. I considered this relationship a strength, as it has engendered trust and strong communication between myself and the instructor who became a key informant. This connection encouraged me to think about NBL from her perspective and filled gaps in my understanding with her experience and knowledge as an instructor. I volunteered in this class prior to March 2020 to understand how the program operated in practice, however, when Alberta schools shifted to an online delivery due to the COVID-19 pandemic, I was unable to continue. I stayed in contact with the instructor (March – June 2020) to understand what she was experiencing and what the parents and children were experiencing at this time. This informed my project as I moved forward considering the challenges and pivoting resulting from COVID-19.

Lastly, as a student researcher, I come to this project as a novice academic. I believe that knowledge and understanding are co-constructed, and in this project the knowledge and experience that myself, the instructors, the parents, and my supervisor possess will all contribute to the creation of knowledge in this research study. Therefore, I approached this study from a constructivist lens. This paradigm is in keeping with the methods selected for this study as the

theoretical underpinnings of Interpretive Description are supported by constructivist paradigms (Thorne, 2016).

Purpose

The purpose of this study is twofold: to explore how learning is experienced in the natural environment by young children from the perspective of parents and instructors and, to understand the potential impact of a NBL program by examining the remote learning experiences for parents during the COVID-19 pandemic.

Objectives

In this study, I sought to understand how parents of children in a NBL program and instructors of NBL programs perceived learning in the natural environment, before and during the COVID-19 pandemic. To understand the impact of NBL, I invited parents with young children who had been registered in NBL programs in Alberta and instructors of these programs to share their perspectives.

Research Questions:

- (1) How do parents and instructors perceive children's learning in the natural environment in an early childhood learning setting?
- (2) How is remote learning during the COVID-19 pandemic experienced by parents with young children registered in a NBL program?

Overview

In this master's thesis, I have detailed my research that took place over 2020-2022, including an exploratory phase with a local nature-based kindergarten, and exploration of parental

experiences of NBL for their young children before and during the COVID-19 pandemic. There are seven chapters: (1) Introduction, (2) Literature Review, (3) Methods, (4) Findings I – Parental and Instructor Perceptions of Learning in the Natural Environment for Young Children, (5) Findings II – The Experience of Remote Learning for Parents with Young Children, (6) Discussion, and (7) Conclusion. Following the conclusion, I have included references and various appendices to elaborate on the research process.

Key Definitions

Early childhood: The period between 0-8 years of age (Larimore, 2016).

Health promotion: Per the Ottawa Charter for Health Promotion, “the process of enabling people to increase control over, and to improve, their health. To reach a state of complete physical, mental and social well-being, an individual or group must be able to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment” (WHO, 1986, p.1).

Instructor: For the purposes of my study, an instructor is any individual that has led a NBL, learning, or play program.

Natural environment: A nature space that contains primarily green spaces, and may feature forests, natural clearings, water sources, or other naturally occurring elements with limited human intervention or alterations (Sobel, 2014; Coe, 2017; Fjortoft, 2004).

Nature-based learning or education (NBL): “Child-directed, play and inquiry-based learning that happens in the outdoors, whereby children (0-12 years) go outdoors on a regular and repeated basis over an extended period of time” (Child & Nature Alliance of Canada, 2019, p.2). At the time of writing there is no universal definition for these programs (Miller, 2021). Lee et al. (2022) have put forth the following definition with the intention of establishing harmonious terminology

in nature and outdoor research: “a form of teaching and learning situated in the context of outdoor natural settings” (p.13).

Remote learning: Learning from a space other than a classroom at the direction of a teacher or instructor (Muñoz-Najar et al., 2021). The inclusion of a teacher separates remote learning (or online school or virtual learning) from home education or homeschooling, which is at the direction of a parent (Alberta Education, 2010).

Summary

While NBL programs serve to promote healthy behaviours in school communities and can positively impact childhood health and development, there is a dearth of knowledge and limited uptake in Alberta school communities and early childhood programming. However, catalyzed by the COVID-19 pandemic, NBL programs have increased in popularity, likely due to parents’ interest in offsetting the public health related restrictions and policies enacted (e.g., school closures and remote learning; physical distancing indoors). This study resulted in the development of recommendations for stakeholders and policy influencers in Alberta to support NBL programming, based on the understandings gleaned from parental perceptions of their children’s experience in NBL programs and their experiences of remote learning with their children during the early months of the COVID-19 pandemic.

Chapter 2: Literature Review

Introduction

The natural environment is rich with opportunities to encourage childhood learning and development. However, a significant amount of learning for young children is constrained to the classroom setting in early education. This traditional setting, composed of a structured agenda that takes place within a physical classroom with set times for academic subjects, has benefits for learners, such as opportunities for social interaction, enhanced collaboration, and organization (Gislason, 2010). Despite this, early education pedagogy is shifting away from the traditional classroom structure to embrace new ideas and explore alternative teaching methods and settings. Alternative and progressive teaching styles include creating child-led learning environments, play-based environments, and promoting creativity, imagination, and free play (Ourkids.net, n.d.). With numerous options available for parents and guardians of young children, dedicated study is required to understand how these alternative teaching methods impact young children and to support the advancement of early education. This study will focus on NBL, an area that is of increasing relevance considering the current COVID-19 pandemic and the evolving indoor restrictions that have forced education settings to adapt.

Nature-Based Learning

NBL is a unique pedagogical method, different from other alternative education forms, as it utilizes the complexities of the natural environment for the benefit of early education. NBL refers to education programs that expose students to the natural environment in an educational setting; this may include Forest Kindergarten, Waldkindergarten, Forest Schools, Nature-Based Preschools, and Nature-Based Education (Larimore, 2016). The differences in these programs are

nuanced, but for the purposes of this literature review, the programs will be connected by their inclusion of nature in an education setting. NBL may also embed the objectives set by a governing body, as outlined in the school curriculum, into the natural environment: children learn in the natural environment and attain the curriculum outcomes required for literacy, numeracy, and natural sciences (Larimore, 2016; O'Brien, 2009).

Nature in education has been described as versatile, functioning as the setting, resource, and educator, offering open-ended learning opportunities for children in a rich natural space (MacQuarrie et al., 2015). Comparing NBL programs against traditional early education programs, NBL programs are typically funded privately, with fewer enrollment numbers, and have different rules and routines intended to create trust between child and practitioner while they engage in activities outdoors (Lysklett & Berger, 2017). Most significantly, these programs take place in diverse settings that open up opportunities for all children (Barton, 2014).

Nature-based and outdoor play have been suggested by Fjortoft (2001) to promote overall physical health for children by providing a unique environment that encourages fine and gross motor development. The natural environment also offers many mental and emotional health benefits, such as enhancing the ability to cope with stress, increasing attentional capacity, and improving self-esteem (Kaplan, 1995; Tennessen & Cimprich, 1995; Brown, et al., 2013). Such benefits contribute to the creation of a healthy space for learning and development, and are capitalized on in a nature-based 'classroom' or space. Unfortunately, our understanding of NBL as a pedagogical method is limited, particularly in a Canadian context. Current literature has explored the impact of NBL (and similar programs) on health and development for children (e.g., Barton et al., 2015, O'Brien, 2009), risk and power in a natural setting (e.g., Haywood-Bird, 2016,

Coe, 2017), and practitioner perspectives (e.g., MacQuarrie et al., 2015), though few Canadian studies have been undertaken (e.g., Coe, 2017, Meyer et al., 2017).

Health and development for young children

Physical activity can directly impact a child's health, academic performance, and growth and development (ParticipACTION, 2020). Unfortunately, only about 15% of children and youth (5- to 17-year-olds) meet the Canadian 24-Hour Movement Guidelines (ParticipACTION, 2020), which are in place to promote children to maintain a level of physical activity needed for their health. Outdoor time positively impacts physical activity, reduces sedentary behaviour, and increases fitness in children (Gray et al., 2015). In a study that looked at playtime intervention and its impact on physical activity, both nature-based and playground sport interventions increased moderate-to-vigorous physical activity (Barton et al., 2015). The authors of this study suggest that a nature-based intervention may benefit children with lower fitness levels as the activities in these interventions are potentially more accessible and inclusive compared to structured sports (Barton et al., 2015). Therefore, NBL can be a tool for practitioners to engage with children of all activity levels and abilities by utilizing the many functions the natural environment offers (Barton et al., 2015; MacQuarrie et al., 2015).

Encouraging a child to explore nature is critical for their healthy development and well-being (Louv, 2008; Murray, 2018; Guardino, 2019). By providing a rich, complex environment like a forest or wooded area, different types of play are demonstrated and experienced (Fjørtoft, 2004). Specifically, functional (i.e., gross motor activities such as running, jumping, and climbing), symbolic (i.e., playing with others and role play), and construction play (i.e., building and creating with loose parts), which often takes place in different settings within a standard school setting, are all simultaneously encouraged in the natural environment (Fjørtoft, 2004). A program like NBL

can offer an opportunity for students to engage with nature and develop positive perceptions of the environment (Guardino, 2019). Moreover, children with developmental impairments are more behaviourally engaged outdoors, suggesting an enhanced benefit for these children (Guardino, 2019). The natural environment may also have restorative effects by positively affecting mood and anger, which may benefit children with diverse behaviour patterns when used as a learning environment (Roe, 2011). In a review of nature and learning, Kuo et al. (2019) found that nature may improve attention, decrease stress, enhance interest, and create opportunities for physical activity, which may benefit learning. The authors impress that nature should be considered a learning resource (Kuo et al., 2019). Creating an engaging educational experience in a naturally restoring space can impact children across populations and promote healthy development and well-being.

Nature-based programs can positively impact academic performance, which may create a ripple effect as education and childhood experiences, both social determinants of health, can affect health later in life (Mikkonen & Raphael, 2010). In an American study, Camasso et al. (2018) employed an experimental design to demonstrate the potential of the natural environment as a learning space for children living in underserved neighbourhoods. An outcome of the program was an improvement in academic performance, as children in the intervention outperformed the control group, specifically in science where findings were statistically significant (Camasso et al., 2018). Similarly, a recent study in Australia looked at the effect of a nature-based classroom on the behaviour and learning of young people (ages 13-14 years) from an underserved community and found that students were also more engaged in the outdoor classroom compared to a standard classroom (Francis Norwood et al., 2021). By implementing NBL programs in different schools, administrators can provide a rich and engaging educational experience with the potential to set

learners up for academic success, despite other external circumstances and disadvantages (Stipek, 2001).

Healthy development through the exploration of risk and power in natural environments

Although once popular, nature-based play has decreased as fears over safety regarding traffic and strangers have increased in recent decades (O'Brien, 2009). However, early childhood is an ideal period to bring young children outdoors as this is a period where they develop substantial cognitive, physical and socio-emotional skills, and an awareness of the world around them (McLeod, 2018). A study in Canada took a unique look into children's experiences in a NBL program, known as Forest Kindergarten, by examining how risk is perceived by children (Coe, 2017). They found that Forest Kindergarten safely engaged children in risk-taking activities and gave them the opportunity to learn and grow (Coe, 2017). Coe (2017) commented on the decreasing amount of time Canadian children spend outdoors overall, and with that, a decrease in the opportunity for safer risk-taking opportunities. Implementing NBL in Canadian early education can be a safer opportunity for children to experience risk, while avoiding uncertain situations (i.e., traffic and strangers) that parents may fear.

Risk and power are interconnected. An individual asserts their power in determining their risk tolerance, which is an experience that can contribute to the development of personal accountability (Haywood-Bird, 2016). Not only can the natural environment help children understand risk (as distinct from a hazard), it can also help them understand "appropriate risks", fostering resiliency and flexibility which are important skills to develop in childhood (Haywood-Bird, 2016, p.1015; Berger & Lahad, 2009). The natural environment provides young children with the opportunity to explore agency and power in a "risk-rich" learning environment (Haywood-Bird, 2016; MacQuarrie et al, 2015, p.14). Providing safe risk-taking opportunities for

children is important as risk “is an inescapable part of life and of interacting with the world” (Coe, 2017, p.386). Haywood-Bird (2016) observed young children in an outdoor classroom to understand how they experience the natural environment, noting how the agency of the children developed as they interacted with others and the environment. Trading the “scaffolding” (Haywood-Bird, 2016, p.1015), or safely structured, nature of current educational practices for a NBL program has the potential to teach children more than just the curriculum objectives, it may also contribute to their own personal development and preparedness for their adult-years (Coe, 2017).

A practitioners’ perspective of nature-based learning

NBL is a flexible, child-led, experience that affords many venues for children to learn and develop. This format should be encouraged by practitioners and policy makers (MacQuarrie et al., 2015). The traditional classroom may restrain a child’s learning and development by limiting their experiences with fluid landscapes, like the outdoors, that encourage exploration, creativity, and risk taking (Coe, 2017). Practitioners may actively avoid taking their young learners outdoors for many reasons, such as safety and pressure to attain curriculum objectives (Copeland et al., 2012). However, previous practitioner experiences show great enthusiasm for NBL and these practitioners eager to share their experiences with others (MacQuarrie et al., 2015). In a study based on a Forest School program, practitioners observed many benefits for their students such as an increased self-esteem, improved social skills, language and communication skill development, improved motivation and concentration, enhanced knowledge and understanding, and better motors skills (O’Brien, 2009). It has been suggested that the use of the natural environment for teaching not only benefits children, but it can also improve a practitioner’s well-being (Cosgriff,

2017). Reflecting on the experiences of other practitioners may encourage uptake by new practitioners, positively impacting the experiences of their students and themselves.

As explained above, a focus on conventional academics and safety concerns may be large barriers for the implementation of NBL programs in early education settings (Copeland et al., 2012). To encourage these programs, NBL advocates can begin by changing practitioners' and parents' perception of risk for their young children (Coe, 2017). MacQuarrie et al. (2015) also highlight the importance of engaging with parents to gain their support and address any program concerns they may have. From a research perspective, by creating research initiatives that unpack the strengths of NBL, academic researchers can support current and future practitioners as they develop their own NBL programs. These key stakeholders act as 'gatekeepers' and decision makers for the young learners and supporting their understanding is pertinent to encourage NBL in Canadian classrooms (MacQuarrie et al., 2015).

Criticisms of nature-based learning

Despite the benefits of nature and nature-based programs for children, there are criticisms of these programs and more predominantly, the research supporting the pedagogical method. A main criticism of NBL programs is the potential for children to not achieve curriculum outcomes compared to traditional classroom settings. In a review of nature experiences and learning, Kuo et al (2019) found that nature-based programs had consistently positive effects on learning compared to traditional programs. Additionally, Meyer et al. (2017) found that nature kindergartens (a form of NBL) offered more variability for children compared to traditional programs. Despite these supportive findings, the overall quality of research regarding immersive nature experiences for children was questioned by Mygind et al. (2019). In their review of evidence, they found that the quality of evidence was uncertain (due to risk of bias, poor intervention and control groups

comparisons, self-self of intervention groups, small sample...etc.). Authors recommend that future research use randomized designs when possible and increase details when reporting findings (Mygind et al., 2019).

COVID-19 and the Impact on Natural Environment Exposure

The impact of COVID-19 on the health behaviours of Canadian children

The COVID-19 pandemic has created immense changes to the daily lives of people globally, some changes that may be detrimental for the health of young children. Unfortunately, Canadian adults experienced an increase in negative health behaviours in the early days of the pandemic as 14% reported increased alcohol consumption, 25% increased junk food consumption, and more than 60% increased screen time (Zajacova et al., 2020). Regarding Canadian children, a study on movement behaviours during the early days of the COVID-19 pandemic and restrictions, determined that only 4.8% of children and 0.6% of youth were meeting combined movement behaviour guidelines (Moore et al., 2020). Limitations on social gatherings, school and park closures, and team sport activity restrictions during the COVID-19 pandemic have significantly reduced opportunities for children and youth to play and move and may have contributed to the observed decrease in the number of children and youth meeting the movement guidelines (previously ~15%; ParticipACTION, 2020; Mitra et al., 2020). However, some Canadian children and youth are still achieving moderate-to-vigorous activity according to the Canadian guidelines (i.e. ≥ 60 min of MVPA, at least six days of the week; Mitra et al., 2020). And more significantly, children and youth that increased their outdoor activity during this time, were more likely to be a part of the group meeting those guidelines (Mitra et al., 2020). Given that physical activity contributes to physical and mental health for children and youth, encouraging outdoor activity

during times of crisis should be prioritized as a means of increasing physical movement (ParticipACTION, 2020; Mitra et al. 2020).

Utilizing the natural environment during high stress events

Embracing the outdoors or natural environment for physical activity amid a global public health crisis, specifically one that limits indoor activity, may be a beneficial health intervention. Outdoor spaces, such as parks, have been shown as an important setting for people to ‘escape’ during times of crisis (Rung et al., 2011). These outdoor spaces can serve as mediators to reducing stress by improving autonomic recovery and aiding coping mechanisms (Brown et al., 2013). “Lockdowns” put in place around the world appear to have greatly increased people’s utilization of the natural environment or outdoor spaces (CTV News Calgary, 2020). However, amongst outdoor recreationalists, decreases in the frequency of outings and the distance travelled are evident, particularly in urban settings, as people are choosing to stay closer to home due to COVID-19 restrictions and guidelines (Rice et al., 2020). As an individual’s ability to cope can be improved by accessing outdoor spaces during times of stress, encouraging safe use (i.e., following the recommendations of local health officers) of the natural environment and developing strategies to increase access during times of stress may have important implications for mental health outcomes in the years following a crisis (Samuelsson et al., 2020; Rung et al., 2011; Rice et al., 2020).

Public Health Implications of Nature-Based Learning

NBL has immense potential as an education program and, as evidenced above, NBL can also positively impact childhood health and wellness, positioning it as an ideal health promotion intervention. The principles of Froebel (Tovey, 2017), an influential early educator, indicates the importance of developing a child’s relationship with the natural environment in early education to encourage activity, curiosity, and play (Murray, 2018). Moreover, the connection a child develops

with the natural environment has been suggested to be essential in a child's healthy development (Louv, 2008; Murray, 2018). Nature-based and outdoor play have many potential lasting benefits, as education and early childhood experiences, pillars of nature-based programs, are again, social determinants of health (Government of Canada, 2020). Developing a program, such as NBL, that ensures these determinants are addressed would improve a child's health and wellness, setting young learners up for success, health, and wellness later in life (Stipek, 2001).

Awareness of NBL has increased in Canada, although still new, with modest uptake prior to COVID-19. Organizations like the Child & Nature Alliance of Canada (n.d.) and their signature initiative, Forest School Canada (FSC), are working to promote NBL through research, policy, and practice in a Canadian context. Building on the limited research available is necessary to expand the pool of knowledge regarding NBL in Canada. Specifically, by exploring the program from a parent/guardian's perspective, a perspective underexplored in the literature, learnings gained can be used to inform practice and support NBL practitioners.

Disclosure: The above literature review was conducted prior to the onset of data collection and analysis. The literature reviewed served to inform the development and objectives of the study. Between my supervisor and I, it was determined that literature would not be retroactively added (aside from the criticisms section). Instead, it is included in the discussion (Chapter 6).

Chapter 3: Methods

Method and Methodology

In this study, I used Interpretive Description (ID; Thorne, Reimer Kirkham, & MacDonald-Emes, 1997) to explore the perceptions and experiences of parents with young children in NBL programs. Though originating in the nursing discipline, it has been utilized across the health sciences to develop meaningful and relevant findings to be applied in practice. As the objective of my research was to understand how parents of children in a NBL program perceived learning for their young child/ren in the natural environment, both before and during the COVID-19 pandemic, I employed ID to generate applicable findings based on parental and instructor perspectives to move the discipline forward. The research questions for my study were as follows:

- (1) How do parents and instructors perceive children's learning in the natural environment in an early childhood learning setting?
- (2) How is remote learning during the COVID-19 pandemic experienced by parents with young children registered in a nature-based kindergarten?

Interpretive Description

Interpretive Description (ID) as described by Thorne and colleagues (Thorne et al., 1997) is a method that was developed as a solution to the limited methodological options available for nursing researchers who sought to describe a phenomenon and apply the knowledge gained in a practical setting. With this understanding, ID can be an impactful method to explore the perceptions and experiences of a connected group of people in the context of a practical setting, i.e., in the case of this thesis, parents with young children in NBL programs. In recent years, ID has been adopted by other disciplines to understand the experiences of specific populations, for

example, how women with obesity experience weight stigma (Myre et al., 2020), how parents perceive free play and sport (Watchman & Spencer, 2017), how people with disabilities experience barriers and facilitators of physical activity (Chisholm, 2015), how teachers incorporate and implement a government-funded classroom management programme (Garland et al., 2018), and how best to support early-learning providers use of a healthy eating and physical activity programming (Coppola et al., 2019).

ID as a methodology is appropriate for the current investigation because it seeks to not only describe the phenomenon but develop an explanation with meaningful application implications (Thorne et al., 2004). The purpose of this study was to understand how NBL instructors and parents of children in a nature-based program perceived learning in the natural environment, before and during the COVID-19 pandemic. While I sought to explore these perspectives, a consequential outcome was to apply the knowledge gained from this study and form policy recommendations for school community stakeholders and education policy influencers in Alberta (Chapter 6). These policy recommendations were developed through the rich description of parental and instructor perspectives of NBL using themes and patterns that I drew out of the data (Thorne et al., 2004). As well, ID does not claim to generate new truths, but a “tentative truth claim” that can be understood by practitioners to inform decision-making and reasoning within the discipline (Thorne et al., 2004, p. 4). Examining the perspectives of parents and instructors allowed me to share what is known within the NBL arena, and to inform practice and decision-making (Thorne et al., 2004, p. 7). By utilizing an ID methodological approach, I aimed to promote the use of NBL in appropriate contexts, inform future program implementation for practitioners, and develop policy recommendations.

Theoretical Perspective

Thorne and colleagues (2004) assert that ID is non-categorical and flexible in nature, distinguishing it from other traditional modes of inquiry; however, it maintains a consistent philosophical foundation grounded in the work of Lincoln and Guba (1985) that recognizes there are multiple constructed realities, that these multiple realities cannot be predicted by *a priori* theory, and that the inquirer and the subjects of the study will interact and influence one another (Thorne et al., 2004). This creates an understanding of the participants' experiences and contributes to the development of meaningful practical applications (Thorne et al., 2004). This study followed the above theoretical underpinnings (Thorne et al., 2004). ID recognizes that the researcher is the "instrument" (p.75) through which the data are interpreted (Thorne, 2016). Identifying the mechanisms the researcher employs and how they are positioned about the research is important. I have explored my positioning in the Introduction (Chapter 1).

Further, I have maintained a constructivist theoretical perspective throughout the data collection and analysis process. In this, I acknowledge there are multiple realities (relativist ontology) and truths, and that knowledge is co-constructed between researcher and participant (subjectivist epistemology; Denzin & Lincoln, 2011). This is a perspective that aligns with my own constructivist perspective and the lens that I have taken for my research, as I mindfully approached my interactions and relationships with participants and their data (Mayan, 2009). In my research, this means that the findings I have developed were co-created between my participants and myself (and supervisor). During interviews, I engaged with participants, influencing how they responded to questions. Following interviews, I engaged with the data to transform raw data and create meaning based on their responses and my interpretations.

Participant Recruitment

To recruit participants, I first identified appropriate NBL programs using the following criteria: (1) program follows a nature-based model, accredited or unaccredited, where exposure to the natural environment is a program feature (e.g., children spend half the program outdoors or interacting with the natural environment); (2) program was offered to children in early childhood (0-8 years; Larimore, 2016); (3) program was offered in the 2019/2020 school year; and (4) program was located in Alberta. These criteria have undergone several iterations as this research study adapted to the changing COVID-19 context.

Using these criteria, I planned to recruit participants from many forms of NBL programs (e.g., public or private curriculum-based programs, afterschool programs, or childcare programs) across Alberta. Participants would be parents/guardians of young children and program instructors. The inclusion criteria for parent/guardian participants was as follows: (1) parent/guardian with a child registered in a NBL program in the 2019/2020 school year; (2) the child should have been in early childhood (~8 years old or younger) in the 2019/2020 school year; (3) parent/guardian with a child/ren who experienced the transition to remote learning in March 2020 (forward) during the COVID-19 pandemic; (4) parent/guardian was actively involved in the child/ren's remote learning experience during COVID-19 pandemic; and (5) parent/guardian had access to a computer, smart phone, or telephone for an extended period of time (approximately one hour) to complete the interview. Active involvement in remote learning was self-identified by the parent/guardian.

I also included instructor interviews to support the parent interview process, as the instructor interviews helped identify areas to probe and generate specific examples of program activities to include in the parent interviews. The inclusion criteria for instructors was as follows: (1) instructor taught a NBL program in the 2019/2020 school year; (2) instructor had actively

communicated with students and parents/guardians during the remote learning period during the COVID-19 pandemic; and (3) instructor had access to a computer, smart phone, or telephone for an extended period of time (approximately one hour) to complete the interview. Instructor participants were also included based on their willingness to participate in the study, their experience with NBL (i.e., if they did not have experiences leading NBL programs, they were not included), with the assumption that these participants would provide a rich perspective of a child's experiences as it related to the research questions.

Recruitment Process

Participants were purposefully recruited within existing NBL programs. Purposeful sampling is the recruitment of participants based on their ability to share their experiences of a phenomenon and contribute to the researcher's understanding of the phenomenon (Morse & Richards, 2013). First, an appropriate NBL program was identified through internet searches and my professional network. I then connected with a leader or organizer from the program to determine whether the program met the criteria for the study. During this process, six programs were identified and contacted (due to the variability in program names and structure, a total of Alberta programs is not available; 21 were represented in a survey in 2019; Child & Nature Alliance, 2019). The first 3 programs I contacted were not suitable (due to age of children, no response from instructor, and inability to assess COVID-19 experiences), but led to other connections in the NBL sphere that were capitalized upon (i.e., I was introduced to other programs that I was able to recruit from). The NBL community is small but connected, with a rich network that I leveraged for the purpose of recruitment. After the program was determined to fit the recruitment criteria, I gave the leader or organizer of the program a recruitment letter to share with appropriate parent/guardian groups. I also gave leaders an information letter and consent form (Appendix A), if they planned to interview as a program instructor. Parents and guardians were

instructed to email me (as the researcher) to volunteer for the study if they were interested. Once a parent/guardian emailed, I confirmed the potential participant's eligibility using the participant recruitment criteria. If eligible to participate, I provided the parent/guardian with an information letter (Appendix B) and a consent form to complete prior to the interview.

