

Sharing Intergenerational Food Stories to Engage Children in
Indigenous Food Sovereignty

by

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Abstract

Within Indigenous cultures, teachings about food and health have been shared on the land, as the land, air, water and ice are where food naturally grows and exists. Yet, Indigenous children today are increasingly using online technologies to gather information and connect with their communities. Thus, this study explores how land-based learning can come together with online technology to engage children from three Mi'kmaw communities in Mi'kma'ki in Indigenous food sovereignty. This study is situated within an intergenerational Indigenous foods program called the Land2Lab Project and is guided by Two-Eyed Seeing and decolonial theory. I use narrative inquiry to explore the perspectives of 14 Mi'kmaq children during a researcher-led group interview and a storytelling session led by a Knowledge Keeper, all informed by intergenerational land-based and kitchen experiences during the Land2Lab Project. Narrative inquiry recognizes that as human beings we live life through story. Through this study I learn that food stories on the land need to be shared intergenerationally, as these stories are key to engaging children in Indigenous food sovereignty and connecting them to Mi'kmaw culture. While online technology may seem paradoxical to land-based learning, some elements of intergenerational storytelling can happen online and on the land, and both can be used to support the protection of Mi'kmaw knowledge systems, foodways and health for future generations.

List of Abbreviations Used

The following is a list of abbreviations used in this research or cited research:

- CMM: Confederacy of Mainland Mi'kmaq
- StFX : Saint Francis Xavier University
- CBPR : Community Based Participatory Research
- ILCSD: The Integrated Life Course and Social Determinants Model of Aboriginal Health
- CNA: The Canadian Nursing Association
- CSDH: Commission on the Social Determinants of Health
- REB: Research Ethics Board
- TCPS2: Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans
- UINR: Unama'ki Institute of Natural Resources

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Chapter I: Introduction

Nutkmaq (Fertilizer)

Poem by Rita Joe, Mi'kmaw poet

To the budding mind of today's youth

Going to reach good soil

My nutkmaq to germinate in sunbeam's toil

I scatter the seed

Not only for my culture but for all

Not to the narrow trail that some venture

Needing only a nudge to stall.

I will always throw the seed

In amazement and wonder

For the telling to further your interest

That you read this and ponder (2015, p. 79).

Mi'kmaw poet Rita Joe (2015), in her poem *Nutkmaq*, metaphorically refers to the power of Indigenous knowledges and storytelling as the seeds and fertilizer for the budding minds of children and youth. The stories we share with children can guide them and support their development through life. And subsequently, nourish the minds of future generations with the stories sown from generations past. Storytelling is a valuable form of human expression and communication that serves a number of purposes within Indigenous communities, such as the passing down of a repertoire of cultural and ecological knowledges that help maintain a sense of community among humans and ecosystems and

instill moral and spiritual values and ways of being amongst storytellers and listeners (Archibald, 2008).

Indigenous stories are as diverse as the locations and the peoples that they emanate from. Yet, Indigenous stories share several commonalities that have given rise to the use of Indigenous storywork as a distinct term (Archibald, 2008). Indigenous storywork was coined by Archibald (2008) to support storytelling in being taken seriously in Western education settings and in its application in knowledge sharing. Although Indigenous storywork might differ considerably according to the culture and community from which it is being told, commonalities of Indigenous stories often feature the intricate relationship between human beings and Mother Nature (Eder, 2007). Additionally, the storytelling process is often interactive and cyclical where the storyteller influences the listener and similarly where the listener influences the storyteller and the stories that they share (Archibald, 2008; Eder, 2007). This relationship between storyteller and listener is often intergenerational which helps ensure that stories are continuously informed by and pertinent to a community and passed from one generation to the next (Archibald, 2008).

Intergenerational storytelling and sharing of Indigenous knowledges, which are the values, beliefs, practices and understandings that have been obtained over time from living in harmony with the natural environment (Marshall, Marshall, Bartlett, & Iwama, 2015), are not often considered in conventional health research. Within the context of this research, however, Indigenous knowledge is recognized as essential in ensuring the health of future generations. The way we all develop, frame and tell stories about food and the land has important implications for child engagement in Indigenous food sovereignty. Throughout this thesis my aim is to bring light to this relationship.

It is important to note that within the literature the term traditional is often coupled with or used interchangeably with ‘Indigenous’ when referring to Indigenous knowledge systems. There are varying ways to understand the term traditional; it could be understood to recognize the long standing and historical nature of Indigenous knowledge systems prior to colonial contact but can also imply that Indigenous knowledge systems are of the past, when in fact Indigenous knowledge systems are very much alive and continue to be practiced today (Hanemaayer et al., 2020). Due to the complexity and varying ways of interpreting the term traditional, I omit this term when referring to Indigenous knowledge systems, foods, and foodways. Further, terminology within this thesis is used and understood according to the time and place that this thesis was written. As understandings of terminology often change over time, it is important to acknowledge that I have carefully chosen terms that are considered most appropriate during the time and place in which this study occurred.

Indigenous food sovereignty is the process of learning, reclaiming and practicing knowledge about Indigenous foodways, which are health-enabling cultural food practices that are passed down through generations (Counihan, 2019). For this to occur, Indigenous Peoples require the ability to self-determine and make decisions about how land, water, air and ice is used, which supports self-determination and thus, overall well-being (Greenwood, De Leeuw, Lindsay, & Reading, 2015; Morrison, 2011). Indigenous food sovereignty is about becoming aware of the issues surrounding Indigenous food systems and developing critical discussions and actions surrounding the health of the land, water, air, and ice, which impacts the health of the food we eat, and subsequently the health of our bodies and communities (Stavenhagen, 2006). Food is what nourishes us and all our

relations, and therefore, environmental health is fundamental in achieving health for all. Indigenous food sovereignty allows for us to acknowledge that human health is intricately reliant on the health of Mother Earth, and we, as stewards of the land, are all responsible for nurturing and sustaining this relationship.

The term child engagement is used often throughout this thesis, and this is because involving children is necessary when sharing skills and knowledges that will contribute to the health of their communities as they grow older (Iwasaki, 2015; Kolb 1984). I define children as any individual below the age of 18 (United Nations, 1990). In general, child engagement can be described as meaningful participation and sustained involvement of a young person in an activity that has a focus outside oneself (Pancer, Rose-Krasnor & Loiselle, 2002). Child engagement is understood by Pancer and colleagues (2002) as consisting of three components: 1. A child spending time doing an activity (behavioural component), 2. Enjoying participating in an activity (an affective component) and 3. Gaining skills and knowledge about the activity (a cognitive component). Child engagement is a key concept for positive development because it can facilitate protective factors among children such as greater self-esteem, self-confidence, empowerment, and social and cultural connectedness (Blanchet-Cohen & Salazar, 2009; Wexler et al., 2009). Adults can support child engagement by listening and responding to children, and through actively facilitating equitable power-sharing between children and adults where adults engage in critical reflection and reflective action (Caine & Boydell, 2010). Adults have an important role in facilitating meaningful child engagement, and the stories we share with children about the land and its foods might have important implications for their engagement in Indigenous food sovereignty.