I planned to recruit 8-10 parents total (grouped by program) and 1-2 instructors from each program. I decided to recruit parents and instructors from the same programs to create subgroups of participants with common experiences. Gender was not used as an inclusion or exclusion criterion. The sample size was small; however, I felt this would serve to answer my research question depending on the quality of informants. Quality of informants was determined based on their ability to share their perspective of their child/ren's learning in natural spaces, describing the phenomenon of interest (Thorne, 2016). If I felt information was missed in the data collection, I was prepared to recruit more parents to help me answer the research questions and develop a rich description of the phenomena. However, saturation was not the aim of my recruitment. Thorne (2016) suggests that 'data saturation' has somewhat limited applicability in applied settings and in ID research studies. Therefore, smaller studies such as this one, can set low sample sizes, while acknowledging that there are likely many different perspectives that have not been sampled or explored. With that, these other perspectives may include: other programs not recruited from, different parental/guardian perspectives or characteristics from the ones recruited, or parents with barriers due to contextual factors (both related to and outside of the COVID-19 pandemic). "Theoretical outliers" which are "additional cases [that] might have shed light in the aspects of the phenomenon that [I] have not been able to see in [my] data" (Thorne, 2016, p.179) were explored between myself, a critical friend and my supervisor, to understand who may not be in the sample

and what they could have contributed (McPherson & Thorne, 2006). This is documented in the Limitations section (Chapter 6).

The recruitment period was lengthy (March 2021 – July 2021), as I contacted potential programs, took time to understand the program and interview instructors, and then recruited parents. Recruitment was slow for the first program (Program A) and I was unable to recruit any parents from the second instructor’s program (Program B). There were likely contextual factors that limited recruitment (e.g., school year schedule, COVID-19 pandemic restraints or stressors, normal parenting considerations). There were also only two parents/guardians from the second instructor’s program that were appropriate for the study criteria; this is a very small recruitment pool for this program.

Sample Characteristics

By the end of my recruitment, I had recruited 3 instructors and 10 parents/guardians across 3 programs: 13 participants overall, (4 from Program A, 1 from Program B, and 8 from Program C). Of note, one instructor was recruited and interviewed from a Program B, the program where I was unable to recruit parents or guardians. This instructor’s interview was incorporated in the analysis and allowed for comparison across the experiences of instructors. Though there were no parent interviews connected to this instructor, their interview was analyzed as a unit of data analysis and contributed to findings. The majority of participants self-identified as female (n=12); the only male in the study was an instructor. Instructors’ ages ranged from 38-45 years old (average age: 40.7 years) and parents’ ages from 36-44 (average age: 39.6 years). All parents (n=10) identified as the child’s parent; therefore, parent participants will be referred to as ‘parents’ for the remainder of the thesis. Some instructors held education degrees and one taught a curriculum-based program, others led private, for-profit nature-based programs; therefore, all instructors will

be referred to as ‘instructors’, rather than teachers to avoid confusion. All of the parents were legally married and the majority had post-secondary education (n=9; i.e., Bachelor’s and Master’s degrees). All three instructors were highly experienced, reporting 15+ years of teaching experience (this was not limited to the role of “teacher” within a standard school setting; e.g., included guiding experience), and all had taken or were taking professional development opportunities associated with NBL and programming. The majority of parent participants lived in a single-detached house (n=9) and all reported outdoor spaces at their residence and within walking distance from their residence. The homogeneity in my sample may be due to issues with the sampling method, contextual factors, or may be indicative of the demographic characteristics of the included programs overall. Similarly, in a study of parental perceptions of changes in nature connection for their children, the sample was found to be affluent and ethnically homogenous (Friedmen et al., 2021).

Environment

Three NBL programs were recruited from for this study. However, only two programs had parents who were available for interviews (Programs A & C). All three programs were located in Alberta: the first, in a town located in the Rocky Mountains (Program A), the second, in a county near a centrally-located, prairie city (Program B), and the third, in a centrally-located, prairie city (Program C). All three programs have natural spaces nearby that helped facilitate the program. Two programs (Programs A & B) were after-school or out-of-school programs and the third was a kindergarten program affiliated with a large public school district (Program C). The median family income in the town where the first program (Program A) was located was \$115,000 (rounded), increasing 9.38% in the last five years; population was ~14,400 in 2019 (Government

of Alberta, 2022). The median family income in the county suburb where the second program (Program B) took place was \$136,000 (rounded), increasing 1.56% in the last five years; population was ~69,000 in 2019 (Government of Alberta, 2022). And the median family income in the city where the third program (Program C) was located was \$105,000 (rounded), increasing 2.11% in the last five years; population was ~1,300,000 (Government of Alberta).

Exploratory Phase

Prior to the data collection procedure outlined below, I engaged with a local nature-based kindergarten through my personal network to gain insight into how these programs are organized and the daily experiences of these types of programs. This kindergarten program developed in the 2019/2020 school year, and I had initially planned to conduct my research with this class, the participants of which would have been the children and instructor of this program. Again, I was connected to the instructor through my personal network, which facilitated meaningful relationship building and led to rich discussions on her experience developing this nature-based kindergarten design. My interest in learning for children in NBL programs is based on the apparent gap in the literature, as well as this exploratory experience and my conversations with the program instructor. I spent time volunteering with the class, observing their daily interactions and activities to immerse myself in the nature-based program. This experience provided me with clarity and a direction for my overall research. Although the design of the original study pivoted to accommodate the rapidly changing context due to the COVID-19 pandemic, the original focus of learning for young children has remained a constant and stems from this initial exploration.

Data Collection

To develop a comprehensive description of the phenomena and avoid an overreliance on one type of data (Sandelowski, 2002), I used multiple data sources to explore the area of interest to capture meaningful descriptions of participant's experiential knowledge (Thorne et al., 2004). The perceptions captured enabled me to develop themes and patterns that can be applied to inform NBL policy and practice (Thorne et al., 2004). Three data sources were utilized to explore parental perceptions of NBL and their experiences of remote learning during the COVID-19 pandemic: (i) instructor semi-structured interviews, (ii) parent semi-structured interviews, and (iii) critical reflective journaling. Parent semi-structured interviews were the primary source of data, with instructor semi-structured interviews, and critical reflective journaling used to support this primary strategy.

Data Collection Strategies

Instructor semi-structured interviews

Instructor interviews were included to gain an understanding of the nature-based programs and learning for children from the instructors' perspective. This allowed for refinement of the parent semi-structured interview guide and provided contextual (e.g., organization and principles of the program) and experiential (e.g., their observations from within the program) knowledge. I also explored the instructors' perspectives of the remote learning experience, probing specifically to understand how they interacted with parents during the remote learning period and their observations of the experience for parents. A semi-structured interview guide framed the inquiry and was developed based on the knowledge I had gained in the exploratory phase and under the guidance of my supervisory committee. The time spent interacting with a nature-based program

has generated an understanding of these programs. This understanding was used to develop questions that I felt appropriately explored the phenomenon and generated detailed answers from participants (Morse & Richards, 2013). A semi-structured format allowed me to prepare an organized inquiry, while creating space for unplanned probes to explore the instructors' responses (Morse & Richards, 2013). The interview guide included the following sections: (a) personal information, (b) perceptions of parental understandings of learning in the natural environment, and (c) perceptions of parental homeschooling experience during COVID-19 pandemic (see Appendix C for interview guide).

Due to COVID-19 restrictions, instructor interviews were conducted via virtual meeting or by telephone in spring 2021. While telephone interviews are not an ideal method for interview data collection as it removes the nuances in body language and other physical forms of communication and increases the need for equipment, among others reasons (Burnard, 1994), in-person interviews were not possible due to public health restrictions related to the COVID-19 pandemic. To address these limitations, I increased pre-interview contact with participants over e-mail and preliminary phone calls to establish a relationship prior to the interview (Rubin & Rubin, 2004). The semi-structured interview guide was trialed twice to allow for refinement: I recruited two test participants who were familiar with the purpose of the study and had relevant experience (e.g., teaching experience). The interview guide was refined following these test interviews.

Parent semi-structured interviews

Parent interviews followed the corresponding instructor interview. One parent per family was recruited to discuss their experiences to create space for multiple perspectives in the data collection. No gender was specified in the recruitment criterion (i.e., a parent of any gender was eligible for interviews). Again, and similar to instructor interviews, due to COVID-19 restrictions,

parent interviews were conducted via virtual meetings or telephone calls in spring and summer 2021. The semi-structured interview guide was informed by the instructor interviews as this contributed contextual knowledge and a reflective account of the experience of NBL programs and the experience of remote learning. Semi-structure interview guides allowed me to prepare specific questions while leaving room for flexibility in the delivery of questions and probes (Morse & Richards, 2013). The semi-structured interview guide included: (a) personal information, (b) perceptions of learning in the natural environment for their child, (c) personal perspective of and experience in the natural environment, and (d) remote learning experiences during COVID-19 pandemic (see interview guide in Appendix D). Parent semi-structured interview guides were trialed twice prior to data collection; test participants were familiar with the purpose of the study and were parents with young children. The interview guide was refined following these test interviews.

Critical reflective journaling

Critical reflective journaling was maintained throughout data collection and analysis. My reflective journal consisted of personal reflections that I recorded during the research process and immediately following interviews, a process that meaningfully contributed to the conceptualizations of ideas and themes (Thorne, 2016) The journal documented the process of how I reached my analytic conceptualizations and understandings, which I reviewed in the analysis process (Thorne, 2016). The journal also created a space for self-reflection of my personal assumptions and beliefs during the research process (Ortlipp, 2008). This journal also acted as an audit trail for my research study, tracking changes to the methodology and analysis, fostering transparency in the research study (Ortlipp, 2008).

Interviewing process

The semi-structured interview guides contained multiple sections of open-ended questions. Open-ended questions encouraged participants to discuss their perceptions of the phenomenon in their own words (Rubin & Rubin, 2004). Semi-structured interviews were drafted to take approximately one hour. All semi-structured interviews were audio-recorded and transcribed verbatim for data analysis, according to the process suggested by Morse & Richards (2013). Interview transcripts were not sent to participants unless requested (none were requested). Instead Thorne et al. (1997) recommends that member checks occur as conceptualization begins to happen. Although I did not conduct follow-up interviews, by presenting ideas and preliminary conceptualizations during and at the end of each interview (e.g., I asked specifically about contextual knowledge as I developed this idea: “Learning seems to be connected to the specific environment you live in – the Canadian Rockies – does this sound accurate or is it connected to something else?”) I made an attempt to confirm that the ideas and concepts that formed from the individual interviews, and any that built from previous interviews, were reflective of participant’s perspectives. After data analysis was complete, I developed a knowledge translation tool in the form of a children’s storybook to share my findings back with the participants. I asked participants for feedback on the content of the storybook as a member check that focused on the overarching themes derived from the data collection. I received three responses that provided general feedback regarding the specifics of the program (i.e., their program teaches how plants and seeds can be used for healing purposes and that some learning takes place inside though still features natural items like pelts). After the study has been defended, the storybook will be shared with other school communities and the larger education community to promote NBL in Alberta.

Although ideas began to repeat and patterns emerged during the interview process, I did not seek data saturation during the process. As noted above, data saturation is not a focus in ID, as it is a method that recognizes there are an infinite number of experiences, each unique (Thompson Burdine et al., 2020). Therefore, looking for the same opinions, perceptions, and feelings, is not as meaningful as understanding each participant's experience and appreciating outliers (Thompson Burdine et al., 2020).

Data Analysis

Data collection and preliminary data analysis were concurrent, involving memoing and the early conceptualization of ideas and concepts. However, the majority of the data analysis occurred after data collection. While ID is a flexible and non-prescriptive methodology that allows for multiple analysis strategies to be considered, Thorne (1997) warns against the use of deductive analytic methods when undertaking ID. Instead, she recommends an inductive analytic method that asks, "what is happening here?" and "what am I learning about this?" (p.174) steering the researcher away from the overly technical analysis towards "coherent analytic frameworks" (p.174) (Thorne, 1997). A specific analytic method is not identified for ID; however, Thorne et al. (1997) recommends a method that focuses on synthesizing, theorizing, and re-contextualizing with immersion in the data prior to the coding process (Morse, 1994).

Based on advice from my committee, I followed Thematic Analysis (TA) as described by Braun and Clarke (2006), supported by constant comparison strategies (Glazer & Strauss, 1967) to identify patterns across the data set, and then compared the data to understand the similarities and differences between individual participants and participant groups. Thematic analysis has been used in many other ID studies (Kalengayi et al., 2012; Stevenson et al., 2015; McCall et al., 2019).

The method identifies, analyzes, and reports themes in the data, but is also flexible and aligns with the constructivist paradigms of ID (Braun & Clarke, 2006). Due to the nature of my data set (two different NBL programs with different structures, locations, and values) a comparison of the similarities and differences between participant groups added value to my research design. Constant comparison is a strategy that was borrowed from grounded theory and was used to compare all the data units (i.e., all the participant interviews, parent and instructor) against one another, allowing me to go across the data set to understand similarities and differences that I interpreted between participant groups. (Glaser & Strauss, 1967). I approached all 13 transcripts (and one email correspondence)¹ as a separate unit of analysis, coding and theming each transcript, following the six phases as described by Braun and Clarke (2006): (1) “familiarizing yourself with your data”, (2) “generating initial codes”, (3) “searching for themes”, (4) “reviewing themes”, (5) “defining and naming themes”, and (6) “producing the report” (p.87).

The data corpus and data set in my study are the same, however one section of the interview data related to my first research question and the second section related to my second research question. The first question focused specifically on the parental perspective of learning for young children in the program; therefore, learning and what may constitute learning for young children guided the analysis of the first section. This is due to an understanding of the current state of the knowledge regarding NBL. The second section of the interview guide was an exploration of the parents’ experience of remote learning during the COVID-19 pandemic. I approached this without prior knowledge due to the limitations of academic literature at the time, excluding anecdotal experiences.

¹ *One participant (P11) followed up after our interview with additional thoughts in an email correspondence. I include the analysis of this email with the analysis of her interview transcripts.*

Analysis began after each interview, where I recorded thoughts and understandings gleaned during the interview. This was in the form of field notes (i.e., observations from interviews) and my reflective journal (i.e., my own thoughts, interpretations, and initial analytic processing; Ortlipp, 2008; Thorne, 2016). This process allowed for concurrent refinement of my analytic questions and preliminary engagement with the data to deepen my understanding. I immersed myself in the data through transcribing interviews, listening to audio recordings repeatedly, and reading and re-reading the transcripts, which aligns with recommendations for qualitative research (Thorne, 2016; Braun & Clarke, 2006). During this immersion, memoing was used to note ideas and concepts, and make connections or ask questions about the data, codes, or potential themes (Mayan, 2009). Codes were developed through an inductive process of comprehending data, synthesizing, and theorizing relationships that resulted in a rich interpretation based on the perceptions of the parents and instructors (Thorne et al., 2004). My analysis was both inductive and data-driven, without a theory shaping the analysis, aligning with the philosophical foundation of ID (Braun & Clarke, 2006; Thorne et al., 2004). Codes were general and allowed me the opportunity to further connect with the data, familiarize myself, and begin to organize (Mayan, 2009). Codes were grouped into potential themes (Braun & Clarke, 2006). Once I established and reviewed working themes for each unit of analysis, constant comparison (Glazer & Strauss, 1967) was implemented as a strategy to review and compare the themes against one another. I used a virtual platform (Miro) to visualize this process. Themes without significant support or limited connectedness were removed or merged into other themes as appropriate. This process resulted in five themes for the first research question and five themes for the second. As a part of the fourth phase of TA (Braun & Clarke, 2006), I reviewed themes against the coded data extracts within each theme to ensure they were connected by a pattern and then re-read transcripts to understand

whether themes were accurate in relation to the data set and participant experiences (Braun & Clarke, 2006). At this point, internal (data extracts and codes within a group should be connected) and external (themes should be clearly differentiated from one another) homogeneity was also reviewed (Patton, 2015; Mayan, 2009).

Further refinement of the themes and consultation with my supervisor and a critical friend resulted in four overarching themes for each research question with various sub-themes to organize large themes (Mayan, 2009; Thorne, 2016). Thorne (2016) encourages engaging a ‘critic’ to invite critique of the analysis. “[By] capitalizing on the tensions arising from the way other people might read the data” (p.180) I was able to understand other interpretations of the data, while growing confident in my own analysis and findings. The critical friend or peer review played an important role throughout my process to confirm or challenge my interpretations and offer alternative perspectives while working with the data (Coghlan & Brydon-Miller, 2014).

Thematic maps (final versions are located in Appendix E) were generated for each unit of analysis and following the initial constant comparison stage to understand patterns in the data and the connections between themes (Braun & Clarke, 2006). Map refinement occurred in parallel to theme refinement and defining. In the final phase, I developed a report of my findings (‘Findings’: Chapters 4 & 5). The report tells a story of the data and demonstrates credibility and provides evidence (data extracts) that “compellingly illustrates the story” (Braun & Clark, 2006, p.93) of the data.

Constant comparison occurred both on the virtual platform (Miro) and as I wrote the report. As I went back to my transcripts to re-read and retrieve data extracts to support my themes, I was still developing and refining the comparison between participants. This was also a second opportunity to confirm my themes against the data set. As reviewed, I noted similarities or

differences through: (i) noting whether participants were from Program A vs. C, (ii) noticing any nuances in experience given the different types of programs that the children were enrolled in (for profit, after school program vs. a public-school kindergarten), (iii) remaining cognizant of the location (small, mountain town vs. large urban metropolis), and (iv) recognizing potential differences in income: while all parents had a two-parent household, some were single income households (one parent was a stay at home parent) or more than one child households.

Interpretive Description embraces the idea that these initial ideas should be tested and challenged, which allowed me to move past any underlying ideas or assumptions I had about my research (Thorne, 2004). This added richness to the analysis and contributed a new understanding of NBL beyond what was known previously (Thorne, 2004).

Rigour

Rigour was ensured in my data collection and analysis primarily using an audit trail and peer debriefing, as well as presenting the complexities of the data in an open manner (Thorne et al., 2004; Mayan, 2009).

During the interview process, I actively synthesized my understanding of participants' experiences by clarifying and summarizing their responses, and following preliminary data analysis (Mayan, 2009). I also created a knowledge translation tool to share findings with participants and requested feedback, if any. These strategies were not intended to explicitly act as traditional member checks, instead they complemented my preliminary analysis. Thorne (2016) does not recommend member checks as responses can alter or incorrectly confirm interpretations; she emphasizes the role of the researcher as an "interpretive instrument capable of making sense among cases to uncover insights" (p.176). Therefore, this engagement and re-engagement had potential to expand my understandings during preliminary analysis (Thorne, 2016). Unfortunately,

the tool elicited only a few responses (potentially due to the time that had passed), which limited impact on analysis.

I kept an audit trail to document all decisions made during the research process and the development of abstractions from the data, which can be used to defend an analysis (i.e., critical reflective journaling, memoing; Mayan, 2009). I have employed multiple sources in this study design, as recommended by Thorne et al. (1997) to add strength to the data collection while ensuring credibility and dependability through triangulation (Patton, 2015). Peer review or the recruitment of a critical friend generated extensive discussion of the research process with a critical and supportive peer. This perspective encouraged my own reflexivity through the addition of an outsider's view of the data and participants (Mayan, 2009; Coghlan & Brydon-Miller, 2014). Finally, by presenting the data in an open manner, I acknowledge that the conclusions that I drew from the data and my analysis are tentative, lending credibility to the study design (Thorne et al., 2004).

Ethics

Research with human participants requires careful ethical considerations. This is especially true when working within a school environment. The application process ensured that I planned and prepared all areas of the study appropriately. Strategies were implemented to ensure anonymity in the results such as removal of personal identifiers in the transcripts. Each participant was given a participant number after their interview; a master list of all participants was (and is currently) kept in a secure file. Again, due to the unique context of this study, field notes and audio recordings have been secured on an encrypted file on a password protected computer. These electronic files are saved to a University of Alberta owned share drive with restricted access. Handwritten notes were secured in a locked cabinet in my home as well. All data will be destroyed

after five years; following defense, electronic files will be erased and handwritten notes will be securely destroyed.

Due to the COVID-19 pandemic and the guidelines concerning research at the University of Alberta (COVID-19 Response Guide for University Researchers and Research Groups), interviews were conducted via phone or Zoom, instead of in-person. Considering the telephone format, undue pressure that may be experienced in-person may have been reduced. Participants were told they could skip or come back to any question that they were not ready to answer. I also gave participants the options to split the one-hour interview into two sessions to increase accessibility (one participant chose this option). Considering the topic of the interviews (homeschooling during COVID-19), there was the potential that participants could become distressed during interviews. There were two instances when participants became distressed. In these situations, I offered to move on or end the interview (neither were selected). I connected all participants with mental health resources following interviews.

This project was approved by the University of Alberta Research Ethics Board (REB). With modifications to the research design and several REB amendments (due to COVID-19), the project was revised and approved. The project ID number is Pro00097059, University of Alberta, and was initially approved March 11, 2020. The final amendment (Pro00097059_AME7) was approved January 31, 2022.

Chapter 4: Findings – Parental and Instructor Perceptions of Learning in the Natural Environment for Young Children

While I have identified themes and sub-themes from the data set, Thorne (2016) recommends two strategies for sharing ID findings, one details creating a ‘conceptual claim’ for the findings that identifies a broad theme to encapsulate my findings and situate them within the applied context. The conceptual claim becomes a structure to organize ideas that are shared within the report of findings, “to understand the whole” (Thorne, 2016, p.200). I have identified two conceptual claims for this study to accommodate the separate findings for each research question, presented in Chapters 4 and 5 respectively. My conceptual claims organize my findings, while demonstrating how they are connected to a larger picture. This chapter focuses on the first research question:

How do parents and instructors perceive children’s learning in the natural environment in an early childhood learning setting?

Based on my analysis, I have created a conceptual claim that summarizes the themes developed from my data set to answer this research question:

Parents and instructors in the program felt that children gained beneficial knowledge and skills which fostered an impactful, healthy childhood experience. However, what became even clearer was the impact of this program on the parents themselves and their community, as it generated socially cohesive behaviour, deepened connections to the outdoors and others, and developed their own knowledge of nature spaces. This situates NBL as a community health promotion intervention that benefits the child, the family, the school community and larger community, and the natural environment. The influence on the

multiple spheres and the connections between spheres, position a program that includes NBL to be beneficial for many types of communities.

Study Findings

The above research question was developed with the general interest of understanding parental and instructor perceptions of learning in the natural environment for their children. This question was also created in the context of the current lack of knowledge in this area, the feasibility of the study design in light of COVID-19 restrictions, discussions with a local NBL instructor, and direction from my supervisory committee. However, as I collected data, the first question resulted in tensions between “what is it that I want to know” and “what are the data telling me” (Srivastava & Hopwood, 2009, p.79). I was initially interested in parents’ thoughts and feelings regarding their child’s experience with the program, but it became clear during interviews how much of an impact the program had on the parents. Although this was not within the scope of the initial research question, this finding has become an important part of the story that I would like to tell. By expanding the idea of what learning was in this study (i.e., to include parent learning), the benefits of NBL can stretch beyond the children to the parents and their community which has implications for health and wellbeing at many different levels.

From my analysis, I developed four themes based on my own understanding of the data and context:

- (1) Nature-Based Learning: A Foundation for Learning;
- (2) Natural Spaces for Health and Mental Health Development;
- (3) Community Building; and
- (4) Capacity Building.

These themes are detailed below.

1. Nature-Based Learning: A Foundation for Learning

Closely aligning with the original intention of the first research question, which was focused on understanding parental and instructor perceptions of learning for young children in natural spaces, participants reported positive perspectives of the NBL program that their children attended. While there may be some perceptions in the education discipline or parenting circles around the idea that children may be missing out academically in this program, none of the parents reported this. Instead most felt they had gained far more. In particular, parents felt that the program prepared children for their learning career through child-led explorations of the environment, engendering an eagerness and independence that the child did not have previously. Nature spaces naturally afford challenging or complex learning experiences and the ‘soft’ skills (e.g., creativity, resiliency, and teamwork) acquired from these environments. This theme will be organized by three sub-themes: (i) healthy start to learning, (ii) child-led values create independent and confident learners, and (iii) stimulating, resource-rich environment facilitates the acquisition of skills.

Healthy start to learning

Parents from across both programs touched on the preparedness for learning and a healthy start to a learning career. They described a new love for learning and exploring that their child did not have previously and an overall positive association between NBL and learning. One instructor situated nature-based programming as a “little softer, more gentle than a big school” (P6, Instructor; p.7), creating an inviting space for children. Nature spaces have many features like natural materials, ever-changing weather, and wildlife that create a unique and formative experience for children. These events create core memories for young learners that some parents observed. They

find their children still talk about the NBL experiences fondly and have retained information from the program. With this experience, children associated the outdoors with school, potentially setting the foundation for their learning career, and according to one parent, “as [their child’s first sort of more formal learning experience... it put a positive spin on the experience of like school and learning” (P12; p.3). This was particularly beneficial for children who did not like school to begin with or who may have been more nervous to attend school:

Um, yeah so he’s never been like super excited to go to school every day but he definitely was, so um, so like there in that kind of a program where they really, well like respected and I don’t know how to say it, well I guess like his interests, they took them and ran with them, instead of like kind of making the kids kind of conform into the way that they wanted them to learn, like they kind of took the kids unique interests and built the program around that and like celebrate their interests and their differences and stuff (P9; p.1).

This parent felt strongly that the program let their child “blossom” (P9; p.2). They also felt “that love of learning...loving going to school...[was] the biggest thing that [their child] got, ...[they] went into grade one all fired up about school” (P9; p.3). It contributed to an overall sense of readiness for school for many other parents that I interviewed. A few parents felt that their child now had motivation and a desire to learn, and went into the following school year with a positive attitude.

Cultivating a love for learning was generated through nature spaces as the spaces fostered natural curiosity for children in the programs. A few parents from both programs felt that learning in natural spaces created opportunities for curiosity. One parent found that the experience instilled hope for future learning: “I hope that they feel they can be curious and ask questions and be like an active participant in their learning” (P5; p.5). In the outdoor environment, children were able to

explore and “act on learning more based on that curiosity” (P10; p.3). Exploring the natural environment also increased physical activity, which some parents mentioned as an important component of the program.

The natural environment utilized in these programs also created unique opportunities for embedded learning. Instructors followed the flow of learning in their program to incorporate learning in ways that are not associated with traditional learning and created an excitement for learning:

I think they would just kind of incorporate learning into their day, just depending on what they were doing, um you know counting, like you know “oh okay, here’s a lady bug, how many dots can you count?”, right. So just incorporating the learning into their day with whatever activities they were doing out in nature (P8; p.2).

Another parent from the first program said: “[w]hat I loved hearing from him that he wasn’t necessarily aware of, was that they were learning, because to him it was just games, [but I could see] ... different snippets of information that he had sort of soaked up” (P3; p.1).

According to some parents and instructors, NBL programs offer a healthy start learning for children, by establishing a gentler environment, that allowed for exploration and curiosity.

Child-led values create independent and confident learners

Across all interviews, the idea that in these outdoor spaces children were able to creatively and intuitively create their own learning opportunities was observed by parents. Children were described as more confident, autonomous learners. In all three nature-based programs, I was able to speak with instructors who both taught and founded the program. They were able to share insight as to how and why they developed their program, their child-led or inquiry-based pedagogical values, and the impact they observed of this on children. All three instructors discussed the

importance of following the interests of the children throughout their activities, and how the day was guided by these interests. One instructor explained this idea:

What project we pick up starts with what they are exploring, and what they are interested in, whether it be creating water pathways and river systems or you know curious about the different animals that they are encountering in the park when they are out there, those dictate the kinds of projects we take and how we tie the curriculum into it (P6, Instructor; p.2).

And over the course of the program, instructors witnessed the growth of their students. They saw children who were once afraid or unsure of the natural environment embrace the space with their independence and confidence:

And I see it every day, one child will go up on a log and stand up on a log, with both his arms up in the air and be like, “this is great”. And then another child goes up on the log and they’re on all fours and see them looking around, not really sure what’s happening And yet, over the course of the year, the child that was crawling on the log and seemed to be a little bit afraid, um, they will naturally push themselves to the point where they become comfortable there.... Um, but again, it is not because I told them to, or set an objective that I want to make sure that that child can jump off a log by the time they finish six months of [blinded], um they just do it (P1, Instructor; p.8).

This instructor also described how the environment encouraged this curiosity and independence. In the program, the children are given the space to explore their “edges” as this instructor (P1) refers to: they can push themselves to the limits of their comfort zone, and with instructor support gradually shift their “edge”. While this was not an explicit goal, the program (Program A) created opportunities for this growth naturally, which are then celebrated. Children’s autonomy is

enhanced through risky play and exploration of boundaries in the space. The freeing environment these programs provide promotes curiosity through autonomy, which encouraged children to explore their own interests. This created independent learners who were excited about the program and were confident and self-assured, according to participants. Developing these independent learners was described as the main objective for one of the instructors (P2). NBL programs develop children who “can come up with their own ideas, solve their own problems, they can work their way through challenges, including boredom, umm, and that’s something that were not really seeing in the mainstream.” (P1, Instructor; p.9). The child-led nature of the program allows children the opportunity to explore “their interests and ...[learn] based on their interests” (P8; p.5). Further, parents across both programs saw these benefits for their children. Many parents observed their young learners start to push themselves both inside and outside of the program, particularly in their physical abilities, which some parents felt translated to other activities, enhancing their child’s confidence. One parent asserted that, “[b]ecause there was more opportunities to, for [her child] to speak up on his needs and interests and to listen to the other kids and what their needs and interests were, [and]...before, he didn’t really get that chance or that wasn’t encouraged it was more just like listening to what the teacher was saying...I think it built his confidence” (P9; p.3).

Over the course of the year, the opportunity to follow their own interests, building confidence in themselves translated to skills that parents were surprised by, like leadership:

In his little end of the year report from the teacher, like she talked about him being like a leader in class and you know up until, like in pre-school and stuff he would kind of like hang back, like he was definitely not that kind of person, so I don’t know it just kind of seemed like he just blossomed in that kind of program (P9; p.3/4).

The child-led aspect of the program created the space for an alternative learning style, a style that promoted exploration, discovery, and the “opportunities for children to think outside the box” (P6, Instructor; p.1). One parent was able to compare the experience of their child-led, nature-based program with an academically focused program that their child had been registered in previously:

[S]he ended up in a school that was like really academic focused and a lot of sit down and learn which had not at all been what I wanted for her... I think at the pre-school there was such a heavy focus on sitting down and doing worksheets and getting right answers and colouring in the right colours and all those sort of things, that I really desperately wanted to show her that no, actually learning can look like lots of different things, and this is also what schooling and learning can look like in totally different arena that allows for so much more like play and freedom (P13; p.3/4).

This same parent was able to reflect on this experience and very clearly elaborated that “traditional school settings can kind of quash down a lot of that exploratory nature, and curiosity, and the freedom to be wrong and the freedom to fail... I felt nature kindergarten really, helped expose [her child] to that” (P13; p.4). This freedom to explore and gain independence is a strength of the program that most parents discussed.

The NBL programs that I recruited from emphasized child-led exploration in their design. Participants felt that this child-led exploration of the natural environment facilitated growth, particular through newfound independence and confidence.

Stimulating, resource-rich environment facilitates the acquisition of skills

The inviting space and child-led exploration from the previous sections are components of NBLs that, when paired with the environment, created an overall foundation for learning. The

previous benefits noted are, in part, fostered because of the natural setting. While these benefits can be facilitated in other program types, the unique aspect about NBL is that nature becomes the main resource for learning.

According to participants, there is significant growth through the resources primarily found in the space. Children began uncertain and moved into a space of independence: “because the beginning of this, of this session, you know it’s a bit, kids are like, you’ll have some who get right in there and you have some that are like, “where’s the toys?”, “what is my mother doing?”, “there’s nothing here”, “what do you mean you want me to play with this stick?” (P2, Instructor, p.4). One instructor described how the natural environment is a rich learning space that naturally contains features and opportunities that other programs would normally have to create:

[Y]ou know when kids walk on uneven surfaces, when they climb over logs, because they’re motivated to do it, not because we told them to, um, they are developing their own self-efficacy, because they are able to see that they can make choice, and they can do some of these things, as well as their physical literacy, and we can try and mimic that, and we see that in a traditional, or more of a that classroom-based model, when you go into gyms and they set-up balance beams and you set-up bean bags and others things that you go over, and those are all fine, um, but the great thing about nature is, I don’t have to, I don’t have to set it up...There’s a lot of very steep hills and gullies and lots of fallen logs, soft moss, and hard ground there’s a mixture of just about everything (P1, Instructor; p.8).

Based on this, the complex and diverse environment naturally lends itself to learning for children. One parent referred to the personal or ‘soft’ skills gained by her child; these were skills that she “wouldn’t expect a child to learn in kindergarten” (P10; p.4). Across the two groups of parents I

spoke with, they all discussed these soft skills that, for them, included risk assessment, resiliency, creativity, independence, team building and cooperation, and empathy.

Tree climbing was one activity in particular that almost all the parents listed. Children loved the opportunity to challenge themselves and build confidence and explore risky play through climbing in trees. Tree climbing is an adventurous activity that capitalized on natural features to create the sense of risk for young children. It is an exciting opportunity where children, especially with supportive, knowledgeable instructors, could safely experience risk. One parent spoke about how important activities like tree climbing were for their child's development:

[A]nd that's how they build judgement skills, and it's crazy these days, like you can't let you can't let your ten-year-old go out the backdoor and play in the park by themselves, somebody will call child services, yet they turn twelve and they can legally babysit an infant and it's like where are they supposed to develop these skills? (P12; p.5).

The frustration that this parent felt toward traditional learning environments and opportunities for children was clear. This speaks to the lack of opportunity for children to build the skills offered in NBL in other early childhood opportunities. The instructor from the third program alluded to this opportunity for discovery and learning created by the environment, discoveries that "children aren't being able to access anymore because we've kind of become so afraid of well the risk that's you know, usually associated with being outside" (P6, Instructor; p.2).

Some participants felt that creating connections with others and the natural world instilled empathy in children. Parents from both programs emphasized the empathy that their child gained through the nature-based program. One instructor noted that learning in the outdoors "helps them build empathy with the environment, with the creatures, you know their peers, and teachers too when they're living it like that" (P6, Instructor, p.4). In NBL programs children could explore the

space, their limits, and had the opportunity to grow and develop while supported by an instructor, building these skills.

Instructors leveraged the existing materials to create a connection to the space, but also to utilize the resources found in the environment. Sometimes they used a mix of natural and manmade materials to develop an understanding and prompt learning in the natural environment. Parents found this enabled their children to “create what [they want] to and really get into it with [their] imagination, and explore with different tools, different materials...sort of explore” (P11; p.2). The combination of many natural and a few additional manmade materials stimulated a child’s imagination and prompted their creativity. One technique that most parents from the third program (Program C) talked about was the ‘mud kitchen’ that instructors created using kitchen supplies and the mud and clay available in the natural environment.

The connection to space offered opportunity to stroke imagination; children experienced the wind, the rain, and the sunshine, which all impacted their experience and the course of the day. The children also witnessed the interplay between the ecosystems first hand. An instructor shared a story where the children found the bones of an elk that became a tyrannosaurus rex, which got their “imagination fired up” (P1; p.13). The natural environment created this opportunity by simply connecting children with nature; it encouraged their curiosity and desire to explore. Two parents from the first program talked about a captivating day the children had in the winter, where the program took place near a frozen creek that became a slide and where they created “this whole world around this creek” (P3; p.3).

I know one of his favourite things, was when they were up at the [nature space] there’s like this culvert, like late winter, early spring it froze, they spent what sounded like quite a long

time there, like sliding, discovering things like under this culvert. I remember him talking about that like a lot (P4; p.2).

Nature-based programs leverage the natural environment to offer learning opportunities for children; according to participants, these opportunities facilitated both ‘soft’ skill and physical skill attainment.

2. Natural Spaces for Health and Mental Health Development

In early education programs, learning is more than just arithmetic and the alphabet; young learners learn how to manage themselves – physically, emotionally, and mentally. In this section, I have described the importance parents across both programs placed on nature’s role in wellbeing and mental health. There are two sub-themes to organize these findings: (i) nature and mental health; and (ii) wellbeing and development.

Nature and mental health

Chapter 2 (i.e., the literature review) detailed the benefits of nature and natural spaces on health (e.g., improved attention, wellbeing, increased physical activity). In the parent and instructor interviews, most participants identified the many ways nature impacted their children’s mental health in the respective program’s nature-based setting. In the context of the NBL natural setting, one instructor explained the benefits of nature on mental health for children:

[P]articularly for younger children, at the bare minimum, it’s going to heighten their senses, it’s going to allow their senses to waken up, because there’s so much happening outside whether it’s the feel of the wind on our face, the smell of the trees, the feel of the cold water, the, um, the sound of the birds singing, when we are outside our senses are naturally heightened, and through heightening our senses it allows us to become more grounded, so just by stepping out the door, there’s benefits (P1; Instructor; p.7).

Many parents and other instructors touched on the space being ‘grounding’. This ‘grounding’ effect of nature made it “a great medium for, and so conducive to learning” (P2, Instructor; p.14). One parent said that “nature has this calming effect” (P10; p.2); this parent continued to utilize nature while homeschooling (in the 2021 school year) by going “out on the deck and [to] read outside” (P10; p.2) to capitalize on this effect. The instructor of the third program (Program C) observed that nature “develops children who are more present and in the moment, [as they take] time to really slow down and be present in nature” (P6, Instructor; p.4). Children also understand the effect the natural environment can have for them. One parent observed that her “child will recognize if we are working too much she’ll be like ‘I just need to go outside for a bit’, and I think that’s credit to um [nature program]” (P7; p.3). Another parent noticed that her child was calmer after being outside or “she’ll go out and sort of hide in her playhouse when she’s had enough of her siblings” (P11; p.9). A third parent explained how their child “liked it when they’d lie quietly in the forest and put rocks on their stomach and listen to the nature around them” (P13; p.1).

According to a number of parents and instructors, the experiences in the nature-based program was teaching children how to understand and regulate their own emotions through contact with natural spaces.

Wellbeing and development

Connecting with nature and improved wellbeing was also discussed by most parents and instructors. One parent from the third program explained that “just the value of being out in nature, that being a benefit to a person’s wellbeing, and ...if you are healthy, and well, and interested in what you are doing, you are going to learn better” (P8; p.5). Not only are children learning how to calm themselves, they are able to use the space to release big energy and explore bigger movements by “being able to be a bit more rough and tumble, um, with their friends, not so many structures

in place, [they find] it very freeing” (P4; p.3). This was further explained by an instructor as the outdoors allowed children the opportunity to test their feelings and emotions in a safe and supportive environment:

Big feelings are okay, but big feelings look really okay outside, but they might not be the same when you are indoors. And so, we try to really support kids who have those big feelings and big emotions, and try to support them in a positive way so they feel that “man when I do have these, I do have support around that” and what are they and what are they identified as. But I think that’s a big thing that happens outdoors versus indoors (P2, Instructor; p.6).

For this instructor, they understood that while it may be less acceptable to feel ‘big feelings’ like anger, frustration, or sadness indoors, in the outdoors, children can be loud and begin to understand and control their emotions. From some of the perspectives shared in my study, learning that ‘big feelings’ are normal and the outdoors offers a safe space to explore these, was an important learning for children. Children can act like children outdoors, and test their emotional and physical boundaries in a supportive environment:

I used to, when [my child] was little and again being the first child, I’d take her to lots of classes or take her to, um, like museums or the science centre, which are all great as well, uh but now I think, well I should just done more, I should have just done more hikes and should’ve just done a lot more walks because I think the kids get more from it and it’s less stressful as a parent trying to be like “don’t touch that” and ”you can’t run there” and “yes you can be loud and run around and throw sticks” (P13; p.6).

Across interviews, parents discussed how even they used the nature spaces for peace and mindfulness. Outdoors provided a sense of balance to life from one parent’s perspective, balance

that helped them “to be able to keep on going” (P5; p.7). Overall, participants shared the ways they and their children utilized nature for wellbeing and emotional development.

3. Community Building

Moving beyond the more obvious ways that children were learning and growing in NBL, the programs’ ability to build and maintain community was evident. Ultimately, most parents chose an NBL program because of the connection to their own values; however, children’s enrollment in the program developed these personal values both for families with experience in the outdoors and those without. The program brought children together through activities to build cooperation, which translated back to the home environment for parents to observe. To organize the findings in this theme, I established two sub-themes: (i) connection and cooperation in the natural environment; and (ii) creating community.

For context, all of the parents in the NBL programs described that they felt the natural environment was an important part of their own lives and their family’s lives. While most parents shied away from considering themselves experts or avid adventurers (“I’m probably like mid-way outdoorsy-ness” P3, p.5), most parents identified many ways that nature spaces were prioritized in their lives. One parent explained “the natural environment is just kind of a part of who [they are]” (P3; p.5); and most parents shared that they spend lots of time outdoors, “hiking and...camping...[and just] being outside” (P11; p.4). All but two of the parents that I interviewed had also spent significant amounts of time outdoors as a child. Most parents described how their own parents had placed a priority on outdoor time and that they “were outside a ton” (P5; p.7), spending time with their family, “camping, out for hikes and nature walks...[which] are all really strong memories” (P8; p.5). These outdoor spaces were an environment that they associated with

family time and connection. The outdoors comprised “strong memories as a child” (P8; p.5) for these parents; they were viewed as formative childhood experiences that these parents now wanted for their own children. Two parents also taught in a similar program to the NBL program.

One important consideration for the parents of the first program (Program A; P3, P4, and P5) is that these parents all considered themselves as outdoorsy or connected to nature, and also lived in an outdoorsy environment. This location may have increased their access, experience, and comfort with natural spaces. However, the clear difference in findings between these parents and the parents of Program C was that these parents (Program A) mentioned life skills that their children gained in the program (discussed in Section 4. Capacity Building).

Connection and cooperation in the natural environment

Most parents expressed the importance of the outdoors for family connection and bonding. This connection and cooperation was important both in the family and in the program. For parents, the outdoors was a space where they felt able to create a more authentic connection with family and friends:

[I]t’s just where I feel most like myself, and the people that I meet in that kind of world are the most like me, um like traveling like any places that I’ve been in the world, when I go for a hike or climb a mountain or something, that’s like when I meet the people that I am most like or the most connected to” (P9; p.6).

Across programs, parents who had experience with the outdoors often shared this feeling of a deeper connection with others that was fostered in the outdoor environment. One parent from the first program shared how the quality of her interactions changed in the outdoors:

I find that the quality, of say visiting with friends, I’d say it’s better quality interactions when we are out doing things, versus just like having a coffee together... I find like the

conversations we have are generally deeper or more personal, if we are out, you know skinning up a mountain, or on a mountain bike ride somewhere. Just something about it um, it just kind of lends itself to deeper interactions I find (P4; p.6).

One parent recognized that the outdoors brought her family together “in a calm way... it’s a definite, come together, calm activity for the most part. And a place where [they] can observe the world around [them] in a quiet fashion” (P10; p.5). The conversation with one of the parents with no previous experience in the outdoors also highlighted the importance of the outdoors and creating connections to these programs for all families:

Um, I mean I notice that when I’m at home all the kids kill each other, repeatedly, you know I hear screaming, but if, if I can, and I can’t always, but if I can get them outdoors, um then like yeah, they just suddenly play together and they come up with great games and they explore and it’s just a lot more joyful and easy parenting (P13; p.6).

This parent recalled the strain that she can feel indoors as a parent, and how the outdoors fostered this ‘easy parenting’. This idea was supported by an instructor (P2) with extensive experience in the outdoors both as a parent and an individual. The parent above goes on to explain that in the outdoors, she found that:

[W]e tend to have bigger, family games that are just fun, it’s just a lot more fun as a family, there’s less fighting, we can run around, we can rough house, we can play chase, or tag, or hide and seek, and it’s less, I feel less stressed so I can be more fun, um but then I think it’s less stressful for the kids as well, I’m not being grumpy just looking for my coffee all the time (P13; p.7).

The outdoors became a conducive space for healthy connection for this family and other families in both programs. The first instructor directly pointed to connection as the main purpose of the

program: “purpose for running these programs is to build a deep connection with nature, with self, and with others...we are looking for ways to help children and foster that deep connection with the natural world and at the same time with themselves and with others” (P1, Instructor; p.4). They felt that connection impacted physical, psychological, and emotional wellbeing. This connection between children appeared to build community in the classroom through social learning, as parents observed their children become a “team player” (P3; p.3) through activities that bring the group together outdoors. The unexpectedness of the outdoors also created opportunity to facilitate this social cohesive behaviour:

“It’s also an amazing opportunity for collaboration and team work for students, because say we are outside and we are trying to get to the park and our little creek has over flowed and we need to build a bridge, then having our students come together right on the spot and share their ideas, collaborate, test those ideas, reassess them, rebuild again, and then move forward, those are incredibly valuable learning opportunities (P6, Instructor; p.4).

Based on participants’ understandings of the NBL programs, the natural challenges of the outdoors created opportunities for this connection and social cohesion for the children. One parent recounted that her child was “able to help some of the younger kids or the kids who might have been struggling that day or even help the teachers pull the sled through the waist deep snow with all the backpacks on it” (P11; p.2). This resulted in “a lot of pride in her strength and the ability to help teachers and help her classmates” (P11; p.2).

Creating community

An outcome of the program that I had not anticipated (based on my literature review and previous experience) was the sharing of knowledge and community building created by the shared experience for both children and parents. Parents found that their children liked “to share that

knowledge” (P5; p.1) from the program with others. The activities that children are doing in the classroom are being brought home and shared with parents. Some parents were finding ways to recreate these experiences at home. For example, one parent said that their child loved that, in the winter, the class had skateboards (without wheels) that they used to slide down hills on, “so, then we had to get a skateboard at home...she loved that” (P13; p.2). Another parent with outdoor experience shared how her children reminded her to appreciate the wonder of the environment around her, to stop and smell the roses:

You just forget things as an adult even if you still hike, and camp, or bike, and all those thing[s], you don’t stop and slow down the same way kids do, so like from age two to eight, it’s like you could spend hours in ten-meters of a path because they are, because like every little stick is unique and every little stone is beautiful (P12; p.5).

In many of my interviews, the siblings of the children in the program either had already attended the program or their parents planned to have them attend in the future. This pattern of enrolment was also mentioned by the instructors. One instructor explained that her program (Program C) had a “large sibling number, so likely if one child comes to our program, their siblings will also come, so it’s kind of that word-of-mouth community wise” (P6, Instructor; p.6). Most of the parents that I interviewed said that they learned about the program through other parents. Although NBL programs are slowly gaining popularity, they are being shared between parents with similar values: “when people have kids, who are younger than mine are thinking about it...I really can’t say enough positive things about [the program]” (P4; p.2).

Interestingly, the sharing of the program(s) between adults in the community did not stop at encouraging one another to enroll their children in the program. One parent in the first program proclaimed that she loved “it so much that for [her] friend’s birthday [they] actually organized an

adult [nature-based program], um session, where on the weekend [they] went out for a number of hours” (P3; p.2) because of how much she felt her children were gaining from the program.

Sharing the program at home and with others created a community around NBL and the natural environment for not only children, but parents as well.

4. Capacity Building

All but two parents (P10 & P13) that I spoke to had significant outdoor experience and/or knowledge. However, throughout my conversations with parents and instructors, understanding the experience and knowledge that children gained through the program demonstrated the programs’ ability to build capacity in the children, and fascinatingly, in parents as well. In this theme, I generated four sub-themes: (i) contextual learning; (ii) children as drivers of change; (iii) instructors as knowledge brokers; and (iv) NBL and outdoor access.

Contextual learning

During my interviews, the idea that children were learning concepts and ideas that were relevant to their specific environment was the first theme that I began to develop. During data collection, I was able to probe this theme as I observed it in other interviews. As I developed my themes during analysis, contextual learning became a strategy to build capacity, thus becoming a sub-theme of the capacity building theme.

Supported by previous literature, some participants shared that an influential teacher in nature-based programming is nature itself. Parents and instructors identified ways that children were learning directly from their environment in NBL programs, which was both challenging and rewarding. All three instructors that I interviewed viewed nature as the determining factor for the lessons of the day. One instructor said that they felt they “work in concert with nature, nature is

itself, nature is the teacher, we are the facilitator (P1, Instructor; p.14). Another based their program “off the season first and then what the weather is going to give” them (P2, Instructor; p.3). Because of this focus, most parents observed that their children were able to gain an appreciation of the changing seasons, and how “vegetation and wildlife” (P7; p.1) change with the seasons. Moreover, parents described how their children gained knowledge specific to the environments that they lived in: the Albertan context. One parent who grew-up and, at the time of the interview, resided in a heavily forested environment, found that “[her children] are getting so much knowledge that’s so relevant to what they will use and need, in their life in the outdoors.” (P3; p.2). The Albertan outdoor setting is cold and wet for many months of the year, and a few parents recognized that their children were “learning how to manage themselves in that setting, and ...can generally make those good decisions for how hot or cold they are, and how much food and water they need, and that sort of thing” (P5; p.1/2).

When I was comparing the programs, the parents in the first program (Program A, located in a rural, mountain town) noted the life skills that their children gained in the program, which included the use of a knife (starting with a peeler), fire building, and the identification of plants – all concepts that seemed to be more of a focus in this NBL program. However, these are all skills that are beneficial to the children’s specific surroundings. This is demonstrated by one parent’s experience out on a walk with her children who had both attended the program:

So even things like we’d be out in the forest on a walk and him and my daughter would grab a plant and start to go to eat it, at first because my daughter is three years, four years older, I’d stop them and be like “well how do you know it’s not poisonous?”, and they’d say “well this is the plant, and this is how it’s used, and this is the berries, and we can eat

them”, and so it was really neat, kinda seeing that they had soaked up all that information (P3; p.1).

This parent’s children gained knowledge that prepared them for the environment surrounding them, by supplying them with relevant and meaningful knowledge and skills.

While this specific, life or survival type knowledge did not come up in conversations with the parents or instructors in the other programs, all the parents that I spoke with mentioned the resiliency their children gained from being outdoors all day. The instructor of the third program (Program C) explained that the “unexpectedness that being outdoors and all the different weather present, are incredibly valuable learning experiences for children” (P6, Instructor; p.4). One parent explained how setting can create challenges for children:

[L]ike when it is raining, sleeting, and you are getting like actively wet for a large chunk of the day and it really challenged them, like in a good way for sure, but um, I think it was an interesting moment to see them just kind of go through that and have to deal with, like digging deep and staying positive, and being a part of the group (P5; p.2).

In this setting the parents are observing as their children become both more physically and mentally resilient. As one parent observed, her children were “learning to do things that are hard, things that are physically difficult” (P3; p.3) and becoming more resilient and capable of those tasks as a result.

According to participants, the NBL programs pushed children outside their comfort zone. The program becomes an experience that gives them a sense of “accomplishment for them to get through a whole day...they get proud of the fact that they have gone that far” (P11; p.4). One parent recalled a story of an experience her child had in the program on a particularly trying day:

Um, well and even things she often, another thing she always talked about was in the winter, like there was one particularly really, really cold day and super snowy, the snow was really deep, and they trekked across the park and a lot of the kids were kind of crying or like cold, but she loved it, and she found it hard, but certainly it's a story she always tells, about how they made it through and you know, they did it (P13; p.2).

Similarly, the instructor of the first program (Program A) recalled a series of challenges, similar to an obstacle course, that the instructors had set up for the children. One of the tasks was to have the children use their fire skills to start a fire with their friends. On this day, a blizzard had created unfavourable conditions: wind and heavy, wet snow. This instructor found that this experience of being challenged by the weather made it more exciting, and garnered a great sense of accomplishment:

I wouldn't have anticipated that the weather would've made it cooler, but when you are 9 years old trying to light a fire in a blizzard with your friends, there's magic that happens in that moment (P1, Instructor; p.14).

In that environment, weather and the physical space created learning opportunities that fostered the children's resiliency and capacity to experience these kinds of situations in the future.

Children as drivers of change

In my interviews with parents and instructors, participants described the ways children were connecting with natural spaces and developing an appreciation and care for the natural world. Children were becoming environmental stewards through this connection. One parent eloquently described the importance of this connection for all people:

...so many people, not just kids, just have such a limited sense of our natural environment, and I think it's super important because if you don't understand it or you don't know it, if

you've never experienced it, why, why would you care about it right? Why would you care about protecting it? (P12; p.4).

In the NBL programs, the natural world is painted in a light that captivated children: when it's snowy one instructor describes it as "a 'snow globe type' of day" and when it's windy it become "a 'trees are dancing' type of day" (P2, Instructor; p.9). Parents across both programs noticed the relationship with the environment for their children. One parent explained that when she goes outside with her child, they notice "the changes, noticing the buds coming out right now, noticing the green grass, um [her child is] very quick to point out the names of the birds and how they live... [her child] has an appreciation of what's around her" (P7; p.3). Through understanding how all the plants and animals in the ecosystem work together, one parent saw that her child appreciated that "even the bugs that [she] may not love are an important part of how everything functions" (P12; p.2). Through the connection to the program, another parent explained the importance of understanding one's own impact on the natural environment:

It's kind of interesting because we've been into different areas in town, we've seen in the forest, we've seen a fort set up, and I used to think "oh maybe that's a [nature program] fort", but learning through the program that it's really is a leave no trace, like it's, they don't leave any area looking like they've been there (P3; p.3/4).