In her poem, Rita Joe encourages storytellers to throw their seeds where they can easily grow. I have envisioned seeds as being the wisdom and knowledge embedded within stories. We need to share stories in places where children can hear their telling and consider their meanings. The reality is that many Indigenous children within Canada are learning both on the land and online, and we can share stories in both places. Rather than positioning one approach as better than the other I wondered how land-based learning *and* online technologies can come together to support child engagement in Indigenous food sovereignty. Thus, the purpose of this thesis is to explore how land-based learning and online technologies can be used together to engage children in Indigenous food sovereignty. I learned that irrespective of the environment, Indigenous storywork and the sharing of intergenerational food stories is integral to engaging children in Indigenous food sovereignty in a number of ways. The remainder of this chapter offers a brief overview of the literature and introduces key concepts explored within this thesis, namely, Indigenous ways of knowing and Two-Eyed Seeing. I then provide an overview of the study and outline how this thesis is organized.

Indigenous Ways of Knowing

This study introduces Indigenous ways of knowing as being intricately connected to the health of Indigenous communities. Throughout this study, Mi'kmaw foodways and Indigenous knowledges position food as a way to learn about and understand Mi'kmaw culture. This is because food is a product of Mother Nature, and Mi'kmaw knowledge systems are formed from being a part of this spiritual interconnected relationship with the land. Due to the evolving and ongoing effects of colonization, however, decreased access to the land has made it difficult to teach and share Indigenous knowledges about food, and

it has become difficult to pass along these important teachings to younger generations in traditional ways (Hatala et al., 2017; Neufeld & Richmond, 2017; Richmond & Ross, 2009).

Decreased access to the land is also in part due to the alarming effects of climate change (Ford et al., 2019; Lam et al., 2019). Teaching children about Indigenous foodways without access to safe clean water, land, ice or air is the reality for many (Richards et al., 2019). Climate change and issues surrounding the land and health cannot be ignored when teaching about Indigenous foodways. The Land2Lab Team noticed this during the first land-based workshop experience with the Land2Lab Project, explored further below and highlighted in a field report published in the Canadian Food Studies Journal (Bujold et al., 2021). Our own plans to engage children in eel ice-fishing with Elders was delayed several weeks by new weather patterns wherein the harbour did not freeze, which is increasingly the norm.

Yet, through Indigenous food sovereignty, Indigenous communities are preserving their Indigenous foodways and continuing the intergenerational transfer of knowledge to younger generations (Morrison, 2011). This is important as Elders tell us that we must teach children about Indigenous worldviews, or this knowledge will not survive the passage of time (Ross, 2016). In many First Nation, Métis, and Inuit communities, oral traditions are keeping ways of being and teachings about survival alive and unharmed (Tachine, Yellow Bird, & Cabrera, 2016). This helps ensure that cultural traditions and knowledges continue to pass from one generation to the next (Arthurson, 2012), as it is the use of Indigenous languages and stories across and within generations that have transmitted culture and health (First Nations Information Governance Centre, 2018). Therefore,

Indigenous storywork is an integral aspect of sharing Indigenous knowledges about food, both on the land and online. It is important to understand that Indigenous Peoples have distinct perspectives about the world and how to relate to it, which differ from Western perspectives and worldviews.

Etuaptmumk – Two-Eyed Seeing

There is great opportunity in exploring how Indigenous knowledges can be considered alongside Western knowledges, especially when we think about issues impacting Indigenous food sovereignty. Etuaptmumk – Two-Eyed Seeing offers a way to understand the existence of multiple perspectives and worldviews in order to understand and address social issues (Marshall, Marshall & Bartlett, 2015; Martin, 2012; Hovey et al., 2017; Knapp, 2013). Etuaptmumk is a Mi'kmaw word that represents the gifts of having multiple perspectives. Elders Albert and the Late Murdena Marshall, along with Dr. Cheryl Bartlett from Cape Breton University, coined the term Two-Eyed Seeing to describe the metaphorical use of one eye to see Indigenous ways of knowing and the other eye to see Western ways so we can respect and utilize both perspectives (2012; 2015). Building on this metaphor, there has been an over-emphasis of the 'Western eye' when attempting to provide solutions relating to the food and land issues that impact Indigenous Peoples (Cidro et al, 2015; Smith, 2020).

Two-Eyed Seeing underscores the need to acknowledge Indigenous knowledges and ways of knowing when considering the natural environment. I understand the natural environment as consisting of ecosystems, which are geographic areas where plants, animals, and other organisms, as well as weather and landscapes, work together to form a closed system of life (National Geographic, 2022). Within these ecosystems, Two-Eyed

Seeing underscores that there have been varying social and cultural environments and contexts that have influenced how human beings have interacted with and within the natural environment. This study is guided by Two-Eyed Seeing. I have reflected on what Two-Eyed Seeing means to me personally, guiding my worldview in Chapter 3, and how it can be applied to child engagement in Indigenous food sovereignty, drawing upon it throughout the entirety of this thesis.

Considering Pedagogy

Indigenous children in Canada are often described as living in dual worlds, one which values Indigenous knowledges and ways of knowing and another which values Western knowledges and ways of knowing. Within these potentially dual worlds there are tensions surrounding how to engage children in Indigenous knowledges that are formed from the land within their classrooms and technological learning environments (Bartmes & Shukla, 2020). The classroom is where children are doing most of their academic learning, but the typical classroom environment has not been conducive to teaching and learning about Indigenous foodways and the intricate relationships between the land, food, culture and health (Battiste, 2013). Conventional classroom learning environments do not inherently demonstrate to Indigenous children the lifestyles, practices, skills, experiences, or knowledges necessary to engage in their Indigenous foodways on the land. For these reasons, Western education systems are critiqued for not employing land-based learning approaches as a mode of education (Battiste, 2013).

As a research community we are coming to understand the importance of intergenerational land-based knowledge sharing within Indigenous communities (Bartmes & Shukla, 2020). Literature is showing us that land-based learning is an important way to

share and celebrate Indigenous knowledges and is an effective way of engaging children (Bagelman et al, 2016; Kenny et al, 2018). This is because the land is where Indigenous knowledges, stories, and culture have been developed throughout generations. There has been some debate, however, on how to facilitate land-based learning experiences for children in Western school environments that upholds Indigenous knowledges (Bartmes & Shukla, 2020). Further, children are learning differently than past generations, which might in part be attributed to online technology and how it has changed how children are able to access and absorb information (Prensky, 2001; Going et al., 2012). We often see land-based learning and online technologies as distinct and separate ways of engaging youth, when perhaps they are not, and both can be used to advance learning about the land and Indigenous knowledge systems.

There is a growing body of research indicating that Indigenous children are becoming more adept at using online technologies to connect and engage with their communities and learn about their cultural knowledges and traditions (Rice et al., 2016). As a research community, we cannot ignore the significant role of online technology in young peoples lives and we must acknowledge that it is a tool that many Indigenous children and youth use. Currently, however, there is a disconnect between pedagogy that considers learning on the land and pedagogy that considers online technology. Therefore, this study explores the connection between our online and natural worlds and how they might weave together during an intergenerational Indigenous foods program called the Land2Lab Project, which aims to engage Mi'kmaq children in their community-held food knowledges, introduced further below.