Because of their experiences in the program, the children were learning how to respect and care for the environment. One parent shared how they were having important conversations with their children as they found their children were more aware of the impact that overuse has on the environment: they asked "how can we protect this?", "what are the things we can do?", and ... [were having] some big discussions around that" (P7; p.5/6).

Through attending the NBL program, children were excited by what they saw in those natural spaces, but this also encouraged them to see the spaces as something they need to protect. In this, the program can teach empathy for nature and share with the next generation how to care and protect the environment.

Instructors as knowledge brokers

Alongside the contextual learning, children gained valuable information from the program instructors. The instructors supported the children in their learning and provided knowledge when necessary. The instructors saw themselves as co-learners, coming along on a journey with the children. In this relationship, they gave and received knowledge. However, in this journey they could also be important holders of contextual knowledge, which contributed to what the children learned and how they took in knowledge. These instructors acted as knowledge brokers for children, facilitating the attainment of contextual or experiential knowledge:

And I know that the outdoors is not for everybody but I'm trying to help bridge that so that it is for everybody, and so that even as a parent if you are like, I don't even know what to do outside, I don't know how to dress, this is odd to me to even go on a walk, I want to be that kinda broker, if you bring your child to us, we can show you how much can be done outside (P2, Instructor; p.6).

A few parents felt that having the opportunity to explore the outdoors and the activities that take place outdoors built capacity that will benefit their child later in life. One parent reflected on her own experiences and felt those early experiences "were some of the most character building experiences that [she] had" (P9; p.7). According to her, instructors were key facilitators for these experiences. One parent shared that her child is naturally inquisitive and just "can't ask enough questions, and ...as a parent it's easy to get kind of frustrated at times" (P4; p.3). But, in the NBL

program, her child had “instructors [that] just ...seemed to have so much patience and so much knowledge in those areas ... they really encourage all of those questions, which then builds confidence” (P4; p.4). This patience and knowledge sharing was important for the families with outdoor experience, but could be even more crucial for parents with little outdoor experiences as illustrated below.

There were two parents that did not have extensive experience in the outdoors prior to enrolling their children in the program. They were both from the Program C (located in an urban area). They wanted their children in the program to create a connection to the outdoors. One parent felt that even though she did not have the outdoor knowledge to share with her children, through the program “they are with adults who can facilitate learning in this environment that [she] just wouldn’t necessarily know how to do or wouldn’t have the experience” (P13; p.4) to do. One parent with little outdoor knowledge was surprised by the extent her children developed a:

[L]ove of the outdoors...that’s a really outstanding one to me. My husband and I were never outdoorsy people, and I wanted that for my kids and it’s huge, like when they were three they could spend twenty minutes outside and now they can spend seven hours (P10; p.2/3).

Better yet, through learning alongside their children, both these parents developed a love and appreciation for the outdoors. They now see the value in these spaces. The first parent explained that she “actually [has] only become what [she] would consider more outdoorsy since the boys went through the nature program” (P10; p.4). The second parent explained that she has “done a 180 from hating nature to now really quite enjoying it” (P13; p.5/6). One of the important lessons that this parent highlighted was learning about clothing. This parent had parents who were immigrants and felt her parents lacked the contextual knowledge for Canadian winters. Gaining

the knowledge that she did through preparing her child for the nature program built her own capacity:

...um so I wish I knew now, I wish I knew then what I know now, I mean it sounds so stupid, like clothing that's such a basic thing, but no one had taught – my parents had emigrated from England so no one had really taught them how to dress properly for Canadian weather so they didn't know how to teach me (P13; p.7).

The parent was able to reflect and felt that had she gone back to her childhood and “had base layers, and warm fuzzy fleeces, [she thought the outdoors] would have been lovely...would have been a much better experience” (P13; p.7). After the experience of the program, this parent found that her family began to pick up new outdoor activities as a direct result of being in the program and learning from the program. Her daughter showed interest in activities like snowboarding and horseback riding, activities that are “kind of dangerous, and kind of fun” (P13; p.2) where she could push herself, while feeling capable of trying these new activities.

After the NBL program, both parents with experience and without experience were able to capitalize on the knowledge shared in the program to benefit their children and families. My interviews suggest that a nature-based program would attract parents that already appreciated outdoor spaces and are supported by their previous experiences, as well as some families without previous outdoor knowledge.

Facilitating outdoor access

Lastly, according to parents and instructors, NBL can build capacity by facilitating access to the outdoors. In these programs, learning and sharing stories had more impact on children because it took place in the outdoor setting:

[A]s far as I know, [my child] has always been very engaged in the stories, he would talk about them, not all the time, but often he would bring things up, and it being on the computer, he could not connect with it at all...so part of it was actually being in the woods (P4; p.9).

One instructor mentioned that they created the nature-based program because they noticed “that children were not getting enough time outside” (P6, Instructor; p.2). This instructor explained that access to the outdoors was a benefit that parents observed from the program: “a lot of parents are pleased that their children have had those opportunities to be outside and explore and have that free time” (P6, Instructor; p.7). A parent in the first program explored a hypothetical to explain the challenges that families may face to access the outdoors:

[If] they’re just like struggling to make, not just financial ends meet but to just make everything like in the family work. And um, I think that that just makes it more difficult to be intentional, especially when the default isn’t like go outside, like maybe it was in my parents’ generation (P5; p.9).

She demonstrated a keen awareness of the privilege she had in being able to access the outdoors as families “have all these other things going for [them] in order to prioritize [their] kids being outside” (P5; p.9).

Cost of the program was discussed as a barrier particularly in the first program (Program A) as it is an after-school program that would be paid for by parents. The third program (Program C) would have some costs associated with it, but it was in a school district in an urban environment, making it publicly funded and more accessible. All three parents from the first program brought up the cost of the program for their families. One parent mentioned that her children did not do as many other activities because they prioritized this program and access to the outdoors.

Highlighting this, a parent from the third program said that she loves “that [the program is] funded so more kids can go” (P9; p.4).

A barrier for Program C was location and access. Parents described having to drive across the city to have their child attend the program: “Because you know for us, from where we live, especially in rush hour, you’re looking at an hour each way to get there, but then that’s the only school in the city” (P7; p.4). This was different from the first program as it took place in a small town and the program met and picked up the children from their morning kindergarten program.

Although COVID-19 has brought distressing and unsettling change for many, it increased nature-based programming in Alberta, a change that was witnessed by some participants. One parent noted that “COVID has actually spurred on a lot of outdoor activities, parents are looking actively seeking for outdoor opportunities for kids to be in, as opposed to indoor” (P7; p.4). This increase is increasing the number of programs that are available in many areas, as noted by some participants. And while some programs may not be running according to the tenants of ‘true’ nature based education or Forest Schools, two instructors (P2 & P6) I interviewed felt that getting out in any way possible capitalizes on the benefits of the outdoors for children and creates a connection to the outdoors for children. Very simply, one parent stated that she felt “regular schools could take a little bit from it, get the kids out more, to explore the world around them” (P11; p.11). However, NBL instructors in Alberta still face many challenges when it comes to employing nature-based principles as one instructor shared that:

[I]n Alberta they tend to see, I think they, not they tend to see, they tend to be more restricted, ah the curriculum here is older, it’s more outdated, it’s more based on ... specific knowledges that they have to meet in order for them to do their job. Whereas B.C. changed their curriculum and they’re more competency-based curriculums and it was very striking

when I went to B.C. to work with the teachers and see such positivity.... Alberta it's more like people do it, not because the supports are there, but in spite of the obstacles, some teachers still are able to do it (P1; p.11).

NBL programs can increase access to the outdoor environments for children and families.

However, based on the above findings, there are barriers to access for Alberta families.

Chapter 5: Findings – The Experience of Remote Learning for Parents with Young Children

This second results chapter will focus on the findings from the second half of my interviews with participants, which addressed my second research question:

How is remote learning during the COVID-19 pandemic experienced by parents with young children registered in an NBL program?

As in chapter 4, based on my analysis, I have created a conceptual claim that summarizes the themes developed from my data set to answer the second research question:

The remote learning period was one of many challenges during the pandemic that primarily, mothers took on. This experience is not unique to mothers in this study, instead it is a part of a clear trend that occurred globally during the COVID-19 pandemic: women and mothers bore the burden of increased responsibilities as a result of the changes brought on by the pandemic. Despite these challenges, families found solace and balance in the outdoor environments, connecting with friends and family, nature, and NBL spaces and concepts.

Study Findings

The second research question was developed with the interest of understanding parental experiences of remote learning during the COVID-19 pandemic with their young child who had been involved with NBL. The question came out of the need to pivot the research design to accommodate the COVID-19 restrictions, the impacts on the NBL programs, and my own reflections. I felt that COVID-19 was a topic that would come up in the interviews regardless of whether or not I included it in the interview guide. Rather than be surprised by these discussions,

I created space for this conversation. I went into conversations with participants with a genuine curiosity to hear about their experiences. During our conversations, participants shared their stories with authenticity and vulnerability, and included the highs and lows of the COVID-19 pandemic.

Using Thematic Analysis and constant comparison strategies, I generated four themes:

- (1) Balancing Responsibilities;
- (2) Gender Inequities Amplified by the COVID-19 Pandemic;
- (3) Nature for Health Promotion; and
- (4) Connection.

Sub-themes were developed when appropriate: these are discussed with their respective themes below.

For context, in the first program (Program A), I spoke with the instructor who was also the founder of the program. This instructor led the nature-based after-school program that operated as a complementary nature-based program for the local kindergarten program (nature-based Waldorf kindergarten). Both the first and second instructor (who led a similar program, but I was not able to recruit/interview any parents from their program) only had limited interactions with parents and the remote learning context. The instructor in the first program did connect with children and families using virtual stories that they created to offer continuity for students and complete the stories they had started in the nature-based program. However, it was only the third instructor (Program C) that was able to give me an understanding of the remote learning experience from their perspective of connecting with children and parents to facilitate learning during this time. This instructor shared that they tried to use screens as little as possible. Instead of screen-based assignments, the instructor created small projects for children to complete with their parents' help, projects that encouraged them to get outside during the remote learning period that corresponded

with this study (March – June 2020). The instructor offered some information regarding the provincial focus during this time as well, asserting that the province only asked schools “to focus on... language arts and math” (P6, Instructor; p.9).

1. Balancing Responsibilities

During the remote learning period, most parents had many responsibilities that did not disappear when the COVID-19 pandemic began, instead they only increased for most. These home responsibilities directly impacted the parents’ experiences with remote learning with their young child. If they had other priorities like remote or in-person work, other children to care for, or other home responsibilities, remote learning for their young child became much more challenging. The instructor from the third program confirmed what I heard from many parents across both programs: “it depended on what the family situation was... [if parents were trying] to work remotely, those parents weren’t as engaged, just because within their families they couldn’t make it work” (P6, Instructor; p.10/11). Resources and experience also played a factor in a parent’s ability to balance remote learning. While the experience was not always easy, it was doable for some parents because of the advantages they had at this time that facilitated or eased the experience of parenting, remote learning, and/or maintaining professional responsibilities (e.g., babysitters, partners who shared home responsibilities, and/or teaching experience).

Across my interviews there were two sub-themes that I observed: (i) ‘doing what they could’; and (ii) parents as teachers.

Doing what they could

My interviews with parents revealed a focus on just surviving however they could. Most parents appreciated the flexibility that their schools offered, only asking parents to do what they

could. One parent from the first program noted that the kindergarten teacher had a few more resources available, but that they did not use these “[they] did what was required and that was enough for everyone’s patience” (P4; p.8). Another parent who experienced challenges working with her young child at home had a similar experience saying that they “just focused on literacy and numeracy” (P5; p.10). This parent suggested that some of the trouble they were experiencing could be due to the child’s age and developmental maturity, as she was able to compare the experience to the one she had with her older child who could work more independently.

However, I noticed that for some parents, if it wasn’t working, they didn’t force it. Letting go may have been a helpful contributor to the better experience for families as well; similar to NBL philosophies, if something wasn’t working they let it go. Parents could not force learning and instead found ways for it to happen naturally:

I think it was a very stressful time in general, um, so in terms of that responsibility level, I think I wasn’t too concerned about it overall, because it was just a couple months left in the year and I didn’t feel that it would make a difference in her you know need to learn. So, I wasn’t terribly concerned about pushing her to you know accomplish you know the activity or the academic type of activities they were asking her to do (P8; p.9).

There was a general sense that “it’s just kindergarten at the end of the day” (P7; p.9) for some parents. Like the above parent, others felt that there was no point in forcing something that their child was not interested in. Two parents admittedly ‘threw in the towel’. It was a challenging experience for them and they did not want to add to the stress of the situation by battling with their children over school work. One of these parents felt that the challenge was partly due to missing the social atmosphere for school:

I don't know I think, he's an only child and it's just me and him doing something together, it wasn't the same as him being around a bunch of kids, I think there's a, there's definitely something to that collective energy and fun and playfulness of being in a group of kids. (P9; p.8).

Instead, this parent was able to find other activities for them to do using her past experience in a nature-based program and her child's creativity, and this "just kind of took the stress away" (P9; p.9). The second parent said that during this time her priority was on keeping her children happy and "just try to keep things pretty fun because [they didn't] want them to be worried or anxious or whatever, and so [they] literally just didn't try to do formal learning" (P12; p.8).

Two parents from the first program hired help during this time. Both of these moms were still working (remotely and on-site) and this outside help was a facilitator for success for them. The mother who had to be on-site for work found that, "a really awesome babysitter...was how [they] were gonna get through" (P5; p.9). The second parent expressed that this help "allowed [her] to get some work done" (P3; p.9/10). For these moms, this outside help allowed them to continue to work and bring some balance back into their lives by alleviating stress; it also gave their children a chance to get outside. For the second parent, this was one less thing she had to worry about. However, the ability to hire outside help was not something all parents had the capacity to do.

The COVID-19 brought many changes to daily life for parents and families; according to parents in my study, weathering this experience meant making choices that were best for their family.

Parents as teachers

Overnight, parents became teachers during the COVID-19 pandemic, whether or not they had the capacity, training, or resources to do so. Most were not prepared for this experience.

Moreover, the compounding stress and lack of support made the experience all the more challenging.

For most parents, the experience of becoming their child's teacher during this time was challenging. One parent found their children struggled to "stay on task...when [they] were trying to work through the tasks, it was a lot of work to kind of keep him on it" (P3; p.7). This parent also admitted that she felt similar to her child, the experience was a "little monotonous, you know similar every day, just wanting to be back to normal life a bit" (P3; p.9). Further, even though most were not trained teachers, they "felt like [they were] doing all of the work...like, it was kind of 100% up to the parents to do it" (P4; p.10). One parent felt that her "main frustration was that it felt like ... all these pieces were crumbling in terms of what we know in society, how we functioned and it felt like, as a parent it was just being piled on [them]" (P5; p.9). Another parent shared that the experience "was hectic and overwhelming... worrying about the kids and making sure they are getting what they are supposed to be getting out of the school and also not stressing about the situation that was already really stressful" (P11; p.7). The lack of support some parents felt from their school communities or their typical support systems due to restrictions, coupled with the increased responsibility and stress was a challenge for most of the parents I interviewed.

According to parents, remote learning was not the same as homeschooling. All of the challenges that parents faced were normal challenges, but it was made more intense and unsupported because of the context. One parent described the challenges she faced and how the experience felt different from homeschooling for her even though they had intended to homeschool after the program was over: "I've been a stay-at-home mom for seven years now ...but like, you know we'd yeah it was it was, terrible and had been terrible, and continues to be terrible, everything's terrible" (P13; p.10). This parent went on to explain that similar to parents above, it

felt that she was solely responsible for everything, she had to provide the physical, emotional, developmental support that pre-pandemic she would have had help with from family, friends, and teachers. Now it was up to her to support her children through this very frightening period. She explains these thoughts:

[A]re all very typical parenting experiences obviously, that's not new COVID or not, but during COVID everything is just so very intense because it's not like well this is it today but tomorrow we're having a break because this person is coming, or grandparents are coming to help with this, and I can spend focused time on you or you know. It was just I guess that was just the thing it was just super magnified and super intense and there was it was unrelenting right so it was just always all three of them trying to co-exist, when they all have very different needs and ages of development and it was all on me, all the time, to try and manage that whether that was outdoors or indoors, ah it was easier outdoors, um but they're always, when you've got like a baby, crawling through goodness, while I'm eating there's just no [break] (P13; p.13).

The stress and anxiety this parent felt during this time radiated from her during this interview, to the point where she broke down in tears during our conversation.

The remote learning period was very challenging for a number of the parents that I interviewed due to the many stressors they faced during this time and the lack of support they felt. In comparison to these challenges, for a few parents remote learning and becoming a 'teacher' was not very challenging because of their previous experiences. One parent who had NBL experience also had "a teaching degree anyways so it was okay, it wasn't too bad for [her]" (P7; p.8) to take on the responsibility of teaching. Another parent who did not feel overly stressed by situation had a child who responded well to remote learning where "her teachers would post extra things or

encourage her to do certain things that she knew she would like more, or she'd be more excited to do" (P11; p.7).

Parents were forced into taking on the responsibility of remote learning overnight; parents in my study shared the challenges associated with this new role. For some parents who did have resources or felt supported during this time, remote learning, and becoming a teacher was not a challenging experience, but this was the exception to the largely challenging experiences for others.

2. Gender Inequities Amplified by the COVID-19 Pandemic

Even though I had no restrictions or specifications on gender for recruitment, all my interviews were with self-identified females (i.e., females were who volunteered to participate). From my conversations with them, mothers appeared to bear the brunt of the COVID-19 pandemic challenges, including the responsibility of supporting remote learning with their children. This was due to many reasons, most of which they did not have control over. This theme developed as I interviewed and was one of the first overarching themes that emerged from my data.

For most parents that I interviewed, the experience was challenging and the transition to remote learning, abrupt. One of the parents above who was able to hire additional help at the onset of the pandemic also shared the impact that COVID-19 and remote learning had on her work. She "was not able to do my work in the same capacity...trying to balance both [work and remote learning] was tricky" (P3; p.7). She explained that when balancing both, focusing on remote learning in the morning and work in the afternoon, "there was always that bit of time pressure as well, and [she] definitely lost productivity with work....[she] just didn't have the same amount of time or the same focus" (P3; p.9). For that parent, she was able to reflect on the situation after and realized that she was having health problems at the time that she felt were connected: "it was the

stress of having a different life and feeling like I couldn't get the work that I needed done, and not knowing when it would go back to normal" (P3; p.12).

In my interviews, mothers were taking on the responsibility of remote learning for many reasons, most of which were outside of their control. This never appeared intentional or forced, just matter-of-fact; I heard "that was just the nature of [their] businesses" (P3; p.8), "he was still able to go into his office" (P4; p.8), "my husband's work has kind of stayed the same throughout" (P9; p.9), "my husband...he's in I.T. so he had been setting up a lot of remote stuff for all of his clients so he was really busy the first part of the pandemic" (P11; p.6), and "my job was not going ahead anyway at that time, but my husband was able to work remotely, that was just the natural way that it fell" (P7; p.8). For the majority of the families I interviewed, it just 'made sense' for moms to take on the majority of remote learning responsibilities. A few even welcomed the opportunity because of past experience or comfort with teaching. This was consistent across parents from both programs. Although it was not intentional, the experience can be appropriately summed up by one participant: "his life stayed fairly normal, and mine changed a lot" (P3; p.8).

However, there were parents who shared responsibilities evenly, so this is not an experience that could be generalized to all participants. There were ways in which partners helped as they could; for example, one found ways to give mom a break by taking the kids in the early morning to get the 'cobwebs' out before mom took over for the day (P4). Others helped with household responsibilities like cleaning or cooking. In other families, parents shared responsibilities, but the remote learning still fell on mom (P10 & P9). One mother shared responsibilities with their partner, but they did not keep up remote learning: both parents were working from home and focused on childcare and reducing stress during this time (P12). Two mothers described ways in which the responsibilities were shared between the parents at home or

did not appear to only effect the mother (P5 & P8). The first parent (P5) was from the first program and she shared how both parents were working and hired a babysitter to help with childcare and remote learning. She was still the one who would “parse it out in terms of how childcare was working that week, in terms of who was doing what when” (P5; p.10). In this family, two parents were working away from the home and found ways to alleviate some of the stress on both parents. Similarly, in the second family, both parents worked part-time from home or on-site and were able to split responsibilities evenly: “one of us was always home with them” (P8; p.8). The commonality is that they continued with their jobs as they would pre-pandemic either on-site or in the home (remotely) during this time.

Overall, the parents in my study, mothers, carried the majority of the remote learning responsibilities during the COVID-19 pandemic, although some families shared responsibilities in other ways.

3. Nature for Health Promotion

While exploring pandemic-related remote learning experiences with parents, I probed whether outdoor time was included or encouraged by parents during this time. In this theme, I created three sub-themes to frame my findings: (i) nature as a life raft; (ii) missing nature; and (iii) impact and empowerment through NBL. For the first sub-theme, I use a literary device, metaphor, to condense the data and describe the pattern that I observed (Miles et al., 2013).

Nature as a life raft

During the COVID-19 pandemic and resulting remote learning period, the outdoors became a space for health and balance for families in my study. The stress of the pandemic could be envisioned as the water: overwhelming and all-encompassing. In interviews, parents described

the ways that nature lifted them up and removed the stress improving mental health, becoming a resource that they utilized to thrive in a new way. Nature uplifted and carried the whole family as well, not just one person: everyone benefited from the experiences outdoors in some way. For one parent, they felt that “it was very literally the only thing that got [them] through” (P13; p.11). She further explained:

...when they closed all the playgrounds, right and they closed the provincial parks, but our one god send, and for this, and if nothing else, and there are many other things, if nothing else I will always be forever grateful to [nature program] because we still had out park pass to their, to the park where they would do their um, day, like their, their park days, that stayed open, so that, that would be our big thing every week, you know we, we would go to the park and we would, so yes those we did a lot of that in the spring and that was just like a godsend, and huge godsend (P13; p.10).

For this family, time outdoors was a welcome reprieve from the many stressors of the pandemic. This parent was also one of the two parents who did not have outdoor experience prior to her child attending the NBL program. It created a safe place for this family to explore, one that they would not have had without the nature-based program. Other parents did not describe having access to nature spaces with such reverence, likely because access to nature spaces, particularly for those in the first program, was not novel to them. They did describe ways that nature maintained a sense of normalcy for them. One parent from the first program said that during the COVID-19 pandemic, the only “thing [they] could do was go outside... [and they] appreciate the space, and the importance of having that space and nature around [them]” (P4; p.5). Another parent from the first program explained that their experiences in the outdoors did not change during the time, they only changed where they recreated because of how busy parks and recreation areas:

...that's probably sort of been a really great part of the whole pandemic is that we do have this pretty giant backyard, there's horses here, there's various activities that the kids can, like a bouldering wall and stuff, that they, that we can participate in, a lake with canoes, it definitely feels like in some ways our interaction with the outdoors hadn't really changes, we don't go off-site as much (P5; p.12).

Other parents described how the increased use of these public spaces became deterrents for recreation in these spaces. Instead, they chose to spend time in local nature spaces. This experience was common for families across both programs, regardless of whether they lived in the large city or the small town. One parent in the third program did not feel that her child's "outdoor time differed dramatically from what they would have had without a pandemic, especially since [her child] was in nature kindergarten, in fact she probably would have had more outdoor time without the pandemic" (P12; p.11). Another parent (P10) expressed this as well, saying that work responsibilities made outdoor time challenging. Both these parents were in the third program and lived in an urban area.

For children, this outside time worked to create balance between their largely stationary, indoor, computer-based learning. One parent described that it was a "nice balance because at school they are so used to being outside and learning and doing and playing" (P3; p.10/11). Having this outdoor time allowed her children to "thrive" (P3; p.3) during this time, despite how challenging the world had become; parents in both programs expressed these sentiments. Some parents also noticed their children asking for these outdoor experiences. One parent explained:

I know there's times, even now they'll get stressed out and go, "can we go for a hike on the weekend?". And we haven't been, or we'll have missed it for a couple of weeks because of weather and other commitments, and they miss it, they ask to be out there, or they'll say

they want a break and go out to the garden and my daughter she interrupted us, she came in to tell me that her bean plants are growing (P11; p.8).

According to some parents, intentional outdoor time provided balance for the whole family. One parent explained that this outdoor time both gave her an opportunity to work and provided balance for her children by “getting fresh air, being active, um after sitting in front of a computer screen all morning or sitting in front of worksheets, [which] felt really good. It felt like the right choice” (P3; p.10). This was a parent who had her children outside with a babysitter in the afternoons while she took time to work from home. Similarly, another parent’s children went outside in the morning, which gave her time for herself (i.e., being physically active on a stationary bike). She also found that her children would come back and “they would have gotten some fresh air, they’d be feeling a bit refreshed, you know kind of get the cobwebs out” (P4; p.8). Parents from both programs described various ways that outdoor time provided everyone in the family with balance. The natural space put “everyone in a better mood” (P4; p.11), allowed “them to focus better (P8; p.11), was “really important for ...resiliency...to be able to cope with change and challenges” (P5; p.12), and “decreases stress” (P9; p.10).

According to the parents that I interviewed, the outdoors preserved health and promoted healthy behaviours for these children and families during a time of immense stress. Nature became a life raft that families in this study could hang onto, float in, and paddle forward through, despite the challenges and unpredictable situations that surrounded them.

Missing nature

More often than not, parents from the third program talked about what their children missed out on in the spring more than the first group (Program A). This likely only impacted the third program because the first program started again in the summer. Further, the parents in the first

program were also located in a town that was in very close proximity to nature spaces. One parent from the first program explained that her child:

[J]ust couldn't wait to get back to it, he was so excited. And they were out of the house so everyone was happy. You know it cost a lot of money, especially for putting both of them in it, and things were still pretty uncertain in terms of like, kind of our long-term finances, but it didn't matter. We would've paid whatever (P4; p.8).

The missed time in the NBL program for some families in the third program was very upsetting and some were very emotional during the interview. These parents really impressed the importance of how much their children had worked to get to the spring period (the season that had been missed due to the COVID-19 pandemic school closures) and how disappointing it was that they did not get the NBL experience. One parent explained:

They've gone through the fall learning the new rules and winter is hard because it's cold and the snow is so deep, spring time comes and kids know how to behave, what's expected of them, they've gotten used to each other, the weather is nice, there's all these new things happening, birds are having babies, there's baby mice to check out, um, they do a lot of fires and have a lot of celebrations, and she missed – sorry I'm gonna get teary [voice breaks with tears] – she missed all of that (P11; p.10).

There were two parents that were quite upset over what their children had missed. The second parent was primarily upset over the loss of what her child had gained socially from the experience, but also pointed to missing out on this new season: “she was just finally getting to make friends. Finally make friends, and we are coming into the nicer weather, they made it through the winter right, it was gonna be the most fun time, then it ended” (P13; p.13). Others from this

third program voiced similar disappointment in missing the program and the spring period, which was viewed as a key turning point for children, that the children in this school year, missed out on.

The first instructor suggested that the parents' comfort in the outdoors influenced their ability to spend time outdoors with their children during the pandemic. Most of the parents I interviewed did not have challenges spending time outdoors with their family. Interestingly, one parent that did not have outdoors experience (P13) described the space as a haven for them and their family during the pandemic. However, the other parent, without experience (P10), found it challenging. Although her appreciation for NBL had grown with her children being in the program, this parent also had work to manage and other priorities:

It was really tough for us to uphold the, not necessarily the academic portion, the values portion, and outdoors portions, because we still had to work, so we couldn't you know, I know the nature kindergarten did like a unit on butterflies and I would have loved to get a butterfly kit and go to, go on hikes to find butterflies and that sort of thing (P10; p.6).

This parent described the outdoor portion of their child's at-home learning as "very time consuming" (P10; p.6). She felt that it was something neither her or her partner "were trained for, and [the program] did a great job supporting [them], but there was a huge lack of peer contact and outdoor time" (P10; p.6). Where they lived also impacted their ability to find green spaces, as she explained they "didn't live near any nature spaces at the time" (P10; p.8). This parent also went on to explain that once her family moved, they were able to spend more time outdoors as a family (discussed below).

Although most parents reported some outdoor time during the early days of the COVID-19 pandemic, parents in the third program shared that their child/ren missed out on an important term in the NBL program.

Impact and empowerment through nature-based learning

Connecting to the capacity building theme from the previous chapter, parents described ways they changed their behaviour as a result of the knowledge, skills, and experience they gained by having their child in the NBL program. This was an impact that I only observed for parents in the third program (urban environment), and particularly salient for those who did not have outdoor experience prior to the program.

For those families that lacked previous outdoor experience, these programs built the capacity, as suggested in Chapter 4, to enjoy the outdoors in ways they had not been capable of previously; the importance of this capacity was highlighted during the pandemic. The second instructor explained,

[T]he families who being in the outdoors was consisting of a walk or something to all of a sudden, “my child will go outside and play for hours by themselves”, it was a big eye opener for them, and they were really, really I think the word might be grateful for that or saying “my child would never have done this without having this opportunity from you, like from this program” (P2, Instructor; p.16).

Aside from just spending more time outdoors, parents described the ways in which NBL influenced big family choices and decisions for them. One parent, who had explained how she felt unprepared and lacked training to provide nature-based programming for her children during the pandemic (P10 mentioned above), felt she was capable to homeschool the following year. She explained how experiencing the teaching style of the NBL program influenced her:

It did also open my eyes, because we continued homeschooling in fall, umm so it opened my eyes to a new way of teaching not that I didn't know how they were teaching the kids,

but I had never experienced it first hand, so I was kind of learning with my boys essentially, it just sort of opened my eyes to a more open-ended approach and how we can delve deeper into topics that never would have occurred to me before (P10; p.6/7).

She explained that she now understood how “pretty much any topic that [her] kids might be interested in can be woven into, or...all of the academic subjects could be woven into that topic” (P10; p.7). This parent also explained other ways they were influenced by their experience with NBL:

[A]ctually [it] influenced where we moved because we were in the upper northwest, near zero nature space and when we moved in October, we specifically wanted to find, something near [blinded – nature park], we are now five-minute walk from [nature park] which is great (P10; p.5).

The parent explained that, because of this move, her “husband takes the boys on a, what [they] call a field trip, once a week and they spend five hours in [nature park] just watching the beavers and watching the eagles and climbing on trees [laughs]” (P10; p.8). This parent did not have previous outdoor experience. The other parent who lacked outdoor knowledge and expertise also described the many new activities that her family began. She noted that during the pandemic they continued to seek out ways to increase their knowledge by joining a “wilderness education group... and they’ll be teaching us what plants you can eat, and how to do, how to chop wood with axes” (P13; p.6). For this parent, both her and her family’s ability to be outdoors and experience nature’s health promoting qualities went directly back to the NBL program:

But um, yeah like thank god for nature kindergarten because again, through her doing nature kindergarten, it had certainly taught our family how to be outdoors better, and um, so had it not been, if she hadn’t done nature kindergarten I think COVID would have been

a lot worse for us as a family, because it was really preparing her for that, and seeing the experiences and seeing what they did in the school that let us as a family get outdoors more and be more willing to explore spaces and um, yeah I don't think we would have done half the things we did as a family in COVID had she not done nature kindergarten. So, it certainly, certainly had a long-lasting impact, much, much greater than just, even one student in that year, it's changed the, I mean it sounds grandiose, but honestly it did change the trajectory of our family and changed our dynamic, um and changed our relationship with the outdoors, all for, for the better, at a time when it was very very, very much need (P13; p.14).

Most parents that I interviewed had at least some experience outdoors. However, the impact and benefit for parents and families that did not have this experience appeared to continue and be reflected in their experiences during the COVID-19 pandemic.

Regardless of experience, I did have parents from both programs describe how they had created their own NBL during the remote learning period or returned to NBL spaces with their children. One parent who had a babysitter during this time explained the babysitter would "take the kids out into the forest, sort of like [nature program] but one-on-two" (P3; p.8). She explained that her children appreciated this time outdoors:

That was their favourite thing ever. They would do it all the time, forever. We actually started out I think with an hour or two, and often I would get a text partway through and I'd get a text saying "they are still having fun and want to stay out, are you okay if we stay out another hour or another couple hours?" (P3; p.9).

Another parent (P9) from the third program and who had their own nature play program, recreated the mud kitchen during the pandemic for her son and encouraged child-led activity similar to the

NBL program. Others borrowed from the program during the remote learning as well; one parent explained that they “bought hip waders and [they’d] wade in this awful marsh,...and [they] got bird identification kits so we could look at all the birds” (P13; p.10). This parent was one that lacked experience outdoors, but was able to return to a nature space that she was familiar with and had access to because of the nature-based program.

Overall, some parents with this nature-based program experience were creating their own nature experience using the knowledge and skills they either had previously or gained through their child’s NBL program. The parents applied their knowledge during the pandemic’s stressful times, facilitating health promoting behaviours for their families.

4. Connection

As with the first research question, the importance of connection and the many ways they maintained connection was discussed by most parents. During the COVID-19 pandemic, parents noted that connection was hindered by restrictions, only emphasizing its importance for health and wellbeing. Connection was a theme observed early in analysis. I developed four sub-themes: missing social connections; maintaining and deepening connection; clashing personal values and screens for connection; and new connections.

Missing social connections

Across most of my interviews, I heard about the challenges to create connection and the overall lack of social connection for children. Some parents felt their child was not too deeply impacted by remote learning during the pandemic. However, for one parent who was working to set a foundation that they could not achieve in their home environments, this lack of social connection was devastating. This parent found that their child had lost a lot of the social gains that

they had made through being in school: “COVID came and just completely killed every progress we made” (P13; p.9). Although her child coped through creating unique ‘worlds’ that she shared with her family, this parent explained her worries for her child from missing this social connection:

...so yes, she’s made this spectacular play mobile world, but which I think was an amazing coping mechanism and I think it did her really well but I wouldn’t necessarily phrase that as super healthy, because that is and kind of remains her social circle. If you her who her friends are, it’s her play mobile figures, which I just don’t think is the healthiest thing for development, like you know, not saying [child’s name] has to have thousands of friends but some social connections would be good (P13; p.9).

Other parents across both programs recognized this loss of social connection. They noticed how it was hard for their children to not see their friends or were unable to experience the program together, and worried about this lack of connection. One parent (P4) from the first program felt that the pre-recorded nature of their child’s lessons was a barrier to connection for their child, it was not until they had live lessons that they began to connect with the class. In other words, the pre-recorded class would limit connection, whereas the live lesson contributed to connection. She also expressed that she had lost the connection to her child’s school community; she understood that “they were just sort of reacting to these really changing circumstances, um, [but] at no point was there any feedback requested from parents” (P4; p.10).

Maintaining and deepening connection

Although there were many instances across my interviews where parents discussed how their children missed social connection, parents also discussed how they were maintaining and deepening connection, particular within their own family.

One instructor explained “all that we really focused on was just keeping up with connection” (P2, Instructor; p.15). She offered the opportunity to connect with children over video chats and posted videos online. She ultimately did not want to add to the stress of parents, only to keep the connection with the children and make it clear that she was there if they needed her. Similarly, the instructor of the third program explained:

I think too, for the parents who were feeling overwhelmed in that to know that they still had teachers who were willing to adapt and work with them, um they did, they did say that they appreciated that to still know that they had that school community, it was in a lesser capacity for them just because that’s what they could cope with, um I think that was the biggest thing, that they still had those relationships and didn’t feel like it was just gone once we went online (P6, Instructor; p.11).

Parents from this third program appreciated the connection to the school. One parent from this program explained how she experienced this connection:

I guess just the fact that they still had some connection to their teachers, and I thought it was great that after a couple weeks the teachers actually went back to the classroom and to the nature space that they were used to and took pictures there, and took pictures of the changes as spring came and turned into summer. So, um, that was really positive that they didn’t completely lose that connection to school (P10; p.9).

Maintaining connection to the school community was important for parents in my study. However, because of the increased time families spent at home it became “a great opportunity to connect with the family” (P2, Instructor; p.16). Some parents noted that the outdoors became a safe space to create connection with their family and friends: “it’s just a nice way, especially now with COVID, to spend time with people in a safe way” (P3; p.5). This parent also noted that time

outdoors for her children “deepened their relationship with [the babysitter] and with each other...[t]hey created all these imaginary games, little secrets that I couldn’t know about” (P3; p.10). Other parents in both programs noticed how the time together during the pandemic, both indoors and outdoors, deepened their connections to their family and friends. While at times constantly being around family could be challenging, parents felt that the time they spent together was a silver lining of the remote learning period and the COVID-19 pandemic:

Um but yeah, I would say that overall that a benefit was the amount of time that we did spend together as a family. You know, it was definitely challenging at some times but, overall, the amount of time that we did spend together. And a lot of it, a lot of it was difficult, but then a lot of it was also pretty good quality time too (P4; p.12).

Overall, the remote learning period was used by some families to maintain, grow closer, and further deepen their connections with one another.

Clashing personal values and screens for connection

Families in the NBL programs placed a high value on the outdoors. Unsurprisingly (given their inclination towards nature and time outdoors), most parents voiced their opposition of screens. Moreover, there seemed to be a fear of the influence of screens for these families. One parent shared that “I don’t know that I should say that I am proud to say, but I guess I am kind of proud to say that their screen time didn’t increase at all during COVID” (P3; p.10). One parent did not have internet in their home at the beginning of the pandemic, and another did not have screens in their home prior to the pandemic. Another had a computer, but they also “try and not to [sic] use the computer too much” (P7; p.9). They would use it for remote learning when they had to, but usually printed off lessons and then took them outside. For the parent who did not have internet in her home, she explained that she was:

[R]eally hesitant, to just put them in front of screen all the time, like I didn't want that to be how they, how they learned, and maybe in retrospect of that maybe two months of that, three months of that would have been okay, to make it a little bit easier on all of us (P5; p.10/11).

She clarified by sharing that the value they placed on limiting screen-time “probably made it a bit harder on all of [them]” (P5; p.11). This clash made it harder for her to allow screen time for school, and ultimately created more work for her during this period as she printed off worksheets and had to use creative methods (i.e., decorations and different colours) to be more successful with remote learning. Parents were not the only ones that felt this way. Two of the instructors that I spoke with expressed the same worry regarding screens, and felt it went against the tenants of their programs. Overall, an interesting clash of values took place for those in my study who felt connected to nature and identified this as a part of their being: they had to suddenly do everything by screen. Life became completely screen-based: school, work, family, and friends. This created internal tension for parents and instructors. For example, the instructor of the third program explained that a reliance on screens would be “against [their] philosophy” (P6, Instructor; p.10).

However, screens and technology became a necessary evil for these participants during the COVID-19 pandemic. The third program already had a technology platform in place that the instructor explained eased the transition for parents:

[T]he nice thing about our program, because we already had [online platform] with parents and they already had that relationship, they knew how to use it, um and had been accessing those learning throughout the year, we just switched our learning onto that, the very next day (P6, Instructor; p.9).

The instructor explained that for those who had been using the online platform all year long, it decreased the learning curve and made the transition to learning at home easier.

Although there was some fear of screens, a few parents found that the way that their program used screens was helpful. All three instructors utilized virtual spaces to connect with children and families. This space offered a line from instructors to children and created continuity. The children had experienced a huge change in their daily lives and they lost connection to their peers, their instructors, and the spaces that they had called their classroom for the large part of the school year. Instructors used the online space to continue to connect and continue the stories and experiences they had been cultivating over the school year. One parent explained that their kindergarten program created an online connection between children where “you’d take pictures of it and post it, so you could see what the other classmates were doing, and he quite enjoyed that actually, he really enjoyed that, sort of like seeing what everyone else was doing and it made him feel a bit more connected to his friends as well” (P4; p.10). Another parent explained how the virtual stories that the first program (Program A) created for their children provided continuity:

Again, I tried to really keep screen time to a minimum, so they did use them as like a way to up some screen time but in a way that I knew was, like it wasn’t some crazy killing cartoon, it was something that they engaged in and knew about because of [nature program] ...so yeah and the stories were continuations of stories they heard throughout the year I think, so it was nice for them to get that wrapped up and get the end of the story. Um, yeah, I liked listening to them to because they’d all sit around the fire and tell me stories (P3; p.11).

However, one parent avoided the virtual stories “because of that screen piece...[she] would rather them be outside and experience than listen and watch” (P5; p.11). Another parent found that the

stories the program posted for the children were non-starters for her child, even though her child enjoyed the stories pre-COVID-19 and remote learning. As mentioned previously, this child struggled to engage with the program when it was pre-recorded, but as soon as it became interactive, they became interested again.

For others, there was also a novelty to screens; one parent explained that “at first it was kind of exciting, because at their school they don’t do any technology, so it was kind of fun to use an app and use an iPad and take pictures, especially for [child’s name] who’s older” (P3; p.9). This novelty wore off for some and screens became a challenge. Another parent did not find screens successful because “they’re six, they don’t do well on Zoom (P13; p.9); others in both programs had this experience as well. Some parents noted that screens may also have been a challenge because, for the children, learning had been associated with the outdoors and the switch to a computer screen would be jarring: “it was a sudden switch over without an understanding of how to, just like well this wasn’t what we would do in school, um so much it seemed like more of a complete switch that was too quick to adjust to” (P8; p.7).

The experiences shared by parents demonstrated how virtual spaces and screens are used can either foster or hinder connection for some children. However, some parents that placed a high value on the outdoors and nature spaces, found it challenging to incorporate these tools for learning; their value on nature experiences and the increased need for screens during the pandemic clashed for these parents.

New connection

Another silver lining of remote learning and the COVID-19 pandemic shared by parents was the new connection they had to their child’s school. Parents from both programs explained that they had a better understanding of what their children were learning. One parent mentioned

that this will help them when their younger children would attend the program the next year.

Another parent further explained:

I think just actually being involved in my child's learning. I think um, when she used to come home and you'd say "what have you done today", it was always nothing, "done, nothing". Which you know is not true because she's covered in mud and everything else, you know, trying to get any form of information out of her was almost impossible. So, I think you know, when I was actually being sent the lesson plans and I was doing it with her, I knew exactly what she was doing, and so in that respect it was really nice to kind of be a part of it, and actually witnessing the development as well, was something that was quite special (P7; p.12).

This new connection to learning was also helpful for one parent because of the ability to individualize her older child's learning. She explained that:

[I]n some ways it was kind of nice to see, to be that directly involve in their learning, for my son who was in grade three at the time, like the novel study, he reads like crazy and his comprehension is great, so there was this big novel study that was taking up a lot of time and so I hadn't noticed that he was really struggling in math, and so we just, did not do the novel study and spent twice as much time on math, and so that flexibility, um, seemed good, and ... set him up better for school this year (P5; p.10).

This connection to her child's learning left her more in-tune to some of the gaps in her son's learning. The flexibility of remote learning made it possible for her to switch the focus of their learning time to address some of these gaps. However, this parent and their younger child still experienced challenges when it came to remote learning: "we didn't just throw in the towel, but I

certainly felt like doing that quite a lot” (P5; p.10). This parent suggested this challenge may be because of the development and maturity of the child.

Although the COVID-19 pandemic brought on many challenges for parents, participants shared that a novel connection to their child’s education was a benefit of the remote learning period, one that they may not have had otherwise.

Conclusion

The perceptions of NBL programs shared by parents and instructors provided insight on learning in the natural environment for young children. Additionally, exploring parent experiences of remote learning during the COVID-19 pandemic highlighted the challenges that parents, specifically mothers, faced during this time. These findings are explored and discussed in the next chapter (Chapter 6).

Chapter 6: Discussion

The dual purpose of my research was to explore parents' and instructors' perspectives on how learning is experienced in the natural environment by young children (research question one) and the remote learning experiences of the first few months of the COVID-19 pandemic (research question two). The results of my analysis offered both expected and unexpected findings that broaden the view of the benefits of NBL for learning in response to my first research question. The results from my second research question shed light on the challenging experiences for mothers during the COVID-19 pandemic. The findings for both research questions, separately and together, have implications for NBL stakeholders and policy influencers in Alberta. These implications will be addressed as policy implications at the end of this chapter (p.123).

In the literature review (Chapter 2), I examined the limited knowledge regarding NBL. Despite a lack of research (at the time) regarding NBL programs, nature experiences for young children were found to benefit the health and development of children (e.g., Barton et al., 2015; O'Brien, 2009) and encouraged risk and power in a natural setting (Haywood-Bird, 2016; Coe, 2017). Consequently, encouraging the uptake of NBL can positively impact both children and instructors (MacQuarrie et al., 2015; Cosgriff, 2017). A connection between children and nature appeared vital to the health and wellbeing for child and instructor, yet the majority of research approached this area from a pedagogical lens. Through this lens, NBL programs are viewed and examined as education programs. My research diverged from the current body of knowledge in that it focused on health promotion (expanded upon below).

Despite the limited academic scholarship on the topic, NBL experiences continue to grow (Raisingedmonton.com, 2020; Dashingdad.ca, 2021), particularly in light of the COVID-19 pandemic (Hubbart, 2021). This research study makes a unique contribution to the existing

research by taking a health promotion intervention lens rather than an education or pedagogically-oriented lens. Reflecting back on the Introduction (Chapter 1), health promotion is “the process of enabling people to increase control over, and improve, their health” (p.1). To achieve a state of health an “individual or group must be able to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment” (WHO, 1986, p.1). Building on the work of Maller et al. (2006), who suggest that nature can be utilized as a primary health promotion intervention, I utilized a health promotion intervention lens to understand how NBL programs can be used to promote health and wellbeing for children, families, and communities. To facilitate this, I explored the experience of learning for children in the program from the perspectives of parents and instructors. Parental and instructor perceptions contributed to my conceptualization of how NBL programs can positively impact childhood health and wellbeing. An unexpected finding of my research was the health promoting behaviours that parents described for themselves, their families, and their communities, further supporting the use of NBL programs as health promotion interventions.

Key findings from the first research question shared in Findings (Chapter 4) included: the use of NBL to provide a healthy foundation for learning; experiences in nature and the positive impact on health and mental health development; community building generated through NBL programs; and nature and outdoor-specific knowledge sharing that built capacity in both children and parents. In this chapter, I will discuss these findings and how they connect to one another and the themes from the second research question (Section: Nature-Based Learning as a Health Promotion Intervention).

My second research question revealed to me a connection between parents’ experiences with NBL programs and their experiences during the remote learning period of the COVID-19

pandemic. Key findings from my second research question shared in Findings (Chapter 5) included: balancing responsibilities (professional and personal); mothers appeared to bear the burden of remote learning; nature was used by families to mediate the negative effects of the COVID-19 pandemic; and connections were lost, maintained, and strengthened during the remote learning period. Similar to the results of the first research question, I will discuss the findings and how they connect to one another and the themes from the first research question (Section: Nature-Based Learning as Mediator During Periods of Stress).

Nature-Based Learning as a Health Promotion Intervention

Reflecting on the conceptual claim developed to describe the findings of my first research question, I position NBL programs as a health promotion intervention that impacts many spheres of influence. Using participants' experiences, analysis of the data, and my own experiences, knowledge, and perspective, I will present an argument for the use of NBL programs as a health promotion intervention to positively impact child, family, and community health.

1. Nature as a Foundation for Education

Aligning with the purpose of this study, parents described the experience of learning in the natural environment for their young child. They shared the skills and knowledge their children gained as well as their children's enhanced love and appreciation for learning as a result of these experiences. This love and appreciation was reported to carry forward into the remote learning period and subsequent education experiences following this year (i.e., 2020; for further details see the discussion of research question two section: Nature-Based Learning as Mediator During Periods of Stress). The natural environment's ability to provide a healthy learning environment in

a NBL context, with an emphasis on mental health, was discussed by participants in relation to both the pre-COVID and the COVID-19 remote learning period.

Healthy start to learning

The positive benefits of nature experiences for children have been studied previously (Mygind et al., 2019; Miller et al., 2021). Parents shared the tangible learning that they witnessed in their children. In particular, parents felt that their children gained risk assessment, resiliency, creativity, independence, team building and cooperation, and empathy. The natural environment lends itself to the development of these skills using naturally occurring features of the space (e.g., weather, creeks and streams, rocks, plants, animals, and trees). This is supported by current literature as the varied complexities of the natural environment support different types of play experiences for children (Fjørtoft, 2004). One instructor explained that they did not have to supply anything to create these opportunities, that the environment naturally created obstacles and learning opportunities for them. This connects to the theory of affordances (Gibson, 1977); the natural environment abundantly affords these learning opportunities for children. In this way, the current study reinforces the current literature on NBL.

A systematic review of outcomes of NBL for primary school-aged children found positive outcomes across five criteria: physical activity, mental health and wellbeing, educational, engagement, and social outcomes (Miller et al., 2021). Authors noted methodological concerns (relevant to quantitative research) and suggested that studies in this review should be cautiously interpreted (concerns included: sample size justification and description, outcome measure validity and reliability, etc.; Miller et al., 2021). Supportive of parent's positive perceptions of their children's learning experiences in these NBL programs, Miller et al. (2021) found that of outcome measures, education measures were the most commonly reported and were consistently positive.

Nature spaces create abundant learning opportunities for children and connects to the theory of affordance to foster learning through interaction with nature (Miller et al., 2021; MacQuarrie et al., 2015; Nicholson, 1972; Gibson, 1977). Moreover, their review found that children simply enjoyed the experience more (Miller et al., 2021). This is an idea supported by the perceptions of parents in my study. Not only are children gaining knowledge and skills, they appeared to enjoy learning in these environments. Through this, NBL programs have the potential to offer a healthy, supportive environment that creates learning opportunities and may establish a healthy foundation for future learning.

Health and mental health development

Nature spaces have health promoting aspects such as improved mood (Bratman et al., 2012), attention (Kaplan, 1995), recovery from stress (Brown et al., 2013) and improved self-esteem, self-efficacy, and resiliency (Mygind et al., 2019) that NBL programs leverage for young learners. In these spaces, parents and instructors explained how children learned to regulate their emotions and utilize nature as a space for balance. Parents described the benefits they observed for their child's mood, the increase in resiliency, and healthy coping mechanisms (i.e., going outside when they have spent too long focusing or need space from siblings). Sense of place may cultivate socio-emotional skills for children (Brillante & Mankiw, 2015); connections to the earthly environments may create opportunities for socio-emotional and mental health development. As demonstrated in the Findings (Chapter 4), instructors described the connection between place and mental health for children as heightening children's senses, while simultaneously grounding them in nature. Children can also learn to manage their emotions, which can be considered a form of self-regulation, in a safe outdoor environment (McCree et al., 2018). In a systematic review, immersive experiences in the natural environments were demonstrated to have some benefits for children and

adolescents' mental health, with benefits for self-esteem, self-efficacy, and resiliency (Mygind et al., 2019). The positive impacts on mental health and wellbeing from NBL (Miller et al., 2021) are important during childhood and for future mental health (Miller et al., 2021; Preuß et al., 2019). Most parents in this study described their own childhood experiences in nature as contributing to their appreciation for nature and justification for enrolling their child in NBL. I have not (nor do I have the capacity or expertise) assessed mental health statuses but these childhood experiences were described as formative childhood experiences for parents. Childhood experiences such as these are a social determinant of health (WHO, n.d.). Their importance for parents, and parents seeking similar opportunities for their children, are suggestive of the positive impact these nature-based experiences have in childhood.

An indirect pathway to improved mental health may be increased physical activity as a result of nature-based experiences. In the previous systematic review, physical activity was consistently fostered in NBL and statistically significant (Miller et al., 2021). This was supported by some parents in my study who discussed the increased physical activity that resulted from nature-based experiences for their children. Increasing physical activity for children can positively impact mental health (Ahn & Fedewa, 2011). Nature exposure in childhood may act in various ways to contribute to health and mental health in childhood and later in life. The increased activity reported by parents suggest that NBL programs can potentially impact mental health via increased physical activity (Miller et al., 2021; Ahn & Fedewa, 2011).

Self-regulation, being the ability to manage emotions and behaviour, can be developed in the natural environment (Ernst & Burcak, 2019). Self-regulation begins to develop in early childhood and contributes to academic success and readiness for school (Montroy et al., 2016). From the perspectives of the parents and instructors in this study, children used the natural

environment to explore and release ‘big feelings’ and energy. Outdoor spaces afford safe spaces to explore emotions and physicality according to these participants. Child-led opportunities in the natural environment may contribute to the development of self-regulation through intrinsic motivation, while it is suggested that the ample opportunities created in natural spaces may indirectly contribute to this development as well (Ernst & Burcak, 2019).

2. Capacity Building in Communities

Capacity building in school communities increases the collective ability to enhance student learning and experiences (Clark, 2017). This both acts on the individual level and at a systems level to increase school community stakeholders’ ability to enhance student experience (Clark, 2017). Building school community capacity is a multifaceted endeavor that requires infrastructure, support, and programming development at all levels; however, this capacity building can contribute to sustained and continuous improvement (Hoyle et al., 2008). Findings from this study suggest that NBL built capacity for children, parents, and instructors. Through building capacity, NBL programs impacted children’s learning, fostering the attainment of relevant knowledge and skills. Unexpectedly, the program also impacted parents’ learning to build their knowledge and skills as well. This capacity building was more apparent for children and parents without prior outdoor experience, with significant health promotion implications during the COVID-19 pandemic (discussed in Section: Nature-Based Learning and Health Promoting Behaviours).