Study Overview

By bringing together both Indigenous and Western ways of knowing through Two-Eyed Seeing, this study explores how both land-based and online environments can teach Mi'kmaq children about their community-held foodways and engage them in Indigenous food sovereignty during the Land2Lab Project. This study is distinct from the Land2Lab Project. Yet, my reflections related to this study inherently includes the Land2Lab project, as this study was dependent on the Land2Lab Project activities, strategies, and networks, as will be discussed throughout this thesis. This study is based on the following research question: How can online technology and land-based learning come together to engage Mi'kmaq children in Indigenous food sovereignty?

Emerging from this question is a related sub-question:

- How can Etuaptmumk - Two-Eyed Seeing inform the development of online and land-based child programming in Indigenous food sovereignty?

In order to answer the research question this study includes the perspectives of 14 Mi'kmaq children and one Knowledge Keeper during the Land2Lab Project, as well as field notes that I wrote throughout this study and as a research assistant with the Land2Lab Project.

The Land2Lab Project originated from the Paqtnkek First Nation, located in Antigonish County, Nova Scotia and was built upon a community-based participatory approach [CBPR] that positions community members as equal members of the research team, the voices of community needs, and the experts in determining how to meet those needs (Baum et al., 2006). Kara Pictou, a member of Paqtnkek community and now an employee with the Confederacy of Mainland Mi'kmaq [CMM], was an undergraduate student at St. Francis Xavier University [StFX] in the Human Nutrition program. During

that time, she pursued a directed study titled *Reclaiming Traditional Foods in Mi'kma'ki* under the supervision of Dr. Ann Fox, Associate Professor and Chair of the Department of Human Nutrition at StFX, when Kara became aware of interest among children in her community about learning more about Mi'kmaw foodways. Kara, along with Ann, and Elder Kerry Prosper from Paqtnkek First Nation, a researcher, and Inaugural Knowledge Keeper at StFX, recognized the importance of sharing community-held knowledges on the land intergenerationally.

This led to a partnership between Paqtnkek First Nation and StFX, and in 2019 the Land2Lab Project was created to bring children, Elders, and Knowledge Keepers together on the land to teach and share Mi'kmaq knowledges and foodway practices. Elders are First Nations, Métis, and Inuit peoples who are acknowledged by their communities as an 'Elder' through a lifetime of learned teachings and earned respect (Straka et al., 2020). Many communities have defined protocol and process for becoming an Elder which is not necessarily associated with age (Flicker et al, 2015; Parent, 2018). Knowledge keepers are individuals who may not yet be considered an Elder but carry knowledge and expertise about community-held spiritual and cultural practices and ways of being (Straka et al., 2020). The Land2Lab Project was funded by the Centre of Innovation and Employment at StFX, which supports projects and initiatives that aim to improve socio-economic development in communities by encouraging social innovation and entrepreneurship (StFX Centre for Employment Innovation, 2020). I joined the research team after funding for the project was secured. Then, in 2021, the Land2Lab Project was also funded by Mitacs through their Mitacs Accelerate Grant and the CMM. Through this grant, I worked as an intern with the CMM and research assistant at StFX. During this internship I worked on

my master's research and supported the scaling up of the Land2Lab Project across the province so all Mi'kmaw communities could participate.

While recruitment for this study was open to all mainland Mi'kmaw communities, children from three communities participated; Paqtnkek First Nation, Pictou Landing First Nation located on the north shore of Pictou Harbor, and Wa'koqma'q First Nation located in Cape Breton Island. These three communities participated in the study because of the Land2Lab's relationship with a local Math camp for Mi'kmaq children called Connecting Math to Our Communities that serves these three communities specifically. Additionally, Clifford Paul, Moose Management Coordinator at the Unama'ki Institute of Natural Resources [UINR], Grandfather, and Mi'kmaq Knowledge Keeper, was recruited for this study through the Connecting Math to Our Communities Camp. Prior to this relationship, this study attempted to recruit children for a land-based photography challenge and online sharing circle, which is discussed in more detail in Appendix A, and a recruitment poster can be found in Appendix B. This approach, however, was not successful in recruiting participants. The informal partnership between the Land2Lab Project and Math Camp supported recruitment for the study, and the Land2Lab Project supported the math camp in delivering a day long land-based and kitchen/lab workshop about Indigenous food sovereignty at StFX. This day-long workshop is when data collection with participants occurred.

Two-Eyed Seeing and decolonial theory guide this study design and approach. Decolonial theory acknowledges that research has contributed to the continued oppression and colonization of Indigenous Peoples and works to reframe research in a way that revives, celebrates, and shares Indigenous knowledges and worldviews (Smith, 1999; Tuck

& Yang, 2012). Two-Eyed Seeing encourages the consideration of diverse perspectives so that one perspective does not subsume another, and this aligns with decolonial theory which acknowledges that there has, and continues to be, a power imbalance between knowledge systems (Marshall, Marshall & Bartlett, 2015). Both Two-Eyed Seeing and decolonial theory seek to restore this balance by considering Indigenous knowledges as equally valid as Western knowledges. Decolonial theory also supports and aligns with Indigenous food sovereignty and enables its exploration as both concepts are about Indigenous empowerment and a belief that situations can be transformed by trusting in one's communities' values and abilities (Wilson, 2004).

This study is comprised of one group interview with children led by me, a storytelling session led by Clifford Paul and is further informed by my field notes which are comprised of key intergenerational learning experiences from the Land2Lab workshop sessions. A narrative inquiry analysis approach is used to analyze the data from this study. Narrative inquiry is a useful qualitative analysis, as humans are storytelling beings who lead storied lives, meaning the study of narrative is the study of the ways humans experience the world (Connelly & Clandinin, 2006). In other words, people's lives are constructed through stories and each person's story is uniquely based on their experiences.

Throughout this study I consider stories as extending beyond just words we share with others, and to also reflect our inner worlds, providing insight about the stories we have gathered throughout our lived experiences, influenced by generations of environmental, social, political and economic contexts. Narrative inquiry aligns with decolonial theory in this research because storytelling can be tailored to the circumstance; where the storyteller tells the listener what they are ready or able to hear during a particular moment in time and

acknowledges that the stories of Indigenous Peoples have attempted to be silenced throughout settler-colonial history. Narrative inquiry in the context of decolonial theory offers a way to return balance through story and reinforces the significance of storytelling in both understanding and enabling human health.