Contextual knowledge and knowledge brokering for children

In NBL programs, nature facilitates the experience and creates learning opportunities for children and instructors. Nature in this respect is viewed as a ‘teacher’ by instructors; this is an idea that is supported by previous literature (MacQuarrie et al., 2015). These “human-nature

interactions” (p.16) became learning opportunities created by the natural environment that are “open-ended and varied” (MacQuarrie et al., 2015, p.17). Nature offered children in NBL programs: the opportunity to observe interactions in nature stimulating inquiry and imagination; naturally occurring challenges that created opportunities for cooperation and creativity; and the opportunity to explore risk and physical literacy using naturally occurring features. Imagination and dramatic play through cognitive development and physical activity have both been demonstrated to be positively impacted by nature play (Dankiw et al., 2020). Acquisition of social relations (i.e., decreased teasing, enmity, disturbances, and boredom outdoors vs. indoors; Mygind, 2019), exploration of risk (Coe, 2016), and cognitive, creative, and emotional developments (Gull et al., 2018) through nature exposure and NBL are all supported by the current body of literature. With the understanding gained from my literature review, I was able to explore gains beyond skill acquisition during my interviews. Some parents shared the idea that children were not just experiencing learning opportunities, they were developing context-specific knowledge. For parents from the rural town located in the Rocky Mountains, children were learning how to prepare for the outdoors and how to use resources to survive in outdoor settings. Additionally, most parents interviewed observed increased resiliency and an ability in their children to cope with changing environmental elements. Nature preschools have been previously studied and have been shown to increase protective factors (resilience, self-regulation, and initiative, both at home and school) to mediate stressors (Ernst et al., 2019). Enhanced resiliency in nature-based programs has also been documented previously (Mygind et al., 2019). Changing and adverse weather contributed to the learning experience as one instructor had explained, which is a finding supported by MacQuarrie et al. (2015) where weather increased the possibilities for learners. My findings, supported by other research, demonstrate that children are gaining resiliency and other ‘soft skills’ through NBL

programs. Novel to the current body of research, children may be acquiring knowledge and skills that are specific to their geographic setting.

As nature becomes the ‘teacher’ in this education space, instructors become co-learners and ‘knowledge brokers’ in this arena. Knowledge brokers transfer knowledge from the source to potential users potentially transforming the knowledge (Kauffeld-Monz & Fritsch, 2013). Teachers similarly act as brokers in school settings, interpreting and sharing knowledge and expertise with students (MacDonald, 2014). In NBL programs, instructors shared traditional (e.g., writing and arithmetic) and non-traditional (e.g., plant and animal knowledge and outdoor survival skills) knowledge with children developed from their own education and experience. Parents recounted how their child’s knowledge of the natural world increased alongside their academic knowledge. Most instructors that I spoke with had lengthy experience and expertise in outdoor settings that supported their nature-based instruction. This knowledge was then shared with children, and indirectly with parents. Although they viewed themselves as mentors and co-learners, NBL instructors held a special power in these outdoor spaces. The instructors are actors that influence how knowledge is shared in education and can establish programs that share outdoor knowledge and skills while being embedded in curriculum outcomes (Cudworth, 2020).

In these programs, children acquire contextual knowledge from both the environment and the instructors, impacting learning.

Children as environmental stewards and advocates

Children can act as drivers of change for health promotion initiatives (Burrows, 2017), both as targets and agents for change. For example, children and youth have been effective target audiences for anti-smoking, anti-substance abuse (e.g., D.A.R.E), and seat belt initiatives in recent history (Tobacco Free Kids, n.d.; SAMHSA, n.d.; CBS News, 2019). Moreover, children are

particularly important health promoting agents within family networks (Montgomery-Andersen & Borup, 2012). Children have been found to be important transmitters of health knowledge and can promote positive health behaviours (e.g., healthy eating, physical activity, etc.) and public health campaigns (Burrows & McCormak, 2014). Climate action and environmental health have direct and indirect implications on human health. Encouraging pro-environmental behaviours and climate advocacy may impact climate change, subsequently impacting human health. In this study, children gained an appreciation for the natural environment. Parents shared that, as a result of NBL, their children were more aware of the natural environment and were developing an understanding of and discussing environmental stewardship and climate action concepts such as “leave no trace”. Children can be the target audience of climate action initiatives. Battisti et al. (2018) suggest that children can be effective change makers to support conservation action in communities. Broom (2017) found a connection between young adults with childhood experiences in nature and later concern for the environment, although this may not translate to environmental action and requires further research. Conservation action by children can be created through awareness, active participation (e.g., restoration projects, tree planting, and clean-ups), and activism where they can develop and sustain initiatives (Battisti et al., 2018). NBL programs may act as a precursory step, planting a seed for action.

Connection to the environment offers young children the opportunity to engage with plants and animals, observe ecosystems, and experience the sensations of nature. The parents in this study described how NBL fostered their children’s understanding of these spaces and creatures. Children’s support for conservation may be beneficial in areas with low environmental awareness and/or low pro-environmental behaviours and attitudes through novel child-led approaches (Battista et al., 2018). In Alberta, Canada, the neoliberal political agenda focuses on energy

generation (Government of Alberta, 2022) to the detriment of natural spaces and resources. However, nationally, Canada has committed to a net-zero greenhouse gas emission policy to slow climate change (Government of Canada, 2021). As demonstrated above, parents shared how their children gained an appreciation and awareness of the natural environment, fostering meaningful conversations about conservation. Generating an appreciation and awareness for the environment in early education settings can increase children's capacity to support and advocate for natural space and resource preservation, climate change action, and environmental health across Canada. In this way, scale-up of NBL programs in early education has important medium- and longer-term implications for political climates with low pro-environmental behaviours and attitudes.

Facilitating outdoor contextual knowledge and experiences for parents

The majority of parents that I interviewed had some experience in outdoor environments. These parents likely appreciated the program as it upheld family values, shared their love of nature spaces with their children, and created community connections for parents. As described in the Findings (Chapter 4), one parent shared that she had organized an adult NBL event for their friends. This example (among others described in Chapter 4) demonstrates how a parent's exposure to their child's NBL program fostered further capacity building and community building through sharing the outdoor specific knowledge and skills acquired. Outdoor learning experiences were found to create healthy connections and a sense of belonging in a young adult population (Bell et al., 2014). The two parents who did not have previous outdoor experience shared how they changed because of their child's involvement in the NBL program (e.g., developed a love of the outdoors, more comfortable going outdoors, moving closer to nature spaces). Learning how to prepare herself and her family (e.g., clothing) was identified as an important facilitator for one parent's experiences outdoors. Outdoor clothing and gear are complex and impact safety, comfort and performance for

the wearer (Morrissey & Rossi, 2014); learning outdoor specific knowledge such as this through a NBL program can remove barriers for some families, as suggested by my findings. NBL programs may facilitate outdoor access, knowledge, and skills for many children and families; however, the high cost of NBL programs may be a barrier for some populations, which should be considered when developing policies practices.

Capitalizing on instructors as ‘knowledge brokers’ and the learning opportunities afforded in natural settings, NBL programs can build capacity for children. Interestingly, findings from my study also demonstrated that NBL programs may build capacity for parents, to utilize the spaces and facilitate access, to benefit their health and wellbeing and increase social connections.

Nature spaces and community building

Social cohesion is a concept that encompasses the interpersonal dynamics that contribute to quality of life and health and wellbeing (Jennings & Bamkole, 2019). Notions of trust, belonging, acceptance, and connection all contribute to social cohesion (Hartig et al., 2014; Comstock et al., 2010). Outdoor spaces facilitated rich and authentic connections and acceptance for the participants in this study. Some described how time spent in nature constructively brought their family together, contributing to their overall health and wellbeing.

Social cohesion has been demonstrated to be positively influenced by time spent in nature and green spaces (Peters et al., 2010; Jennings & Bamkole, 2019). Natural spaces create settings for people to spend unstructured time outdoors, thus creating opportunities for cohesion and social contact, and ultimately promoting health (Hartig et al., 2014). In their review, Hartig et al. (2014) found that social cohesion was a pathway between natural environments and health and wellbeing. Social cohesion and connection can be facilitated through physical attributes (e.g., views, open spaces) or the opportunity for collaborative activities in these spaces (e.g., cycling, running, a

picnic) (Peters et al., 2010). Further, these natural spaces can support social connection through encouraging positive interactions and pro-social behaviour (Jennings & Bamkole, 2019). These spaces are perceived as inclusive and while they do not support intense social interactions between groups, one-off or cursory interactions are promoted (Peters et al., 2010). However, these spaces are utilized for family and friend interactions (Peters et al., 2010). In my study, parents and instructors described the ways children became team players in nature spaces through collaborative activities in the outdoors: the spaces offered challenges for children that required collaboration and teamwork to overcome. Connections to the nature space like this create social cohesion (Peters et al., 2010). Interactions and bonding in these natural spaces help to create a sense of community (Cattel et al., 2008). Natural spaces and their social benefits can be leveraged and inform community health initiatives so that any resultant social cohesion contributes to community building and the promotion of healthy, connected communities (Jennings & Bamkole, 2019). In my study, community building through social interactions and knowledge sharing was an unanticipated outcome of NBL, suggestive of the underutilized potential of NBL to influence health and wellbeing in communities more broadly.

Summary

Based on the perceptions of parents and instructors, NBL programs capitalize on the benefits of nature spaces to support childhood health and development. In addition to this, NBL programs can facilitate connections between children, parents, and nature spaces to encourage social cohesion and connection to place, which may promote sense of community and environmental stewardship activities. An unexpected finding from this research was the positive impact NBL programs may have on parents and families, through the sharing of outdoor specific

knowledge and skills. This knowledge promotes positive health behaviours and may be even more pertinent for families that lack experiences in the outdoors. The positive impacts NBL programs have on child, family, and community health, situate these programs as potential health promotion intervention that leverage the inherent benefits of a readily available resource (i.e., nature and green spaces) for health and wellbeing.

Nature-Based Learning as Mediator During Periods of Stress

Again, reflecting on the conceptual claim developed to describe the findings of my second research question, I have shared the generally challenging, but occasionally positive, remote learning experiences of mothers during the COVID-19 pandemic in Findings (Chapter 5). Building on the discussion of Findings (Chapter 4) from the first research question, I will present the idea that NBL programs, as a community health intervention, can foster positive health behaviours as a health initiative that may mediate the ill effects of immense stress. These spaces can again be capitalized on by policy influencers in preparation for similar, future crises.

1. Nature-Based Learning and Health Promoting Behaviours

The benefits of nature spaces perceived by children and parents transcended beyond pre-COVID-19 NBL programs, into the remote learning period imposed on children in Alberta during March – June 2020 (the first few months of the COVID-19 pandemic). As described in Findings (Chapter 5), for the participants in this study, nature became a life raft that uplifted families and created opportunities for them to thrive despite the unprecedented and immense stress created by the COVID-19 pandemic and related public health restrictions. All parents described ways their families frequented nature spaces during this time (influenced directly and indirectly through

NBL). From the perspectives of parents, time outdoors was important as it created a sense of normalcy, created balance for parents (e.g., created time for work or self-care), improved mood, increased focus, contributed to resiliency and coping, and decreased stress. This is consistent with recent literature documenting people's increased use of green spaces during the pandemic, which stated that participants utilized these spaces to reap the mental and physical benefits of green spaces (Bendejo-Espinola et al., 2021).

Nature spaces for health promoting behaviour during times of stress

Time spent in outdoor spaces and connection to nature could be understood as a health promoting activity for children because of the benefits previously reported. However, during the COVID-19 pandemic, these outdoor spaces in general became an important space for health and wellbeing for the entire family. Evidence suggests that while the COVID-19 related policies and practices (e.g., physical distancing, park and recreation closures, and masking) enforced by local governments protect the physical health of citizens, they also may negatively impact their mental health (Puoso et al., 2021). Outdoor spaces were used by parents and families in my study as a reprieve from both ordinary life stress and the extraordinary and overwhelming COVID-19 related stress. The outdoors became a space for peace, calmness, and emotional regulation that both children and parents experienced. Research supporting the use of nature spaces for mental health has increased since the onset of the COVID-19 pandemic (e.g., Soga et al., 2020). Soga et al (2020) examined the association between utilization of green spaces and five mental health outcomes. They found that frequency and presence of green space (or green window view; i.e., views of nature spaces from the home) were associated with decreased depression, anxiety, and loneliness, while increasing self-esteem, life satisfaction, and happiness for people living in Tokyo, Japan. This is not only a pandemic-related phenomenon. Nature views and enhanced mental health have

been positively associated with and likely act in a number of ways to create this outcome (e.g., sights and sounds of nature through the window, sunshine increases mood regulating chemicals) (Penckofer et al., 2010; Soga et al., 2020). All the parents in my study reported both living near green spaces and having green spaces at their residence (i.e., front yards or backyards). Recall the parent in Chapter 5 who shared that because of their experiences in the NBL program, they moved to be near nature spaces, which facilitated enhanced access and opportunities for that family. This parent and other parents in my study appeared to make health promoting choices during the pandemic because of their experience in nature, and for those with limited nature experiences, because of their child's experiences in NBL. In a study of green space use, females (like my study's parent participants) reported an increased importance of these spaces for social and family interactions (Bendejo-Espinola et al., 2022); this is supported by my findings. As such, based on my findings nature and outdoor spaces can be used as a health promoting initiative during times of immense stress to mediate potential negative effects.

As demonstrated in the first section (Nature-Based Learning as a Health Promotion Intervention, p.100), facilitating access to the outdoors through NBL for young children and their parents builds capacity over the program period, creating a foundation of enhanced awareness, knowledge, and skills for outdoor experiences. Building on this, my research suggests that, over an extended time-period, building capacity contributed to the ability of children and parent to navigate the COVID-19 pandemic and weather the stresses of the pandemic using nature and outdoor spaces as a life raft. These experiences suggest an extended impact of NBL programs. Through building capacity (i.e., sharing outdoor specific knowledge and skills and access to nature spaces), families are making decisions during the pandemic that positively contribute to their health and wellbeing, such as visiting nature spaces in times of stress. Following Hurricane Katrina,

neighbourhood parks were used as post-disaster recovery tools where citizens visited green spaces to help cope with an immensely stressful catastrophe (Rung, 2011). Utilizing the outdoors as a strategy to promote mental health, at a time when mental health was negatively impacted globally, situates NBL as a capacity building, health promotion initiative for child and family health.

Contributing to and building upon NBL programs' capacity to promote health and wellbeing, policy influencers should advocate for organizational change to support NBL policy and programs. With increased NBL programming, we can actively and proactively mitigate the negative impacts of extreme environmental stressors (Heward et al., 2007).

2. Nature Spaces and Virtual Spaces for Connection and Community Building

Nature spaces were described by the majority of parents and instructors as a space for connection, especially during the pandemic months. For those with and without previous outdoors experience, NBL provided knowledge and skills that were shared with others in both the children's and parents' communities. Because of the value parents placed on outdoor spaces and experiences, they shared their aversion and avoidance of screens and computer-based learning, particularly during the COVID-19 pandemic. However, my findings suggested that judicious and deliberate use of screens could be framed as a tool to benefit parents in future, necessary remote learning periods.

Connection to nature

The "Biophilia Hypothesis" claims that humans have an innate desire to connect with nature (Wilson, 1984; Gullone, 2000). As our world becomes increasingly technologically inclined, an arguably contrasting interest in connecting with nature has emerged in response (Louv, 2008). Urbanization alongside environmental and lifestyle changes also decrease connection with nature

(Hartig et al., 2014). These ideas were present in my study. All of the parents I interviewed felt the natural environment was an important part of their own lives and their family's lives and identified as 'outdoorsy' in some capacity. They had a connection to the natural space and most had previous outdoor experiences in nature as well. Some parents shared that these natural spaces were important to them because of the social and personal connections the natural space facilitated for them. This was also identified as important in NBL programs. For example, Forest Schools, a form of NBL, have been suggested to create these connections between children, natural spaces, and the creatures that live in those spaces (Cudworth, 2020). Such connections contribute to the empathy children build for the environment as discussed above (Nature-Based Learning as a Health Promotion Intervention, p.100). With increasing concern that children are disconnected from nature (Louv, 2008), NBL becomes a bridge between children and nature spaces, embedded in a potentially widely accessible platform (e.g., a publicly-funded public education program). Fostering a strong connection to nature and nonhuman creatures may be more important for children than academic outcomes and expectations because of this connection to space, grounding, and engagement with the environment that can benefit health and development (Cudworth, 2020; Summers et al., 2019).

Nature spaces for safe connection

During the COVID-19 pandemic, increased restrictions and a shift to remote learning and 'telecommuting' for children and parents reduced in-person connections. This shift was intended to be short-term, however the ease and safety of working and learning from home while the COVID-19 pandemic continues (2.5 years at the time of writing) has influenced many individuals and families to continue to utilize these options for work and school.

Yet, participants in my study described the ways in which their children and families lost connections to their school communities and peers during their remote learning period in 2020. This is consistent with experiences elsewhere, where severe restrictions and confinement negatively impacted mental health (Puoso et al., 2021). However, my findings suggest that although they lost connections, most families in this research cultivated meaningful connections within their family during time spent outdoors together. A silver lining of the remote learning and COVID-19 period for many parents was the increased connection their families experienced with each other. Some parents shared that the outdoors created deeper connections with family and friends and became a strategy to safely spend time with people. The health benefits of social connection in nature spaces may have been even more pertinent during this period. Activities outdoors with others capitalize on the environment's ability to promote physical and mental health through many pathways such as increased air quality, physical activity, social cohesion, and stress reduction (Hartig et al., 2014; Jennings & Bamkole, 2019; Gullone, 2000). Contact with nature during periods of enhanced public health restrictions to mitigate disease spread (e.g., "lockdowns") contributed to positive coping for individuals and positive emotions with access to outdoor spaces (Puoso et al., 2021). The benefits of nature likely contributed to the health and ability to cope for families during the COVID-19 period, by creating a safe space for connection.

Nature and screen time as a tool

Pedagogical methods that foster childhood learning and development continue to shift and adapt to changing educational and technological climates. One of the emerging trends in education is the increasing incorporation of technology as a platform for learning, which may beneficially increase access to education (World Bank, 2020). Education technology includes the "hardware, software, digital content, data, and information systems in education" (p.6); these technologies can

be included to increase access and quality of education for all students (World Bank, 2020). However, the inclusion of education technology may be at the detriment of child-led, exploratory play (Pedretti et al., 2012). The appearance of education, and more specifically screen-based, technology in the classroom was worrisome pre-COVID-19, as such technology may exhaust cognitive functioning in young learners (Schilhab, 2017). Moreover, children have been adopting an increasingly sedentary, screen-based experience (ParticipAction, 2020) with adverse impacts to their physical and mental health. Unfortunately, the choice to use education technology (such as computers, tablets, or communication platforms like Zoom) during COVID-19 was removed for many. As reported above, screen time increased significantly during the early COVID-19 period for both children and adults for many reasons (i.e., remote learning, working-from-home, recreation and leisure) (Zajacova et al., 2020; Moore et al., 2020). While this is not inherently negative, excessive screen-time can have negative impacts for children. Moreover, considering the value parents in my study placed on outdoor experience, I was not surprised to hear that most parents experienced a clash or even a fear regarding the use of screens for remote learning. This fear was valid: in a review of screen time during the COVID-19 pandemic, prolonged screen time (defined elsewhere as ≥ 8 h/day of screen time; Meyer et al., 2020) had negative effects on physical (e.g., sleep disturbances) and mental health (e.g., anxiety and depression) for children and adults (Pandya & Lodha, 2021). However, recall that one parent in my study who experienced challenges with remote learning felt that, in hindsight, avoiding screens during remote learning had its own difficulties. Perhaps for some, embracing the benefits of screens to create connections (e.g., storytelling in the NBL programs in this study) and facilitate learning would decrease the burden on parents and ease the challenging experience that some parents had during remote learning with their children.

A few parents shared how they avoided the use of screens during remote learning and one was proud that their children's screen time did not increase. Even more parents shared that they ventured outdoors to experience what they were learning or to balance indoor time (Program C actively promoted this as well). In a review of the impacts of screen time and nature time ('green time') on psychological outcomes for children and adolescents, authors found that high levels of screen time were associated with worse outcomes, and 'green time' with better outcomes (Oswald et al., 2020). The authors suggest that 'green time' "may currently be an under-utilized public health resources, and could potentially function as an upstream preventative and psychological well-being promotion intervention" (Oswald et al., 2020, p.39). NBL may act to balance the effects of the increasingly technology-focused (e.g., screen based) learning landscape through the restorative effects that nature can have on emotional state (Roe & Aspinall, 2011). This sentiment was shared by some parents in this study who felt that using outdoor time during remote learning helped balance virtual learning with the outdoor learning and playing they were used to at (NBL) school. Learning in the natural environment may act to counterbalance the decreasing time spent in nature outside of school and offset the effects of learning supported by technological platforms within school (Larimore, 2016). Extrapolating from this, nature may act to balance the increased screen time experienced by many in the 'new normal' set off by the COVID-19 pandemic.

Technology can have pointed use and disuse and creating and maintaining boundaries for this use and disuse is key (Helms et al., 2019). Increased social media usage has been suggested to negatively impact mental health (Aziz Rahman et al., 2020); therefore, how technology and screens are used is important (e.g., social media may increase anxiety and depression; communication-based technology can reduce social isolation and loneliness). Although prolonged screen use and technology can have many negative impacts on health, screens are somewhat

unavoidable in the increasingly digitalized, post-COVID-19 world because of their capacity to facilitate socio-emotionally connection (Pandya & Lodha, 2021). Therefore, promoting healthy technology habits and boundaries for screen time may mitigate the negative effects for children and adults (Pandya & Lodha, 2021).

Screens can have utility to increase social connection during periods of social isolation and ease the strain on parents as a tool for remote learning, when required and with clear boundaries. This tool may then act in concert with time in the natural environment to balance the potentially negative impacts of screen time.

3. Mothers and Nature-Based Learning during the Pandemic

While gender was not included in recruitment criteria for participants, all parent participants identified as females and as mothers to the children in the NBL programs. Parental involvement in education traditionally attracts mothers (Reay, 1998), potentially influencing my recruitment of parents. There are two potential explanations for the gender homogeneity of my participants that I have explored in more detail below, although it is likely a combination of many factors that have resulted in a sample of only mothers (of parent participants). One recruitment criterion was experience with remote learning during the COVID-19 pandemic. It was well documented that mothers and females faced more challenges during the COVID-19 pandemic, when compared to fathers and males (Dang & Nguyen, 2021; Alon et al., 2020; Aziz Rahman et al., 2020; Qian & Fuller, 2020; Foucault & Galasso, 2020). Therefore, it is possible that my study participants reflected a larger, global issue where females bore the brunt of home responsibilities (including remote learning) during the pandemic. Another option explored further below is that a

female sample could indicate more females venturing into traditionally male dominated spaces (Glotfelty, 1996; Bowen, 2018; Jorgensen et al., 2012): the outdoors and wilderness spaces.

Gender inequities during the COVID-19 pandemic

The gap in opportunities, resources, and compensation between men and women is well documented (Pelletier et al., 2018; Moyser, 2017) and creates ongoing social and economic inequities for women (Moyser, 2017; Fox & Moyser, 2018). These gaps were amplified during the COVID-19 pandemic. Dang and Nguyen (2021) found, in a global study of gender gaps and economic outcomes, that women were more likely than men to lose their jobs, expect labour income to fall, and plan for job loss (countries included China, Italy, Japan, South Korea, the United Kingdom, and the United States). The COVID-19 pandemic has impacted sectors that typically have a higher proportion of female employees; females have fewer telecommuting opportunities than males, while also facing increased childcare demands with school and daycare closures (Alon et al., 2020). Identifying as female was associated with increased psychological distress and fear of COVID-19 in an Australian study (Aziz Rahman et al., 2020). Women are also more likely to hold part-time positions and earn lower wages, increasing the likelihood that mothers would endure the challenges of caregiving and home responsibilities during the pandemic (Qian & Fuller, 2020). Gender norms may also position mothers as caregivers (Qian & Fuller, 2020); these entrenched ideals may also impact who supported the remote learning responsibilities for children. This global phenomenon played out in my findings. Mothers in my research shared that they took on remote learning responsibilities because of how their work was structured compared to their partners, that they lost their job, or their role was as a stay-at-home parent. Foucault and Galasso (2020) found that women were more likely to stop working in some countries, this included Canada. Taking on the remote learning responsibilities was, for the most part, not a

choice. In my research findings, mothers were at home with their children and fathers were not. This circumstance echoes other research. In a study conducted at the onset of COVID-19 pandemic, Qian & Fuller (2020) found that, among parents in a Canadian sample, mothers' employment was more affected by the pandemic and that the gap in employment increased more for parents of elementary aged children. The authors suggest that funding childcare provision and flexible leave options are needed for pandemic recovery (Qian & Fuller, 2020). Childcare was a facilitator for two mothers in my research, allowing them to continue to work while their child/ren were cared for by paid childcare. However, one shared that she still lost productivity. The increased responsibility and diminished support faced by mothers was not unique to this study. Gender inequities are deep and enduring in our systems and societies, and the COVID-19 pandemic has exacerbated these inequities for women and mothers. The experiences of the mothers with respect to remote learning in my study during the COVID-19 pandemic reflected a global trend, where women are bearing the brunt of pandemic-related barriers and challenges (Qian & Fuller, 2020; Foucault & Galasso, 2020; Alon et al., 2020). For reasons that are outside the scope of this research, mothers in my study appeared to carry the weight of remote learning during the COVID-19 pandemic.

Females in nature spaces and outdoor recreation

Females were disproportionately impacted by the COVID-19 pandemic and the mothers in my study shared similar challenges. However, they also shared their experiences in nature spaces both pre-pandemic and during the early months of the pandemic (March – June 2020). Outdoor recreation spaces are traditionally and historically dominated by a largely white, male demographic (Sandilands et al. 2005); this demographic reflected the dominant social hegemony (Youdelis et al., 2020). These spaces are interconnected with notions of masculinity and are advertised to men

(Glotfelty, 1996; Bowen, 2018). Access to green spaces and nature have physical, mental, emotional, and social benefits that contribute to health and wellbeing (Mygind et al., 2019; Miller et al., 2021), that should be equitably accessible to all people. Yet, to tap into these benefits, individuals need both physical (e.g., ability and knowledge of location) and perceived (e.g., social inclusion) access to these spaces. Mothers (who all identified as female) shared how they experienced outdoor spaces both on their own and as a family. Through this access, they are experiencing the health and wellness benefits of the outdoors, which they described as fostering deeper interactions and providing a sense of balance and motivation. Recreation organizations in Canada have increased accessibility in recent decades (Learn to Camp, Parks Canada; Otentiks, Parks Canada; Push to Open Nature, Alberta Parks), likely inspired by the changing demographics of Canada and outdoor recreationists (Youdelis et al., 2020). Youdelis et al. (2020) reviewed changes to Canadian park management and conservation practices. They found that strides have been made to increase diversity in wilderness spaces, however traditional ethics remain deeply embedded. For one mother, because of their experience in a NBL program, her family spends more time in natural spaces; she was also able to contend with the challenges of the COVID-19 period because of this new capacity. Through the program, she gained an awareness of outdoor spaces and activities, fostering accessibility. This mother's experience was unique (aside from one other parent) within my study participants; however, considering the homogeneity of my sample and the pre-existing appreciation of and experience in nature spaces for most participants, I postulate this experience would be emblematic of others that I did not (or was not able to) recruit.