Clifford's Storytelling Session

Through completing this study I have gained a deeper understanding of the significance of storytelling in health promotion and in engaging children in Indigenous food sovereignty. In my eyes, storytelling is an essential feature of facilitating and bringing together land-based and online experiences for children, as well as for engaging them in research. Clifford's stories are important to this research because they underscore the role of intergenerational storytelling in engaging children in Indigenous food sovereignty. He shared stories with children about the importance of passing on Mi'kmaw food knowledge through developing stories on the land with family and community. I include a short piece from Clifford's story that represents that storytelling, and forming land-based experiences that create and inform these stories, is central to how we engage children in Indigenous food sovereignty, both on the land and online:

[Indigenous Peoples] have evolved as humans as hunter gatherers... which means we have to climb the cliffs to gather eggs, dive in the ocean for lobsters, chase the moose in deep snow to get that food. We did spear eels through the ice. How many have done that?

[Participants rose hands]

Those of you that have done it and continue to do it, you're able to pass on the stories. If you don't do it; if you don't fish, if you don't hunt, don't gather berries, if you don't cook when you do, the stories end right there.

I have featured more of Clifford's storytelling session at the beginning of Chapter 5: Learnings that highlights lessons learned from this study and many of the reasons why Indigenous food sovereignty is integral for community health, grounding this research in storytelling and Mi'kmaw community-held knowledges.

My Story

My story as the researcher is important to consider as my life experiences and perspectives impact how this research is framed and narrated; researcher reflexivity is a strength and should be acknowledged within all qualitative research, especially in the context of Indigenous research, storywork, and narrative inquiry. I grew up in a rural town in Nova Scotia called Kennetcook, which is said to come from the Mi'kmaw word meaning 'the place nearby' or 'further on' (Nova Scotia Archives, 2019). It was here that I grew up listening to my dad's proud stories about the interconnections of nature. As all children though, we grow up and I left home and became engulfed in the next chapter of my life at Acadia University where I obtained a Bachelor of Science in Nutrition and Dietetics with Honours.

Once I completed my dietetic practicum in the South Shore of Nova Scotia, I moved to Vancouver for a job opportunity delivering community kitchen workshops for newcomers and refugees from around the world. At this job I saw firsthand how we can all come together around food. I was excited about living in a new city and moving there was like stepping into a different world; the sky train was packed with people, there was a

constant buzz of traffic, and the Vancouver skyline was speckled with buildings taller than the trees I had left behind. The mountains peaked above though, always serving as a gentle reminder that just beyond their peaks lay more than the complexity of urban life.

While exploring these mountains I could not help but think of my dad, a true outdoorsman who always tried to instill the importance of spending time in nature when I was a kid. A quiet man, he would come to life in the woods. I remember him excitedly showing my brother and me where the fiddleheads grew in the spring, his tender recollection of the family of deer who he watched from afar, and a firm lecture on the dangers of the pretty mushrooms that grew near the moss-covered logs. His love for the outdoors that he developed as child living in Eel River Bar First Nation, located near Bathurst, New Brunswick, encouraged me to spend countless hours playing in the woods making friends with the squirrels, building forts out of sticks and fallen branches, and imagining that the trees were wise ancestors that would share secrets with me when they swayed and creaked in the wind. In the mountains of British Columbia, thousands of miles away from the woods that I grew up in is where I realized that all this time I had been searching for something that would bring me back to that childhood feeling of being free in the forest. I had been so busy looking further on that I had forgotten the magic of feeling connected to Mother Earth.

This is my story of reconnecting to what guides my life and figuring out how I want to relate to Mother Earth. The relationship with the land that I nourished so fervently when I was a child is what I was yearning for in my young adult life. Through exploring the world around me I came to appreciate my home and value the lessons and knowledge my family gave me that will guide me forward in life. I smile now seeing that all along, all I

needed was to remember the land that I had grown up on and feel gratitude for the relationships and knowledge I gained there. My upbringing has allowed me to appreciate the interconnections of life and nature. I see the extreme importance of passing on these experiences, messages and values to children, as these experiences, messages and values are what helped guide me. My story demonstrates my personal interest in Indigenous knowledges and stories surrounding the land, food, health, and identity.

I further discuss my background and Two-Eyed Seeing as my worldview in Chapter 3. Here, however, I consider why Two-Eyed Seeing is particularly interesting for me in the context of this study as I was the first generation to grow up surrounded by the Internet, and also the first generation to experience social media. Due to my life experiences I can see the value in both land-based learning and online technologies. Two-Eyed Seeing allows me to consider several perspectives and viewpoints about what it means to learn about Indigenous worldviews and knowledges. Can the Internet help support Indigenous communities on their mission to preserve and share knowledge about Indigenous foodways? I argue yes, as long as there is a clear and continuous integration and prioritization of Indigenous knowledges, stories, and worldviews alongside of it.

Significance and Implications

This study acknowledges the importance of land-based education in story creation, and the ability for online technology to share these stories. This study, and the Land2Lab Project, aimed to bring together both Indigenous and Western ways of knowing to support communities in preserving their Indigenous knowledges about food and the land. This study was important for participating children and their communities due to the sharing of Indigenous knowledge surrounding Mi'kmaw foods and culture, and the experiential

learning that took place on the land, in the kitchen, and in the labs during the Land2Lab workshops.

Storytelling is emphasized as being a necessary facilitation tool in both land-based and online environments when engaging children in Indigenous food sovereignty, as it supports the sharing of Indigenous knowledges and foodways. Irrespective of the location of the story being shared, a story can transfer us to the land through imagination, capturing the attention of children and possibly strengthening their Mi'kmaw cultural identity. Additionally, this study emphasizes how as adults we can *all* utilize storytelling and practice Two-Eyed Seeing to imagine and create a better story to share with children by spending time on the land. The approach described within this thesis allows for an understanding of how both land and online environments can contribute to children's' engagement in Indigenous food sovereignty by sharing intergenerational food stories.

Thesis 'Plot' Organization

Each chapter in this thesis builds on the last, reaching its height at the Learnings chapter and reading like the plot of a story with a beginning and a concluding end. Following the Introduction, this story of research continues with Chapter 2: Literature Review which begins by considering Indigenous conceptualizations of health, Indigenous food sovereignty, land-based education and engaging children in online learning opportunities to deepen and support land-based pedagogy. In this review I provide an overview of the literature that investigates the integration of land-based learning and online technology as a way to engage Mi'kmaq children in Indigenous food sovereignty. In Chapter 3, Etuaptmumk – Two-Eyed Seeing is considered as my worldview and I emphasize the importance of the “Indigenous eye” in this study. This is followed by

Chapter 4: Research Methodology and Study Design, where I discuss decolonial theory and how it situates this study in Indigenous food sovereignty and the Land2Lab Project. Then I outline the study design where narrative inquiry is used.

In Chapter 5, learnings are presented. This study explored 14 children's perspectives aged 6 to 16, along with Clifford's storytelling session on Indigenous food sovereignty, and is informed by my field notes of intergenerational experiences we had while engaging in the Land2Lab Project. Three lessons learned from this research have been identified through a narrative inquiry analysis which are 1. Storytelling can Engage Children in Indigenous Food Sovereignty, 2. We Have to Create Food Stories on the Land Together, and 3. We Can Prioritize Indigenous Practices on the Land and Online. In Chapter 6: Discussion, I build on the learnings chapter with my reflections on Two-Eyed Seeing while engaging in this community-based research. I discuss how storytelling connects with child engagement in Indigenous food sovereignty, and how intergenerational food stories can be developed through engaging in Two-Eyed Seeing and Indigenous food sovereignty. Then, the limitations of this research, followed by its significance and implications, my ideas for future research, and the conclusion of this study are presented.