Fear also contributes to the underutilization of outdoor spaces for females, but can be ameliorated by social cues, such as the presence of other recreationists (Jorgensen et al., 2012). Females in this study shared their experiences in the outdoors but highlighted how they shared

these spaces with friends and family, despite not speaking directly to ‘being afraid’ to be alone outdoors in nature. Through contributing to capacity and community building, NBL is one potential strategy to facilitate access to outdoor spaces for females and other populations historically excluded from outdoor natural spaces. As noted earlier in this chapter, establishing access to natural spaces both directly and indirectly impacts health and wellbeing.

Summary

Unfortunately, there are gender inequities that exist in society and predetermined gender roles that influence who loses their job, who stays at home with the children, or who is more likely to feel comfortable with teaching roles. NBL programs will not solve these large, entrenched gender inequities in our society. However, NBL programs can facilitate outdoor-specific knowledge and skill sharing for families with no or limited outdoor experience. With this foundation, families can access these outdoor spaces, and their natural health benefits, potentially mediating the ill effects of immense stress (as would be experienced during local, national, or global crises).

Policy Implications

Findings from my study suggest that NBL programs or school communities can act as important facilitators of nature and outdoor experiences, knowledge, and skills for children and parents. Schools with access to natural spaces can capitalize on the positive benefits of nature for students (Miller et al., 2021). For the parents in my study, having their child/ren in a NBL program potentially impacted the positive health and wellbeing of their family through enhanced outdoor knowledge and skills. Gaining outdoor knowledge and skills built the capacity to venture outdoors,

where families capitalized on the health benefits of the space, created a connection with nature, and built community connections that may promote social and emotional wellbeing. Miller et al. (2022) suggests that nature-based activities, such as those in NBL, could be “a valuable health promotion intervention with potential for health, social and academic benefits” (p.1116). My findings support the use of NBL as a health promotion intervention for children, families, and communities. NBL programs promote health and foster health promoting behaviours through the inherent benefits of nature, building capacity through knowledge and skill to access these environments, and social cohesion to build community. This builds upon the work of Maller et al. (2006) who suggest contact with nature can be used as population-level health intervention.

Unfortunately, NBL programs still face many barriers. One instructor shared that teachers in Alberta have strict curriculum objectives that create challenges for this pedagogical method. Similarly, MacQuarrie et al. (2015) found that practitioners in their study shared curriculum concerns and the need to meet outcomes, which decreases their ability to offer open-ended learning opportunities (child-led or inquiry based) in nature spaces. If NBL were more widely supported by the provincial government (e.g., who has responsibility for Education in Alberta) through financial and curriculum support, teachers would be better able to offer this program, benefiting children, parents, and communities. However, instructors would also need to be comfortable offering NBL and may require formal training for this type of programming.

Cost of the program is a drawback for some of the parents, in particular for private, for-profit programs similar to Program A. Cost appeared to be a barrier in these programs as they are not typically supported in public school programs. A barrier for Program C was primarily the location which came up in a number of interviews with parents. There are a limited number of NBL programs (at the time, this was the only one that was publicly funded) in the area. However,

a silver lining of COVID-19 has been the impressive growth of these nature-based programs. Increasing the number of programs available and incorporating nature-based curriculum could remedy some of the barriers parents discussed.

With this consideration, I am recommending:

- 1. Advocate for an increase in public funding to NBL programs in Alberta or create an objective in Alberta's education curriculum to facilitate nature experiences.**

Parents from both NBL programs in this study discussed barriers to program access: cost and location. These barriers determine who can register in the programs, (e.g., two-parent families, stay-at-home mothers, those living in the catchment area of or who can drive their children to the program, etc.). Through increasing the availability and decreasing the cost to parents, more children and families can experience NBL and the potential immediate and extended benefits I have described in the above sections (Nature-Based Learning as a Community Health Promotion Intervention & Nature-Based Learning as Mediator During Periods of Stress). Including NBL experiences in the Alberta curriculum would reduce the burden on instructors in Alberta to include nature experiences unsupported and in addition to other objectives. Considering NBL the potential of NBL programs as a health promotion intervention, increasing access is an equitable approach to improve community health.

Building on this and reflecting on the increased importance for families without nature-based experiences, I am recommending:

- 2. Identify populations for whom a NBL program may be beneficial as a vessel to connect children with nature, where otherwise not possible or feasible (e.g., immigrant/newcomer populations, low-income populations, etc.). Decrease barriers to developing and funding programs in these communities and others.**

As highlighted in the first section (Nature-Based Learning as a Community Health Promotion Intervention), NBL programs may be particularly beneficial to connect children (and families) with nature where otherwise not possible or feasible. Connections with nature during the COVID-19 pandemic were positively correlated with SES (Friedman et al., 2021). Through targeting the approach of NBL programming, populations and communities who may not have access or the knowledge to facilitate access may be introduced to nature spaces and outdoor experiences (if this aligns with their ideals). With this recommendation, the benefits of nature and NBL can be shared beyond groups who already appreciate and experience the outdoors (the majority of my sample), to those who may benefit from the health promoting, mediating effects of nature and outdoor experiences (e.g., immigrant/newcomer populations, low-income populations, etc.).

Practice Implications

In keeping with ID (Thorne et al., 1997), I have developed practice implications based on my findings. As demonstrated in this study, NBL programs can have a positive impact on the health and wellbeing of children, parents, and communities. Therefore, I recommend that practitioners continue to share and advocate for NBL in Alberta's early education classrooms and programs. This study builds on previous work as mentioned above (Maller et al., 2006; Miller et al., 2022) and positions NBL as a potential health promotion intervention. Advocating for NBL as

a health promotion intervention (this could be framed as a ‘healthy school initiative’ to promote wholistic school community health) in classrooms and programs, using this study and other research as support, can increase the overall acceptance and uptake of these programs via increasing stakeholder buy-in (Stolp et al., 2015). Stakeholder buy-in is critical to developing and sustaining a healthy school community (Stolp et al., 2015). Stakeholders in school communities may include teachers, school administrators, and parents. Additionally, Miller et al. (2022) suggest that future research explore and identify potential nature-based champions in school communities. School health champions understand and value the connection between health and learning, and are integral in advocating, leading, and implementing school-based initiatives (Canadian Healthy School Alliance, 2021). These actors can engage school staff, parents, and students, and catalyze implementation (Storey et al., 2016; Lucarelli et al., 2014). Building from this idea, nature-based champions may play a pivotal role in advocating for NBL and nature exposure at the school community level and could be explored further in practice.

The first policy implication mentioned above includes the recommendation that an objective be created in Alberta’s education curriculum to facilitate nature experiences. Healthy policy, such as this that would advocate for curriculum changes, that targets childhood health and development are likely to garner public support (Diepeveen et al., 2013); although enacting policy change can be a slow process with many iterations (Sabatier, 2003). Therefore, developing practical strategies to include NBL components within existing Alberta program outcomes at a practice level may mediate this gap for potential practitioners in Alberta. Recalling above the instructor that shared the limitations that Alberta-based practitioners face, identifying an appropriate Alberta curriculum component that NBL could be utilized to facilitate may reduce

some of this burden (e.g., achieving physical activity and wellness objectives through nature experiences).

Lastly, considering the benefits NBL programs may have for children, parents, and communities, modifying NBL messaging within programs to promote the spread of NBL across Alberta's families and communities is critical. Utilizing inclusive program advertising and messaging (e.g., multiple languages, accessible PDF files, or posting on a wider number of community parenting boards) may increase the reach of these programs. Instructors may wish to spend time determining the appropriate channels to share NBL beyond families who already value nature experiences. Considering the potential benefits of these programs, increasing accessibility and equity in program delivery is pertinent in developing healthy learners, families, and communities across Alberta.

Strengths

A foundational strength of this study was the existing community relationships and personal network that were utilized in the exploratory phase. This support created further connections and offered insight into the experiences for children and instructors in NBL programs, contributing to the conceptualization of the project and objective. Purposeful recruitment was also a strength; I was able to gather the perspectives of 10 parents and 3 instructors who were able to vividly describe their perceptions of children's NBL experiences. The original sample size planned was 8-10 parents and 1-2 instructors. I was able to reach (and surpass for instructors) these targets. However, as mentioned, data saturation was not an aim of my study. As Thorne (2016) explained that with a small sample size, "there [will] always be more to study" (p.108); therefore, I understand I could not have captured every perspective of learning in the natural environment.

Due to the restrictions brought on by COVID-19, interviews took place remotely (e.g., phone or Zoom). This remote participation potentially reduced barriers to participation as I was able to recruit parents and instructors from across Alberta; this would have been outside my resource capacity for an in-person data collection. Lastly, this study utilized a health promotion lens in an area of study that had largely been situated in education research; this established new understandings and developed the capacity of NBL beyond a pedagogical method.

Limitations

There are several limitations to this study. To begin, I had the assumption that recruitment would draw either very supportive perspectives or very oppositional perspectives. From my interviews, recruitment drew in instructors and parents that were highly supportive of NBL programs; however, I can assume that individuals with opposing or neutral perspectives also exist. A potential justification for the recruitment of only supportive perspectives are the barriers in NBL participation (e.g., cost and/or distance). These barriers may potentially discourage or prevent some parents from enrolling their child/ren in the program if they were not as supportive or indifferent to these programs. These barriers determine who can register in the programs, ultimately impacting my sample demographics as well (e.g., two-parent families, stay-at-home mothers, those living in the catchment area of or who can drive their children to the program, mostly parents with higher education, etc.). Friedman et al. (2021) found that during the COVID-19 pandemic lockdowns, connection to nature was positively correlated with SES. These barriers likely influenced the recruitment of parents who (for the majority) had a pre-existing relationship and appreciation for the natural environment. Additionally, Oswald et al. (2020) notes that access and nature contact research attracts predominately higher SES samples. As well, I was not able to

recruit any male parents for interviews; while females in this study took on the bulk of remote learning (remote learning responsibilities were a criterion for participant selection), there are male parents that did this as well. Therefore, this is a perspective that is not represented in the data. Next, my criterion included programs from across Alberta, yet I recruited parents from two geographically close areas that have similar access to nature spaces. However, one location was a rural town, the other a large metropolis, which increases the diversity of experiences captured in the data. As mentioned previously, there is no clear definition of what NBL is or consistent terminology. I found this to be a limitation in my literature search at the onset of this project. Lastly, although the experience of the mothers in this study mirrored the global experience for women during the COVID-19 pandemic, within this study, an in-depth exploration of the challenges they experienced and the reasons for these challenges was outside the scope of my research.

Future Research

At a time when NBL and nature-contact research is increasing, my findings add depth to the current pool, while highlighting areas for future research. Based on my findings, I recommend further exploration of the capacity and sustainability for NBL programs to serve as health promotion interventions in communities in two distinct methods.

First, identifying the precise mechanisms through which NBL programs benefit not only child health and development (which has been the focus of current studies), but also parent and community health and wellness, an important implication from this study, will broaden our understanding of these programs and potentially increase acceptability and policy influencer support. For example, future research could focus on the exact impact NBL programs have on parent and community health through qualitative methods that explore what health promoting

behaviours are taken up in these populations and the pathways through which they operate. Additionally, acquiring basic outdoor knowledge was a facilitator of outdoor experiences (which impacts health) for one parent in my study, which is suggestive of the importance of basic outdoor skills and knowledge; this can be supplied through NBL programs. Considering the increased importance these programs may have for families with limited outdoor knowledge, research regarding the impact of these programs on immigrant, low-income, or other populations that may not have or perceive access to outdoors environments would build upon my research and meaningfully add to the current body of knowledge.

Second, within the context of the COVID-19 pandemic, and considering the likelihood of potential, similar future crises, understanding how NBL programs may foster protective, positive health behaviours in children and families is crucial. The results of my research suggest that NBL programming can uplift families during these times of immense stress. To examine this, research could explore and compare the physical and mental health outcomes of NBL families and traditional school setting families to understand how they experienced the COVID-19 pandemic and resulting health outcomes. Understanding that NBL can have protective health benefits during periods like the COVID-19 pandemic is important; therefore, increasing accessibility of these programs may have implications for child, family, and community health and wellness intervention planning for public health stakeholders and policy influencers in Alberta. Connected to this point, Miller et al. (2022) recommends that future research examine how nature-based champions and “supportive leadership” (p.15) can be fostered; I support this recommendation, as community champions and policy influencer support will increase the accessibility and uptake of NBL in Alberta.

Conclusion

Childhood learning and development may be profoundly impacted by nature-based or outdoor experiences. Embedded in the principles of Froebel (Froebel Trust, 2018) is the relationship a child has with their environment in early education. The specific connection a child develops with the natural environment has been suggested to be essential in a child's healthy development and is consistent with the "Biophilia Hypothesis" (Louv, 2008; Murray, 2018; Wilson, 1984). As highlighted previously, nature-based and outdoor play have many potential benefits for health and wellness for children. Education and childhood experiences, which are core components of NBL, are also social determinants of health (Raphael, 2009). Developing a program such as NBL, that ensures these determinants are positively addressed, leverages the natural health benefits of nature spaces and can have a large impact on a childhood health and wellbeing. However, findings from my study suggest that child, parent, and community health and wellbeing can be impacted by NBL programs. NBL can also build capacity to access nature spaces for families with or without outdoor or nature experiences. The impact on parent and community health and wellbeing and capacity building to access nature spaces are novel contributions to the NBL knowledge pool, that should be heavily considered in future health promotion intervention planning.

Chapter 7: Conclusion

Summary

Prior to the COVID-19 pandemic, NBL programming was a niche area in early childhood learning and development. A small fraction of early childhood learning and development research had been devoted to the field of NBL (e.g., O'Brien, 2009; Coe, 2017; Haywood-Bird, 2016; MacQuarrie et al., 2015), yet there is limited knowledge reported from the Canadian context (Coe, 2017; Meyer et al., 2017). With the onset of the pandemic, a pressing need for new education delivery strategies rose (Munoz-Najar et al., 2021). Since that point, NBL has gained considerable attention as an early education pedagogy (Raisingedmonton.com, 2020; Dashingdad.ca, 2021). Aligning with this interest, there is growing understanding and exploration of NBL in the academic literature (Miller et al., 2021; Miller et al., 2022; Dankiw et al., 2020; Cudworth, 2020).

This qualitative study broadens current understanding of the natural environment as a context for learning in early education through NBL programs. Building on the previous literature and the knowledge gained in the study's exploratory phase and connecting my results with the current state of the research, my findings can be used to support the continued growth of NBL in Alberta. The findings of this study may also be used to promote NBL in similar early education settings across Canada. Positioning NBL as a health promotion intervention that draws on the natural health benefits inherent to nature spaces (e.g., decrease stress, improved mood, increased resiliency, increased physical activity) (Miller et al., 2021; Mygind et al., 2019; Kuo et al., 2019), solidifies its importance in early education and school communities. In this study, I have demonstrated the ways in which NBL positively impacts child, parent, and community health and wellness directly (NBL as a foundation for learning and natural spaces for health and mental health development) and indirectly (capacity building and community building) by exploring the

perspectives of parents and instructors, and my interpretations of their data. This study has also examined these positive impacts in both immediate and extended timeframes.

Recognizing the uniqueness of the COVID-19 pandemic period and the likelihood of an impact on my research, I pivoted this study to also explore the experiences of remote learning for parents during this period. This exploration highlighted the challenges that mothers in this study faced during the COVID-19 pandemic, which resonated with experiences globally. Within the scope of this study, an in-depth exploration of these experiences and the mechanisms resulting in these challenges was not feasible. A silver lining of this experience was the supportive environment created by nature spaces for families: parents shared their experiences of connecting with their friends and family, nature spaces, and NBL spaces and concepts despite the challenging COVID-19 context. Their use of these spaces at this time demonstrates NBL's capacity to act as a health promotion initiative, during times of immense stress, particularly for families with little or no previous experience in nature spaces.

Based on these conclusions, I have formulated the following policy recommendations to support uptake and practice of NBL in Alberta:

1. Advocate for an increase in public funding to NBL programs in Alberta or create an objective in Alberta's curriculum to facilitate nature experiences.
2. Identify populations for whom a NBL program may be beneficial as a vessel to connect children with nature, where otherwise not possible or feasible (e.g., immigrant/newcomer populations, low-income populations, etc.). Decrease barriers to developing and funding programs in these communities and others.

These recommendations will not solve all the challenges or curricula roadblocks that instructors may face when implementing nature-based programming. However, with the support of my findings, they may potentially increase buy-in from policy influencers in the Alberta context.

Knowledge Translation

Knowledge translation (KT) is the process that connects academic knowledge with public audiences and stakeholders, through synthesizing and sharing research finding, while applying findings to improve population health (CIHR, 2016). Developing meaningful KT products and sharing my findings with participants, school community stakeholders and policy influencers, contribute to bolstering and encouraging the uptake of NBL in the Alberta context, while informing practice through applicable information.

To share my findings with children and their families, I have developed a storybook that outlines the findings of the first research question (Appendix F). This KT product also served as a member check with participants, where overarching themes were shared with parents and instructors. Their feedback is detailed in Appendix F as well. This storybook will also be publicly available to increase knowledge sharing with the general public. Findings will also be shared with educational and academic communities through presentations, reports, and academic publications.

Closing

Interviews with parents and instructors demonstrated the various ways that NBL can positively impact learning for young children. Unexpectedly, NBL programs also impacted the health and wellbeing of parents and communities, suggesting that these programs can be positioned as a health promotion intervention. The unique opportunity to pivot my research project and examine the experiences of remote learning for parents, illustrated how NBL programs can

promote positive health behaviours across families during times of immense stress, further establishing NBL as a health promotion intervention. Given the positive impact NBL programs can have, education policy influencers can leverage the current growth of these programs to enhance child, family, and community health and wellbeing.

Researcher Reflections

As reported in Chapter 1, I came to this project with an interest in understanding a niche education pedagogy that could be used to create access to the outdoors for children.

As an outdoor enthusiast, non-parent, and a professional with some experience in education, I felt that NBL programs could be an accessible pathway to connect children to the outdoors and their health benefits. From this study, I have a renewed appreciation for NBL programs. Taking a health promotion lens to this study generated a new understanding (for me) of the importance of this program for not only children, but their parents and communities as well. Although I understand that these experiences may not be for everyone, creating an accessible pathway (i.e., public funded programs) for those that are interested can create a bridge between children and families, and nature and their benefits. As I continue in my career, I would like to contribute to the increased accessibility and acceptability of NBL programs as a health promotion intervention.

My project required many revisions in response to the COVID-19 pandemic. However, one major revision was the incorporation of the second research question regarding remote learning experiences. I approached this topic similar to my participants: wary of technology and its impact on children. I understood technology to have some utility, but the value I placed on the outdoors, quality time, and intentional disconnection from screen-based technology clashed with the increased presence of these technologies as a result of the COVID-19 pandemic. However, in consultation and debriefing with my supervisor I understood this to be one of my own biases. Bias

is not negative or a limitation of this study, but it is important to acknowledge and understand how it impacted my interpretation of the data. Recognizing this bias and the assumption I had of technology encouraged me to explore an idea that I held negative attitudes and beliefs towards. In this exploration, I began to understand how technology could be useful and beneficial to learning (largely through increased accessibility). Building on this, I have suggested a strategy that utilizes both technology and nature to complement one another.

Lastly, reflecting on my participants and data, I recognized that I have primarily recruited participants that are like me. These are ‘outdoorsy’ parents with many outdoor hobbies and recreation activities. They felt the same way about the natural environment and NBL programs as I did. This made interviews ‘easy’: interviews felt like a conversation between two likeminded individuals. I was not challenged in my understanding of nature spaces or assumptions, and although there were some unexpected findings, my beliefs and attitudes towards NBL programs or nature spaces have remained unchanged. My sample was likely impacted by many factors; this was discussed above (see Limitations). If I were to continue research in this field, I would like to speak to other parents from different locations or other program structures (e.g., other school authorities). In these other programs, I would be curious to understand parent perspectives and attitudes towards a program that they may not have selected by choice (e.g., they were in the catchment area).

I have only explored a small number of the ways that this project has influenced me as a researcher. Overall, this research study was an experience that I will carry with me in my career. I look forward to future degrees and professional opportunities that I have set a foundation for during this master’s thesis project.

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Appendix A: Instructor Information Letter

Instructor Information Letter for Interviews

Exploring parental perspectives of learning in the natural environment for young children: A qualitative study

Principal Investigator:

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Project Number: Pro00097059

Background and Purpose

Nature-based education programs like Forest Schools or Nature Schools, are exciting programs that offers young children the opportunity to learn outdoors while engaging with the natural environment. To understand nature-based education programs like these, parents of children registered in these programs and instructors are being asked to participate in a study that will explore how children learn in the outdoors. In this study, parents and instructors will be invited to share their understanding of how learning is experienced in the outdoors and reflect on the activities of the programs. Parents and instructors will also be asked to share their experience of remote learning during the COVID-19 pandemic.

The interviews will help us understand the experience of learning for children in the nature-based education program from the instructor's perspectives. The instructors will be interviewed in a one-on-one interview format before parent interviews begin. The research study will begin in early 2021, with interviews taking place in February and March 2021. Instructor interviews are set to take place in late February 2021 or early March 2021 and parent interviews will take place in March 2021 or April 2021. Topics covered during the interview will include: initial general information to learn more about your teaching experience; learning in nature-based education programs; and experience of remote learning during the COVID-19 pandemic (if applicable). The interviews will be recorded (if you consent to this), and will take place over a video call or over the phone at a time that is convenient for you. The interview will take approximately one hour. If you choose to be interviewed over a video call (the Zoom platform will be used), the video will not be recorded. The interviewer will record the interview using a digital recording device that only records audio. You are welcome to turn the video off at any point, if this is more comfortable.

At the end of the interviews, the interviewer will ask you to complete a few short demographics questions. These questions will help the research team understand the participants' backgrounds and how the findings of the research study may be applied in the future. This is voluntary and you can choose to skip this section if you would like. The individual information collected in these interviews will only be used by the research team and will not be shared with the school community. The information collected will have all identifying information removed prior to the release of study findings. If necessary, we may contact you either by phone or email as a short follow-up to the interview.

Once all of the interviews with participants are complete, the knowledge that the researchers draw from the interviews will be shared with participants, the nature-based education community, and academic audiences to guide future use of nature-based education in Canada.

Participation

Your consent to participate in this research is voluntary. The one-hour interviews will take place tentatively in February or March 2021. If, at any point during your interview or 10-days post interview, you would like to be removed from the study, your interview transcripts will not be used. If you wish to have your interview removed from our study, within 10-days post interview, please contact the principal investigator at molner@ualberta.ca. If you would like to withdraw during the interview, please tell the interviewer and the interview will be stopped. You do not have to offer an explanation for ending the interview or withdrawing your interview transcripts and there will be no consequences.

The individual interviews will be recorded using a digital recording device and transcribed after the interviews. Any information that identifies you in these transcripts will be removed. Again, recorded interviews cannot be removed after 10 days post-interview, as all information that would identify you and connect you to your interview transcript will be removed at this point.

Additionally:

- You may ask questions and clarify your rights at any time throughout the research project.
- You may withdraw your consent for your participation in the study at any time.
- You may refuse to answer any of the questions without fear of unfair treatment.
- At any point of the interview, you may ask to have the recorder turned off without explanation.
- You may withdraw the interview data within 10 days after the end of the activities.

To show our appreciation for your time and participation, we would like to offer you a \$25 gift certificate to a local grocery store. The gift certificate will be delivered by mail to your home address. The gift card can be retained even if you choose to withdraw during or 10 days following the interview.

Confidentiality

In order to protect participant's anonymity, further precautions will be taken:

- Participants will be assigned a number and their name will only appear on a Master List that links their name with their project number. This way, any personal identifying information will only be linked to a number.
- Any direct identifying factors from the interviews will not be used in the data analysis.
- The use of indirect identification information (i.e. gender) will only be used in data analysis.
- All recorded information from the project and the Master List will be stored on password protected computers at the School of Public Health, University of Alberta.
- The data will only be accessible for data analysis to the Principal Investigator (Brittany Molner) and the Principal Investigator's Supervisor (Dr. Candace Nykiforuk). In the unlikely event of a breach of information, you will be contacted and informed of what information was compromised.
- Considering the small instructor sample group size, there is a chance that from the aggregate data, your participation may be recognized. Therefore, total anonymity and confidentiality cannot be guaranteed.

Use of Data

The information gathered will be used to understand learning in a nature-based program for young children from your perspective. The information shared will have all identifying information removed and then it will be grouped into common categories. Information collected in this study will be used in the development of the primary investigator's master's thesis. No personal information of the participants will be presented in the thesis or future reports.

General results in an aggregate format (i.e., no direct quotes) may be shared with the school/program community to increase awareness of the nature-based program. Results of the study may also be shared in academic presentations, reports, and publications to share the knowledge that we have gained from collaborating with this program. Your name (or other identifying information) will never be associated with the presentation of the results, unless you let us know you would like it to be.

Possible Risks and Benefits

We do not foresee any risks associated with participation in this study. The potential benefit to the instructors would be the opportunity to share their experiences in the nature-based education program and increase their understanding of nature-based educational programs. At the end of this study, the knowledge shared may benefit future programs and support other instructors, improving future nature-based learning experiences. However, these benefits cannot be guaranteed and some participants may not benefit from the research study.

Funding Agency

The principal investigator is supported by the Joseph-Armand Bombardier Canada Graduate Scholarship through the Social Sciences and Humanities Research Council of Canada (SSHRC).

Contact Information

If you have any questions or concerns regarding this study, please contact:

Dr. Candace Nykiforuk, Supervisor [BLINDED]

Brittany Molner, Principal Investigator [BLINDED]

The plan for this study has been reviewed for its adherence to ethical guidelines by a Research Ethics Board at the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Research Ethics Office by phone at (780) 492-2615 or by email at reoffice@ualberta.ca. Project Number, Pro00097059.