Chapter II: Literature Review

This literature review situates this study within Indigenous conceptualizations of health and explores how land-based learning and online technology can come together to support child engagement in Indigenous food sovereignty. This chapter is separated into three sections. The first section explores Indigenous conceptualizations of health and Indigenous food sovereignty. In the second section land-based learning is discussed, followed by the third section which explores online technology and how it might support land-based learning and the sharing of Indigenous knowledges. Within this literature review I speak broadly about Indigenous Peoples and children across Nations and communities within Canada, as there is limited research specific to Mi'kmaq peoples and children relating to Indigenous food sovereignty, land-based learning and online technologies. When possible, however, I include literature written by Mi'kmaq researchers or authors and literature specific to Mi'kmaw communities and children.

Section 1: Indigenous Health and Food Sovereignty

In this section I introduce and critique Western health approaches and systems for not sufficiently acknowledging colonization as the underlying cause for the health inequities that Indigenous Peoples experience within Canadian society. Indigenous knowledges and conceptualizations of health are positioned as being necessary for achieving health for Indigenous communities. Indigenous conceptualizations of culture, land, and food are introduced as they relate closely to health and are often envisioned differently from that of Western cultures. The term Indigenous food sovereignty is discussed within the literature as a means of upholding Indigenous knowledge, identity, and health, as colonization has made it difficult to access the land and its foods in order to

maintain health and Indigenous ways of knowing. I then discuss how we can ensure that knowledge about the land and its foods continues to get passed on to children and future generations.

Indigenous Conceptualizations of Health

In the past three decades Western frameworks like the Social Determinants of Health [SDoH] have been created to better conceptualize health and social inequities that marginalized populations experience across the world (Greenwood et al., 2015). The SDoH framework resulted from increasing evidence showing that health inequities could not be solved by focusing solely on individual and physical health characteristics within the biomedical model of health. Although the biomedical model of health is useful to the extent that it focuses on diagnoses and treatment of illness and injury, it does not easily enable consideration of how or why an individual became ill in the first place (The Canadian Nursing Association [CNA], 2019). Rather, health inequities not effectively addressed by the biomedical model of health require deeper exploration on how structural aspects of society drive broad patterns of health (Greenwood et al., 2015).

The SDoH can be understood as the economic and social conditions that shape the health of individuals, communities, and societies as a whole, and explores the extent to which an individual has the physical, social, and economic resources to achieve health in their living environments (Raphael, 2016). The SDoH can also be understood as the conditions in the environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life (US Department of Health and Human Services, 2021). The SDoH acknowledge that health is reliant on how societies are organized and how resources are distributed among populations and

communities of people (Raphael, 2016). For Indigenous Peoples living within Canadian society, ability to achieve individual and community health is impacted by many political, social and historical contexts (Loppie Reading & Wein, 2009).

SDoH frameworks applied within research have made possible a more contextually nuanced analysis of the health inequities experienced by Indigenous Peoples relative to non-Indigenous Peoples in Canada (Richmond & Ross, 2009; Loppie Reading & Wein, 2009). This framework, however, is critiqued by Greenwood, De Leeuw, Lindsay, and Reading (2015) for not sufficiently situating or exploring how Canada's history of colonization and capitalization is at the root of Indigenous health inequities, nor sufficiently considers Indigenous knowledges, conceptualizations of health and ways of being as an approach to address these health inequities. Thus, the Integrated Life Course and Social Determinants Model of Aboriginal Health [ILCSD] framework was created to better explore and conceptualize the structural circumstances that shape Indigenous Peoples' health (Loppie Reading & Wein, 2009).

The ILCSD framework helps understand the relationships between the social determinants of health and being Indigenous. In the ILCSD framework, there are three overarching levels of the SDoH that aim to understand health inequities experienced by Indigenous Peoples living in Canadian society. The first level is considered the distal determinants of health, which have the most profound influence on health because these determinants represent the underlying social, political, and historical contexts that construct the other levels of this framework, which are the intermediate and proximal determinants of health (Loppie Reading & Wein, 2009). The distal level explores how societies are organized and structured through government and economic systems, and how

policies and resulting societal and cultural values impact the distribution of resources and services at the subsequent intermediate level of the SDoH (Raphael, 2016; Loppie Reading & Wein, 2009). Unique to the ILCSD, the distal level acknowledges colonization as being a distinct determinant in the lives of Indigenous Peoples, influencing all social, political and historical contexts (Adelson, 2005). Colonialism, racism and social exclusion, repression of self-determination and environmental dispossession are all distal determinants within the ILCSD framework, from which all other determinants for Indigenous Peoples are constructed (Loppie Reading & Wein, 2009).

The intermediate determinants can be thought of as the access and structure of educational systems and health care systems, community infrastructure and services, and the ability to practice environmental stewardship, cultural practices and ceremony (Loppie Reading & Wein, 2009). In other words, the intermediate social determinants of health are the condition of the services and environments that Indigenous Peoples and communities engage in throughout their daily lives. Being able to engage in cultural practices, especially on the land, is an important aspect within the intermediate level of determinants. This is because Indigenous cultures were and are formed from being in relationship with the land (Greenwood & Lindsay, 2019), which will be further explained in subsequent sections of this literature review.

The proximal determinants of health encompass the conditions that directly impact an individual's physical, mental, emotional and spiritual aspects of health (Loppie Reading & Wien, 2009). These include health behaviours, physical environments, employment and income, education and food insecurity. This level acknowledges that individuals can acquire personal skills and resources for developing health behaviours throughout life and

these skills and resources should help people deal with challenges as well as cope with illness and injury (Richmond, Ross, & Egeland, 2007). According to Loppie Reading and Wien (2009), however, unfavourable proximal determinants can contribute to stress and health behaviors that generates or exacerbates physical, mental, emotional and spiritual health problems. When proximal determinants of health do not support control over the basic material resources of life, choice and self-determination, which is key to health, is denied (Loppie Reading & Wien, 2009). Thus, the ILCSD framework positions the proximal determinants of health as being reliant on the previous two levels: the intermediate and the distal determinants of health, meaning that in this model, health is largely reliant on the past and present conditions of governments, states and economies.

The ILCSD framework acknowledges that being Indigenous influences how one is socially regarded within Canadian society. Health and quality of life can be socially determined where health inequities originate not just from lack of services, but also from a society's values and norms and government's inability to redress these values in a way that is supportive to health (Commission on the Social Determinants of Health, 2008). Understanding that health is influenced by a complex system of distal, intermediate, and proximal determinants is important, as this redirects the blame of poor health from the individual to social, political, and historical contexts such as colonization, which continues to influence the current social and physical environments that we all live in today.

The ILCSD framework is helpful to conceptualize what health inequities are impacting Indigenous Peoples in Canadian society. Yet, it is also important to further explore Indigenous conceptualizations of health which are viewed as wholistic concepts that move beyond the Western conceptualizations of health like the SDoH and the

biomedical model of health (CNA, 2019). Using only one approach like the biomedical model of health to address Indigenous health is insufficient and can be harmful. This is because it is difficult within the biomedical model to effectively address the health inequities caused by colonization, and to acknowledge the critical role that history and systemic injustices have in shaping health intergenerationally (Auger et al., 2016). The biomedical model of health does not inherently enable health care providers to consider the wholeness of a person, and often reduces individuals to their discrete physical parts such as organ tissues, and bones. This is important for understanding physical health issues, but it does nothing to understand the context in which health issues manifest or acknowledges issues of colonization as being related to Indigenous Peoples' health. The biomedical model, when used alone, could instead create a narrative where an individual can achieve health regardless of their identity, relationships, community, environment, culture, or state of government and economy.

Within the biomedical model of health, Canadian health care systems have especially struggled to address health inequities caused by the Canadian residential school system. The Canadian residential school system was a social and political tactic historically used by the Canadian government to assimilate Indigenous children into predominant Western society where they were not permitted to speak their language, see their families, or engage in their cultural traditions (Barton et al., 2005). This has caused generations of families to become disconnected from their cultural traditions, impacting health intergenerationally (Barton et al., 2005; Bombay, Matheson, & Anisman, 2014). Thus, prioritizing Indigenous conceptualization of health, knowledges, culture and ways of being in health care is a necessary component of healing from the impacts of colonization.

Health and Culture. There are many different conceptualizations of health. This is because health is a cultural concept based on how cultures have come to understand health through their unique experiences, places and environments, ways of knowing, and technologies, etc., across generations (Napier et al., 2014). Thus, cultural conceptualizations about health and accompanying stories that guide individuals, communities, and populations in how to achieve health vary across the world. This section discusses how culture can protect against health issues intergenerationally, as culture can be relied upon to support health while entering young adulthood and throughout life (Chandler & Lalonde, 2008).

Indigenous foodways also have notable cultural and nutritional benefits for Indigenous Peoples. This is because Indigenous diets and ways of being continues to support health in modern life (Andronov et al, 2021; Lourenco et al., 2008), as through time, Indigenous Peoples, and all other people on Earth, have metabolically evolved and adapted to eat their foodways in their cultural ways (Counihan, 2019). Thus, deviation from cultural foodways can and has resulted in a prevalence of metabolic health disorders and conditions such as diabetes mellitus, cardiovascular disease, etc., across the world impacting many populations, however, most prevalently Indigenous Peoples (Lourenco et al., 2008). It is important, therefore, to critically think about and consider how Indigenous conceptualizations of health, food, and ways of being can complement Western medicine to support health.

Indigenous concepts of health promote a balance between the physical, mental, emotional, and spiritual dimensions of life, where wellness extends beyond the individual to include the spiritual inter-relationships between families, communities, ecosystems, and

ancestral ties connecting past, present, and future generations through story (Adelson, 2005; Greenwood et al., 2015). This wholistic view recognizes that a connection with culture is integral for continued healing, as disconnection from one's cultural ways of knowing and being underlies many of the health issues experienced by Indigenous children (DeCou, Skewes, & López, 2013). Weaver (2001), for instance, provides an overview of health issues surrounding identity formation, where identity is a combination of self-identification and the perceptions of others, and where cultural identity is an important component of an individual's identity (Weaver, 2001). Dukes and Martinez (1997) further explain that cultural identity is not static; rather, it progresses through developmental stages where an individual has a changing sense of who they are, and this process may be influenced by historical, social, economic, geographical and political factors.

Developing a cultural identity consists of a lifelong learning process of cultural awareness and understanding, and by doing so, individuals and collectives are revitalizing Indigenous cultural knowledges and community health across the country (Weaver, 2001). Little Bear (2011) explains that Indigenous communities are reflecting on and practicing their values, beliefs, and cultural customs, which helps maintain the relationships that hold creation together. By sustaining these relationships, communities can ensure that their health and well-being is maintained and improved (Greenwood & Lindsay, 2019). Indigenous cultures, and therefore Indigenous identity formation, are influenced and anchored in the land and reflected in languages, stories, art, and ceremonies (Greenwood & Lindsay, 2019). The relationships between cultural ways of knowing, the land, and health is evident for children when we consider the process of forming a positive self and cultural identity (Battiste & Henderson, 2000; Henderson, 2000).

Health and the Land. The land is an integral aspect of Indigenous health as the land is what has shaped cultural traditions, language, knowledges, and stories, and is where food naturally comes from. Greenwood and Lindsay (2019) state that all determinants of health for Indigenous Peoples relate to the critical relationships to lands and territories:

Their systems of self-government, their languages, their cultures, their healing traditions, their relationships to the animals and plants that nourish their bodies and spirits, and their ceremonies and protocols for maintaining these relationships and ensuring their collective survival are all connected deeply to the land (pp.85).

The health supporting role of the land is seen as inseparable from that of Indigenous cultures, social relationships, and ways of being. This relationship has been sustained for generations through the sharing and practice of Indigenous knowledges and stories (Berkes, 2012; Battiste & Henderson, 2000), and has allowed Indigenous Peoples to successfully live off the land by harvesting and gathering foods to nourish their bodies and spirits.

Health, Land, and Food. Within Indigenous cultures, individual and collective health is closely linked to the health of the land, and it is thought that if the land is well, then the food is also well (Ray et al., 2019). Food comes from the land, meaning that health and well-being are linked to the foods that the land provides (Kuhnlein, Erasmus, & Spigelski, 2009). It is important, therefore, to consider food as a set of relationships between the land, water, and air that provides human beings and all living things on Earth with nourishment, affecting us physically, emotionally, mentally, and spiritually. Food is what nourishes our bodies and provides us with the energy to go about our lives and protects our mental and emotional health in many ways that we are just beginning to

understand (Owen & Corfe, 2017). Food also brings us together, as eating and sharing food is a universal human experience and is rooted in cultural values, traditions and stories.

Indigenous Peoples throughout human history have actively engaged in their foodways on the land which contributes to the maintenance of culture and good nutritional health and wellbeing (Kamal et al., 2015; Turner & Turner, 2008; Martin & Amos, 2016). Foodways are health enabling everyday food practices that are ingrained in cultural and historical contexts (Rearick, 2009). They are passed down through generations and are an integral part of identity expression and socialization (Counihan, 2019). An important aspect of foodways are the foods involved, where, when, and how food is harvested, how it is prepared, and how it is shared. Indigenous foods are typically obtained by hunting, fishing, trapping, gathering, and trading (Baker et al., 2000).