Appendix B: Parent Information Letter

Parent/Guardian Information Letter for Interviews

Exploring parental perspectives of learning in the natural environment for young children: A qualitative study

Principal Investigator:

Brittany Molner, MSc Graduate Student, School of Public Health, University of Alberta
School of Public Health, University of Alberta
[BLINDED]

Supervisor:

Dr. Candace Nykiforuk, PhD, CE, Professor and Associate Dean (Research and Research Programs),
School of Public Health, University of Alberta
[BLINDED]

Project Number: Pro00097059

Background and Purpose

Nature-based education programs like Forest Schools or Nature Schools, are exciting programs that offer young children the opportunity to learn outdoors while engaging with the natural environment. To understand nature-based education programs like these, parents/guardians of children registered in these programs and instructors are being asked to participate in a study that will explore how children learn in the outdoors. In this study, parents/guardians and instructors will be invited to share their understanding of how learning is experienced in the outdoors and reflect on the activities of the programs. Parents/guardians and instructors will also be asked to share their experience of remote learning during the COVID-19 pandemic.

The interviews will help us understand the experience of learning for children in a nature-based education program from your perspective as a parent. Parents/guardians will be interviewed in a one-on-one interview format. The instructors will be interviewed in a one-on-one interview format before parent/guardian interviews begin. The research study will begin in early 2021, with interviews taking place in February and March 2021. Instructor interviews are set to take place in late February 2021 or early March 2021 and parent/guardian interviews will take place in March 2021 or April 2021. Topics covered during the interview will include: general information to learn more about you; personal experience with the outdoors; learning in a nature-based program; and experience of homeschooling during the COVID-19 pandemic. At the end of the interview, the interviewer will ask you to complete a few short demographics questions with the interviewer. These questions will help the research team understand the participants' backgrounds and how the findings of the research study may be applied in the future. This is voluntary and participants can choose to skip this section if they would like.

If it is easier for you, we can also split the interview into two short interviews (30 minutes each). The interview guide will be provided to you at the beginning of the interview. The interviews will be recorded (if you consent to this), and will take place over a video call or over the phone at a time that is best for you. The interview will take about one hour. If you choose to be interviewed over a video call (the Zoom platform will be used), the video will not be recorded. The interviewer will record the interview using a digital

recording device that only records audio. You are welcome to turn the video off at any point, if this is more comfortable.

The individual information collected in these interviews will only be used by the research team and will not be shared with the school community. The information collected will have all identifying information removed prior to the release of study findings. If necessary, we may contact you either by phone or email as a short follow-up to the interview.

Once all of the interviews with participants are complete, the knowledge that the researchers draw from the interviews will be shared with participants, the nature-based education community, and academic audiences to guide future use of nature-based education in Canada.

Participation

Participation in this research study is voluntary and you may choose to not take part at any point. The one-hour interviews will take place tentatively in March 2021 or April 2021. If, at any point during your interview or 10-days post interview, you would like to be removed from the study, your interview transcripts will not be used. If you wish to have your interview removed from our study, within 10-days post interview, please contact the principal investigator at molner@ualberta.ca. If you would like to withdraw during the interview, please tell the interviewer and the interview will be stopped. You do not have to offer an explanation for ending the interview or withdrawing your interview transcripts and there will be no consequences.

The individual interviews will be recorded using a digital recording device and transcribed after the interviews. Any information that identifies you or your child in these transcripts will be removed. Again, recorded interviews cannot be removed after 10-days post-interview, as all information that would identify you and connect you to your interview transcript will be removed at this point.

You have the right to:

- Ask any questions about the study and your rights as a participant throughout the research project.
- Ask to be removed from the project at any time.
- Decide to not answer any questions without fear of unfair treatment.
- Leave the interview without needing to explain.
- Ask for your data to be removed within 10 days after your interview.

To show our appreciation for your time and participation, we would like to offer you a \$25 gift certificate to a local grocery store. The gift certificate will be delivered by mail to your home address. The gift card can be retained even if you choose to withdraw during or 10 days following the interview.

Confidentiality

In order to protect participant's identity, further measures will be taken:

- Participants will be assigned a number and their name will only appear on a Master List that links their name with their project number. This way, any personal identifying information will only be linked to a number.
- Any direct identifying factors from the interviews will not be used in the data analysis.
- The use of indirect identification information (i.e. gender) will only be used in data analysis.
- All recorded information and the Master List will be stored on password protected computers at the School of Public Health, University of Alberta.
- The data will only be accessible for data analysis to the Principal Investigator (Brittany Molner) and the Principal Investigator's Supervisor (Dr. Candace Nykiforuk). In the unlikely event of a breach of information, you will be contacted and informed of what information was compromised.

Use of Data

The information gathered will be used to understand learning in a nature-based program for young children from your perspective. The information collected will have all information that may identify you or your child removed. After this, the information will be grouped into common categories. Information collected in this study will be used in the development of the primary investigator's master's thesis. No personal information of participants will be presented in the thesis or future reports.

General results in an aggregate format (i.e., no direct quotes) may be shared with the school/program community to increase awareness of the nature-based program. Results of the study may also be shared in academic presentations, reports, and publications to share the knowledge that we have gained through this study. Your name (or other identifying information) will never be associated with the presentation of the results, unless you let us know you would like it to be.

Possible Risks and Benefits

We do not expect any risks for participants in this study. The potential benefit would be the opportunity to share your understanding of learning in a nature-based education program for children. At the end of this study, we would like to share the general results with relevant professional and academic communities. Sharing this information could promote growth of the program in the future. However, these benefits cannot be guaranteed and some participants may not benefit from the research study. Regardless, we do not expect any risks from participation.

Funding Agency

The principal investigator is supported by the Joseph-Armand Bombardier Canada Graduate Scholarship through the Social Sciences and Humanities Research Council of Canada (SSHRC).

Contact Information

If you have any questions or concerns regarding this study, please contact:
Dr. Candace Nykiforuk, Supervisor [BLINDED]
Brittany Molner, Principal Investigator [BLINDED]

The plan for this study has been reviewed for its adherence to ethical guidelines by a Research Ethics Board at the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Research Ethics Office by phone at (780) 492-2615 or by email at reoffice@ualberta.ca. Project Number, Pro00097059.

Appendix C: Instructor Semi-Structured Interview Guide

Exploring parental perspectives of learning in the natural environment for young children: A qualitative study

Instructor Interview Guide Summary

Updated: January 2021

Prior to the interview, interviewer will connect with participants to discuss the logistics of the interview process. They will be informed that the interview will take approximately one hour and that if it is easier for them, the interview can take place over two sessions.

Purpose: *The primary intent of the instructor interview is to learn about their nature-based education program and identify the types of activities that took place. These activities will then be included in parent/guardian interviews to offer context for the interview. The instructor will also be asked to reflect on the remote learning experience. This information will then be used to focus the interview guides for parents/guardians to understand how learning took place from the home.*

Participant: _____

Interviewer: _____

Date: _____

Time: _____

Interview Guide

The instructor interviews will be divided into three different sections. The first two sections will ask about pre-COVID-19 information and events and the last section will ask about information and events during the COVID-19 period:

Interviewer script: *Thank you for taking the time to meet with me today. Our interview today should not take longer than one hour and I will be sure to keep an eye on the time for us. I will be recording our conversation. If at any point, you would like to stop the interview or not answer a question, please let me know. It is completely okay. As well, if I am silent, I am still listening, I am just giving you time to respond to the questions.*

Just as a reminder, the purpose of our interview today is to learn about your nature-based education program and identify the types of activities that took place pre-COVID-19 in the 2019/2020 school year. These activities will then be included in parent/guardian interviews to offer context for the interview. Closer to the end of the interview, I will also ask you to reflect on the remote learning experience during the COVID-19 pandemic. This information will then be used to focus the interview guides for parents/guardians to understand how learning took place from the home.

I received your consent form, do you have any questions about consent or any other questions before we begin? Is it alright if I turn on the recorder now?

1. Personal information (Pre-COVID-19):

- To begin, I would like to learn a little bit more about your teaching experience. Can you describe your past teaching experience?
 - o How long have you been teaching?
 - o Why did you choose to become a teacher?
 - What do you value about the teaching profession? Why is it important?
 - o How did you become interested in the nature-based education model?
- In the 2019/2020 school year, you used a nature-based learning model; **can you tell me more about this nature-based program?**
 - o Can you describe what an average day would look like in the program?
 - o Why did you choose this model for your program?
 - o Have you used nature-based or various strategies within nature based models before? If yes, how was this year the same or different from previous years? If no, why did you decide to try it out?
- **What motivated you to utilize nature-based learning in your program?**
 - o How do you feel about outdoor experiences for children?
- **Given your experience with nature-based education, what are your feelings towards learning outdoors for children?**
 - o Have you seen any benefits for learning?
 - o Have you seen any drawbacks for learning?
- How would you encourage other instructors to use a similar model?

[Additional information to be collected as necessary]

2. Experience with program and parents’/guardians’ reception (Pre-COVID-19):

- Considering parents/guardians in your program intentionally enrolled their child in your program, **how did you advertise or promote the nature-based program to parents/guardians?**
 - o How did you explain learning objectives and/or outcomes for children within the program to parents/guardians?
- How have parents/guardians reacted to the program?
 - o What kind of feedback did you receive from parents/guardians about your nature-based program?
 - o Were there any concerns expressed by parents/guardians? How did you address these concerns?
- **Looking at all the nature-based activities that occurred over the previous year (i.e., 2019/2020), were there any specific activities that the children enjoyed that stood out for you?**
 - o Can you describe these activities for me?
- **Were there any specific activities that the children did not enjoy?**
 - o Can you describe these activities for me?
- Were any of the activities or crafts from the nature-based program shared in the home environment?
 - o Can you describe these activities for me?

[Additional information to be collected as necessary]

3. Perceptions of remote learning experience during COVID-19 pandemic (During COVID-19):

- Moving forward in the year, I would like to better understand your experience working with parents/guardians who were remote learning with their children during the COVID-19 pandemic. **Can you describe your experience during this time? Were you connecting with parents/guardians and the children?**
 - o Can you please describe a typical day (or week)?
- How did you communicate and interact with parents/guardians and children?
 - o What did it look like?
- **What kind of feedback did you receive from parents/guardians regarding the remote learning experience?**
 - o Were there challenges?
 - o Were there any successes or positive outcomes from remote learning?
- **Did you encourage or provide nature-based learning for the children to do while learning from home?**
 - o **What did this plan include?**
 - o **Was teaching a nature-based program to children at home more challenging or easier?**

- Can you tell me a little bit more about why you feel this way?
- From your perspective, were there things that got in the way for families?
- Were there things that made it easier for families?
- We are coming to the end of the interview but is there anything else you would like to share?

[Additional information to be collected as necessary]

***Interviewer script:** Thank you for your time today. If I have any questions that come up after our interview, would it be alright if I reach out over email or by text message?*

Also, do you know of other instructors who may be interested and have similar experiences as yourself with nature-based education that I can connect with?

Interviews will be recorded on a digital recording device or smart device, which will be transferred to an electronic file, and then transcribed verbatim. Interview transcripts will not be sent to participants unless requested.

Appendix D: Parent Semi-Structured Interview Guide

Exploring parental perspectives of learning in the natural environment for young children: A qualitative study

Parent/Guardian Interview Guide Summary

Updated: January 2021

Prior to the interview, the interviewer will connect with participants to discuss the logistics of the interview process. They will be informed that the interview will take approximately one hour and that if it is easier for them, the interview can take place over two sessions.

Purpose: *The purpose of the parent/guardian interview will be to explore the two research questions: 1) What are parent/guardian's perspectives and experiences of learning in the natural environment in an early childhood learning setting? (2) How is remote learning during the COVID-19 pandemic experienced by parents/guardians of young children registered in a nature-based kindergarten? The interview will begin by asking parents/guardians to reflect on learning in the program using specific program activities and their own experience with the outdoors. These questions will be broad in nature and should consider the pre-COVID-19 period. In the last section of the interview I will transition and explore remote learning during the COVID-19 pandemic. This transition will be made clear to parents/guardians.*

Participant: _____

Interviewer: _____

Date: _____

Time: _____

Interview Guide:

Parent/guardian interview will be divided into three different sections. The first two sections will ask about pre-COVID-19 information and events and the last section will ask about information and events during the COVID-19 period:

Interviewer script: *Thank you for taking the time to meet with me today. Our interview today should not take longer than one hour and I will be sure to keep an eye on the time for us. I will be recording our conversation. If at any point, you would like to stop the interview or not*

answer a question, please let me know. It is completely okay. As well, if I am silent, I am still listening, I am just giving you time to respond to the questions.

Just as a reminder, the purpose of our interview today is to explore two questions: 1) What are your perspectives of learning for children in the outdoors in a kindergarten setting? (2) How did you experience remote learning during the COVID-19 pandemic with your young child? I will begin the interview by asking you to reflect on learning in the program for your child using specific program activities and your own experience with the outdoors. These questions will be fairly broad and I will only ask about the pre-COVID-19 period. After this, I will let you know that I am transitioning into questions about remote learning during the COVID-19 pandemic.

I received your consent form, do you have any questions about consent or any other questions before we begin? Is it alright if I turn on the recorder now?

Warm-up question: To begin, can you tell me a little bit about your child that was in the nature-based program?

4. Experiences for children learning in the program (Pre-COVID-19):
 - Thinking back to the nature-based education program that your child attended last year, **can you describe your child's experience learning in this program?**
 - o What kinds of activities were they doing?
 - **How did you hear about this program?**
 - o What encouraged you to have your child in this program?
 - o How do you feel about this program in general?
 - o Were there any other programs you considered for your young child?
 - Looking back on the activities [list of examples of activities will be drawn from teacher interviews] of nature-based education program, **can you tell me about the activities that your child enjoyed the most?**
 - o Why do you think they enjoyed this activity?
 - **Can you tell me about the activities that you think your child enjoyed the least in this program?**
 - o Why do you think they enjoyed this activity the least?
 - **Was there anything that you think your child gained through this nature-based program?**
 - o How was your child's learning been impacted by this program?
 - **Was there anything that you think your child may have missed through this nature-based program when considering other learning or out-of-school activity programs?**

- Were there any features of the nature-based education program that you or your child did not like?
- If given the opportunity, would you enroll your children in nature-based education programs again?
 - Why or why not?

[Additional questions to be added as necessary]

5. Personal perspective of the natural environment (Pre-COVID-19):

- **Can you tell me a little bit about your feelings towards the natural environment or outdoors in general?** (i.e., green spaces, forests, provincial or national parks...etc.)?
 - What do these spaces mean to you? (*interviewer clarification if necessary: mean = value/importance*)
 - Do you identify as ‘outdoorsy’ or as a ‘nature-lover’? Why or why not?
- **Can you tell me a little bit more about the different activities you do outdoors?**
 - What do you like about these activities?
 - Do you do them with your family?
- **Thinking back to your childhood, how much time did you spend outdoors as a child?**
 - Can you describe these outdoor experiences?
 - How do you feel about having had these experiences?
 - (Alternate) Would you have liked to spend more time outdoors as a child? Why or why not?
- What kinds of experiences did your family (i.e., parents or immediate family) have outdoors when you were a child?
 - Can you describe these experiences for me?

[Additional questions to be added as necessary]

6. Remote learning experiences during the COVID-19 pandemic (During-COVID-19):

- Now, more recently, I was hoping you could share your experiences of remote learning during the COVID-19 pandemic. **How did things change for you at home when your child had to start learning remotely instead of learning at school?**
 - Who was working in the home and away from the home?
 - Did you have childcare?

- How many children do you have? Are they older or younger than [child in the nature-based program]?
- How were the responsibilities shared at home (i.e., remote learning, childcare, household chores,...etc.)?
- **Can you describe for me, what remote learning looked like at home for your child?**
 - Where did it take place (i.e., kitchen table, home office...etc.)?
 - What was it like to learn for your child in this space?
 - Who took on the responsibility of teaching at home?
 - Can you describe for me this experience?
- **Did you spend time outdoors with your child while they were remote learning?**
 - How did you feel about this outdoor time for your child? (COVID-19 specific)
 - What did outdoor time look like for your child? (i.e., where were they, what were they doing, and when did they do it?)
 - Were there any benefits you saw for your child of having this outdoor time?
 - Were there any challenges of this outdoor time for your child?
- Can you tell me about any positive takeaways of the remote learning period that your child may have benefited from?
- Can you tell me about any negative takeaways of the remote learning period that your child may have experienced?
- We are coming to the end of the interview but is there anything else you would like to share?

[Additional questions to be added as necessary]

Interviewer script: Thank you for your time today. If I have any questions that come up after our interview, would it be alright if I reach out over email or by text message?

Also, do you know of other parents who may be interested and have similar experiences as yourself with nature-based education that I can connect with?

Interviews will be recorded on a digital recording device or smart device, which will be transferred to an electronic file, and then transcribed verbatim. Interview transcripts will not be sent to participants unless requested.

Appendix E: Thematic Maps

Image 1: Final Thematic Map for Research Question 1. (dotted lines = connections between themes)

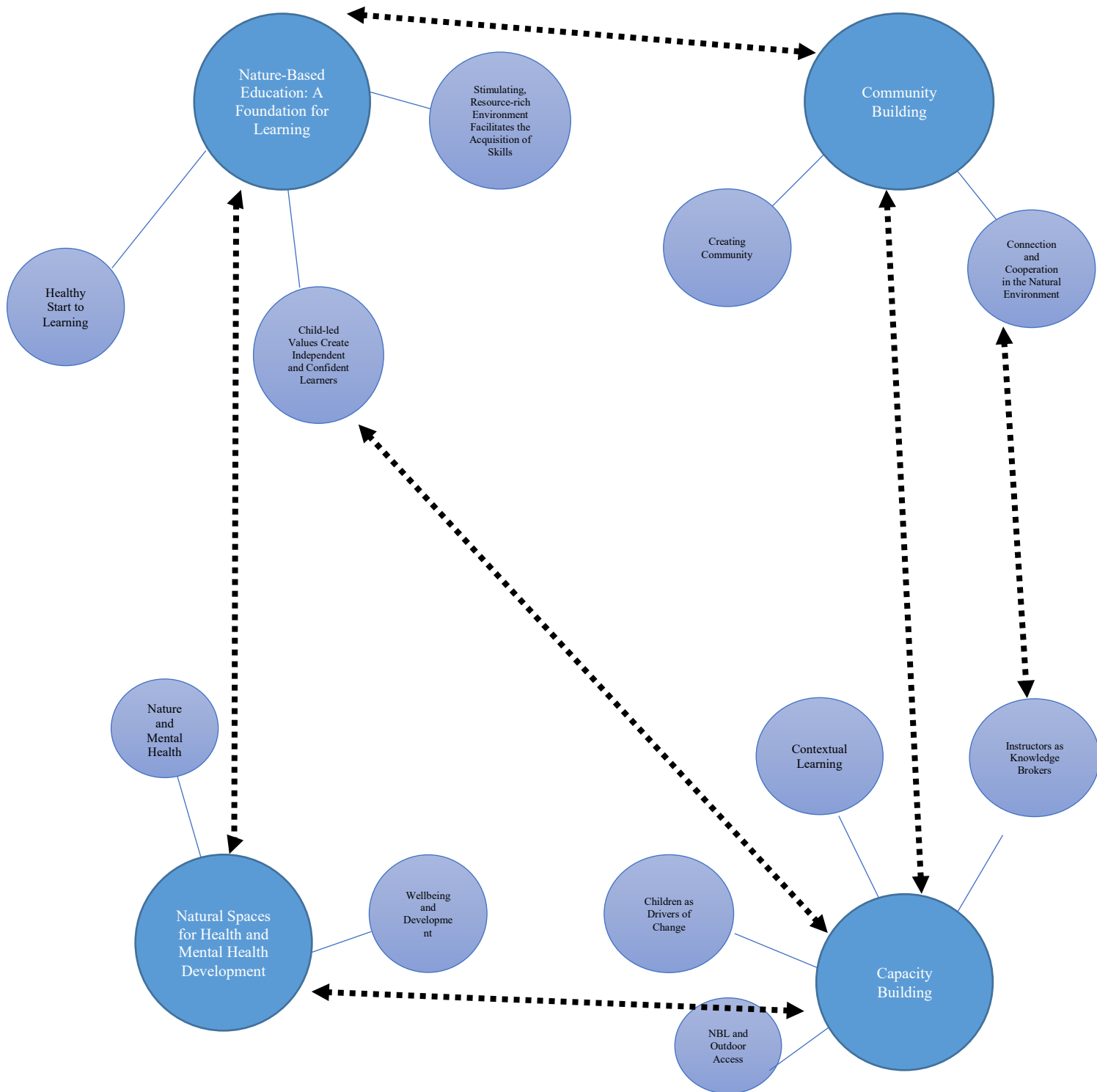
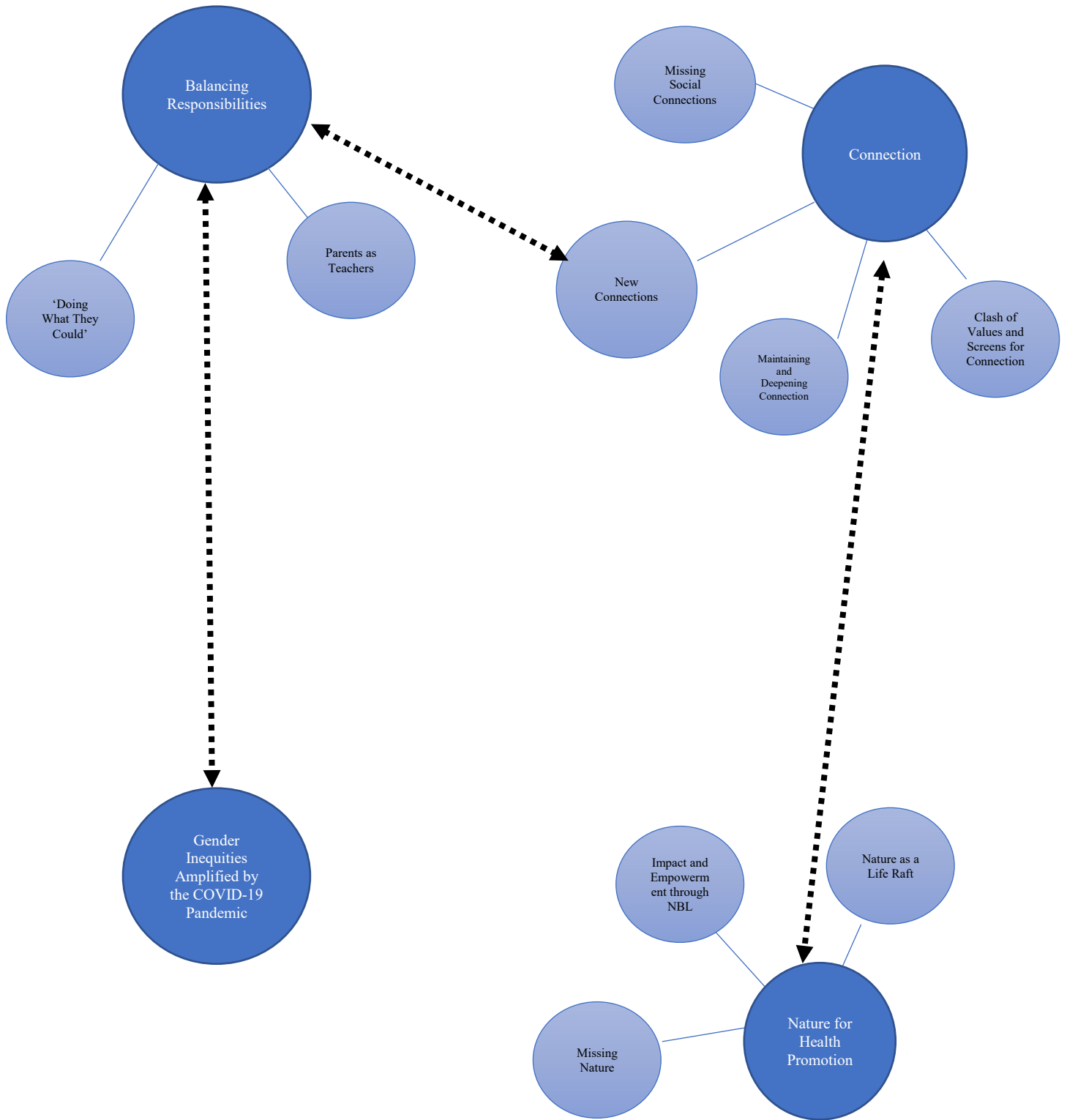


Image 2: Final Thematic Map for Research Question 2.



Appendix F: Knowledge Translation Product – Storybook and Participant Feedback

Feedback Received from Participants

“Hi Brittany and lovely to hear from you. That’s SUCH a cute book and I love the illustrations. I think it sums up the forest school experience really well. I love it!!

I guess the only thing I might add is that forest school isn’t all outdoors (in our experience at least) and that sometimes a classroom is used to supplement outdoor learning (whether it be to dissect an owl pellet, or sketch a pumpkin, draw a map etc). Anyway, there is a well utilised indoor space at both of the [blinded] locations. Not sure if this is/ was the same for all the participants you spoke to? And this of course may be more of a consideration in a place like Alberta with such climatic extremities?!

Anyway, thanks so much for sharing and I wish you all the best with your work.”

“Hi Brittany,

It's really great. I love it.

Two tiny points of feedback...

- At [blinded], they learn which plants and seeds and edible for them and their healing properties. I think this is such great info and such a great tool for them to have.*
- I wasn't clear on the "mom is still worried about this one though" comment about eating the animals.*

Otherwise awesome work.”

“Thank you, it's adorable!”

Appendix F continued: Knowledge Translation Product – Storybook and Participant Feedback



THIS BOOK
BELONGS TO:

My name's Emma and I went
to Nature School today!



My school might not look
like yours...

Instead of desks and chairs, I sit in
the grass with the flowers and
funny little mushrooms.





With my friends, we play in the mud and serve all kinds of treats in our mud kitchen.

I show how big and strong I am by climbing in the trees and on the logs.

We learn so much about our furry friends in the forest and the plants that feed them.



We even learn which ones we can eat...

...mom still worries about that one though!

The fresh air feels so good on my face when I run really fast.

AHHHHH



And I can make all the big noises I want outside!

Sometimes it gets cold and snowy,



but it's okay because I bundle up with my
toque and mittens.

My family didn't always spend time outside,



but with Nature School I get to show them
my secret spots in the forest and all the
games we play.

My little brother can be kind of a pain, but
when we are outside we get along...



...mainly because I get to be the leader!

I love it so much! And my whole
neighbourhood loves it too!



Everyone wants to be in Nature
School, even Mom!



Can we go back tomorrow?