Indigenous foodways have contributed to the health and wellbeing of Indigenous communities for generations, as they have been developed based on lessons learned from the land. These lessons learned have emerged from being engaged with and living in relationship with the land, which has enabled survival and Indigenous culture emerges from this set of relationships. An important aspect of Indigenous foodways is the spiritual relationship that communities have from being connected to the land, which is interconnected to the production and harvesting of foods (Stonechild & Starblanket, 2016). This is a mutually dependent, interconnected relationship where land engagement nurtures spirituality, and likewise where spirituality encourages engagement with the land. Spiritual and cultural relationships with the land have enabled Indigenous communities to produce and harvest foods, develop and practice cultural traditions, and come together to share meaningful stories about Mother Nature that maintain the health of their communities

(Martin & Amos, 2016; Dietitians of Canada, 2014). Thus, supporting the production and harvesting of foods in Indigenous ways supports spiritual connectedness to the land and its foods.

Health and Environmental Dispossession. While many Indigenous Peoples continue to practice their Indigenous foodways (Kamal et al., 2015; Turner & Turner, 2008), there is a growing body of literature indicating that some Indigenous Peoples, and particularly children, are limited in their consumption of Indigenous foods (Hatala, et al., 2017; Richmond & Ross, 2009; Hanemaayer et al., 2020). This, however, is not related to a lack of desire to consume Indigenous foods. In fact, 77% of First Nation adults living across Canada would like to consume Indigenous foods more often (Chan et al. 2019). Despite wanting to consume more Indigenous foods, there are a number of barriers to doing so which involves several complex underlying factors relating to colonization, past and current environmental dispossession, the legacy of the residential school system, and the disregard of Indigenous knowledges within government institutions and organizations (Hatala et al., 2017; Richmond & Ross, 2009; Loppie Reading & Wein, 2009).

Environmental dispossession refers to the processes through which Indigenous Peoples' access to the land and resources of their traditional environments has been reduced or altered (Richmond & Ross, 2009). This has resulted in many of the health inequities that Indigenous Peoples experience today (Reading & Wien, 2009). Reduced access to the land has resulted in changing relationships between Indigenous Peoples and the land, which has had an impact on the acquisition and practice of Indigenous knowledges and foodways. This in turn has affected the quality of social relationships and cultural identity, which would have been nurtured through time spent on the land. Reduced access to the land has

compromised the ability of communities to consume Indigenous foods (Turner et al., 2013). Fostering a connection with the land, therefore, is an important first step towards improving the health of Indigenous communities wholistically. One way Indigenous communities are fostering this connection with the land is through engaging in Indigenous food sovereignty initiatives and strategies, which are discussed in the following section.

Indigenous Food Sovereignty

Indigenous food sovereignty aims to strengthen capabilities and knowledge surrounding Indigenous foodways alongside land protection and conservation efforts so that Indigenous communities can effectively hunt, fish, trap, gather, trade, prepare and eat their foods in a safe and culturally sustaining way (Kamal et al, 2015). Dawn Morrison, Founder of the Working Group on Indigenous Food Sovereignty, has identified four main principles that guide Indigenous communities who are striving to achieve food sovereignty (Morrison, 2011). These principles of Indigenous food sovereignty have been identified through conversations with Elders, Knowledge Keepers, harvesters and community members across Canada and are 1. Sacred Sovereignty, 2. Participation, 3. Self-Determination and 4. Legislation and Policy (Morrison, 2011).

Morrison (2011) states that sacred sovereignty recognizes that food is a gift from the Creator, and Indigenous rights to food are sacred and cannot be constrained or recalled by colonial laws, policies or institutions. Secondly, participation is important for Indigenous food sovereignty because it is fundamentally based on action, or the day to-day practice of individuals, families, communities and nations nurturing healthy relationships with the land, plants and animals that provides Indigenous communities with food. Self-determination refers to the freedom and ability for Indigenous communities to respond to

their own needs about healthy foods and their ability to make decisions over the amount and quality of food that is hunted, fished, gathered, grown and eaten. Lastly, Indigenous food sovereignty attempts to reconcile Indigenous food and cultural values with colonial laws, policies and mainstream economic activities. Indigenous food sovereignty provides a restorative framework for a coordinated, cross-sectoral approach to policy reform in forestry, fisheries, rangeland, environmental conservation, health, agriculture as well as rural and community development (Morrison, 2011).

Indigenous food sovereignty strategies advocate for activities such as reclaiming land for hunting, fishing, trapping, berry picking, community gardens and forests, wild food programs, and other cultural activities along with their cultural meanings and stories (Kamal et al., 2015). These activities allow for the sharing, restoration and development of cultural practices, values, and stories that are important and necessary for the continuance and renewal of ideas, well-being, and empowerment of Indigenous Peoples and environmental health (Cidro et al., 2015). This conceptualization of Indigenous food sovereignty recognizes acts like harvesting and eating wild foods, sharing food with relations, and learning about the land as a means to reconnect with one's cultural ways of knowing. It is also closely related to the health of the land, and therefore, combating climate change and environmental dispossession is an increasing priority for Indigenous Elders and communities who rely on the land to provide healthful food for their communities.

Indigenous food sovereignty is a complex concept that encourages us to critique Western food systems. Western food systems can be defined as the foods originating from forestry, fisheries, aquaculture, and crop and livestock production and the interlinked actors and activities for their processing, distribution, consumption, and disposal that shape

Western dietary patterns, food security and nutritional status (Kuhnlein & Chotiboriboon, 2022; von Braun et al., 2021). Since Indigenous Peoples' worldviews differs from Western science and culture, Indigenous food systems differ from Western systems in that they are intimately tied to nature and spirituality, rather than to linear economic chains (Kuhnlein, Erasmus & Spigelski, 2009). Kuhnlein, Erasmus and Spigelski (2009) define Indigenous food systems, as all foods within a particular culture that are available from local natural resources, including their sociocultural meanings, acquisition and processing techniques, use, biological composition and nutritional consequences for the people using the food. Indigenous foods and food systems also vary greatly based on factors such as geography, seasonality, and cultural group (Earle, 2011). Through Indigenous food sovereignty, we can consider how Western food systems impacts the health of the land, and how colonization and capitalization has impacted how we grow, harvest, access, share, and eat our foods, and how Indigenous food sovereignty might enable a different reality.

Indigenous food sovereignty encourages all of us as Treaty People to work with Indigenous communities. The treaties signed by Mi'kmaw traditional chiefs and the King of Great Britain and his representatives in the early 18th century articulate a shared relationship of peace and friendship (Battiste, 2016). They also outline negotiated principles and outcomes that are a significant part of the history of Canada, which Battiste outlines in her book *Living Treaties: Narrating Mi'kmaw Treaty Relations* (2016). Through a shared relationship of peace and friendship, we can all help to protect unceded traditional lands and foods so that we can revitalize the balance in nature that has been disrupted, uphold Indigenous cultural knowledges and relationships, and promote health holistically. We can do this by staying true to the intended and sacred meaning of the

treaties, and to use them to mobilize Mi'kmaw resurgence that seeks to reaffirm Mi'kmaw identity, consciousness, knowledges, and heritages, as well as connections and cultural rights to the land (Battiste, 2016; Corntassel & Hardbarger, 2012).

It is important to note, however, that the term sovereignty has been challenged within Indigenous literature. Conventionally, sovereignty has been understood as the final and absolute authority in a political community and is a concept related to a government or states' legal control over a geographical area and its population (Bartelson, 2006). It is connected to the notion of private property and resource accumulation, where nature is divided and extracted based on material value and state politics (Menser, 2014). For this reason, the term sovereignty has been critiqued within Indigenous literature, as it refers to colonialist ideas of ownership over land as a resource, which conflicts with how land is regarded within Indigenous communities (Corntassel, 2008). The term food sovereignty, however, values food as a means of maintaining sustainable ecosystems and promoting cultural integrity as opposed to a means of maximizing and accumulating capital, resources, and property (Andree et al., 2014; Desmarais & Wittman, 2014; Holt-Giménez & Altieri, 2013; Menser, 2014). It is a reaction against neoliberalism and a movement for the democratization of the food system.

The Via Campesina Declaration of Food Sovereignty (1996) has defined food sovereignty as the human right of each nation to maintain and develop its own capacity to produce its basic foods that respect cultural and productive diversity. Food sovereignty aims to develop and uphold participatory democracy, dignity, solidarity, and social inclusion (Menser, 2014). The goal of food sovereignty can be to achieve self-determination without political intervention from the state, while in other cases, they are

called upon for collaboration while respecting the ability of communities to assert their rights in a meaningful way (Menser, 2014). The notion of food sovereignty, however, was originated by movements justifying and organizing themselves against and despite states, and Indigenous Peoples have developed their own vision of food sovereignty to capture their relationship with the land and their Indigenous foods.

Like food sovereignty, the Indigenous conception of food sovereignty is grounded in a conception of self-determination that considers multiple patterns of human associations and interdependency and integrates the political, economic, ecological, and socio-cultural (Corntassel 2008). Indigenous food sovereignty, however, differs from food sovereignty in a number of ways. For instance, it is not formulated in terms of agriculture or food, but rather includes all cultural practices related to food, from language and medicine to production of foods, and forms of worship and celebration (Stavenhagen, 2006). Instead of focusing on workers' rights and agricultural systems, it is oriented towards Indigenous communities' cultural rights, and positions the land and nature not just as significant ecological beings, but cultural beings (Litfin, 1998).

Food sovereignty is based on the idea of universal human rights, which has been critiqued for not effectively considering or appreciating Indigenous people's cultural rights related to the land (Corntassel, 2012). As Corntassel (2012) argues, rights-based approaches do not offer meaningful restoration of Indigenous homelands and food sovereignty. The notion of Indigenous rights emerged from Indigenous communities struggles to practice cultural traditions due to a lack of recognition within government institutions of their interconnected cultural relationships that they have with the land. Indigenous rights, therefore, have been conceptualized to appreciate the cultural

distinctiveness of Indigenous Peoples and their relationships to the environment (Kulchyski, 2011). The concept of food sovereignty does not sufficiently recognize Indigenous cultural rights or concepts of Mother Nature, whereas Indigenous food sovereignty recognizes their interconnected relationships with the land, water, air and ice and food.

Indigenous food sovereignty also shifts discussions about Indigenous food away from food insecurity and towards an examination of food systems. Food insecurity is defined by the United Nations Subcommittee on Nutrition as “the limited or uncertain availability of nutritionally adequate, safe foods or the inability to acquire personally acceptable foods in socially acceptable ways” (2001, p.3). There has been a disproportionate amount of literature that identifies food insecurity issues facing Indigenous communities across Canada compared to literature focused on the general population in Canada. This literature details Indigenous Peoples experiencing risk factors associated with socio-demographic characteristics with food insecurity, including poverty, insecure housing, and reliance on government assistance programs (Tarasuk et al., 2014), and are among the highest-risk populations for diabetes, cardiovascular disease, and mental health related issues (National Collaborating Centre for Indigenous Health, 2015). Indigenous food sovereignty has been framed in some instances within the existing literature as a way to address food insecurity and associated health issues (Bagelman, 2018). This sort of framing, however, does not sufficiently recognize Indigenous rights to the land, Indigenous perspectives on wholism and health, the importance of food and land as a cultural anchor for sustaining Indigenous knowledge systems, cultures, and identity, or acknowledge colonization as the root of health inequities.

Focusing on achieving Indigenous food sovereignty and the strength of Indigenous food systems, rather than on the narrow assumptions that Indigenous communities are food insecure supports Indigenous ways of knowing as an important way of sustaining health (Kuhnlein, 2015). Thus, fostering a connection to the land and sharing intergenerational knowledge and stories about Indigenous foodways is necessary if we are to strengthen Indigenous food systems and change the narrative surrounding colonization and Indigenous Peoples' health in research. The following section illustrates how Indigenous communities are actively addressing the health, identity, and wellbeing of their communities through intergenerationally passing on knowledges about Indigenous foodways and the land.

Health and Indigenous Knowledge Sharing. Passing on knowledge of Indigenous food systems and foodways to younger generations has been identified as a top priority for ensuring the health of Indigenous communities (Turner, 2013). Communities seeking to preserve their languages and customs should place an emphasis on children and their development (Ross, 2016). Lines and Jardine (2019) state that children hold a special place in their communities where they embody the past through teachings, experience the present, hold the dreams for the future, and their individual identities ensure collective continuity. Children are seen as key to knowledge preservation with the hope to see the next generation of children being able to fish, harvest edible plants, hunt, prepare and share food according to tradition (Bagelman, 2018; Cidro et al., 2015). With almost half (46%) of Indigenous people in Canada being less than 25 years of age (Statistics Canada, 2016), ensuring that children have opportunities to learn about and participate in their culture is important for their individual health and the collective health of their communities.

To pass on knowledges to younger generations, oral traditions are keeping Indigenous knowledges and ways of being alive so that ceremonies, songs, dances, and stories continue to pass from one generation to the next (Cote-Meek et al, 2012; Barnhardt & Kawagley, 2005). Oral teachings and the land are tightly connected, with the land being the traditional place to learn and teach (Cote-Meek et al., 2012). Being on and working with the land is what provided Indigenous Peoples with their knowledge about the land, which in turn has influenced the creation of their languages, cultures, foodways and spirituality (Belanger, 2013). The land, therefore, is important to all aspects of physical, spiritual, emotional, and mental health and well-being. Indigenous communities have retained and, in some cases, have begun to enhance their Indigenous foodways through sharing knowledge on the land.

Section 2: Land Based Learning and Education

The following section outlines how land-based learning can maintain Indigenous cultures and ways of knowing about Indigenous foodways, upholding the intergenerational transmission of knowledge. In this section I introduce the term decolonization, followed by how Canada's public education system can support Indigenous community health through fulfilling the Truth and Reconciliation Commission's [TRC] seven education related calls to action published in 2015. I highlight the importance of land-based learning in Indigenous pedagogy and in maintaining Indigenous knowledge through the sharing of stories. I then make the connection between land-based learning and online learning to support child engagement in Indigenous knowledge systems and foodways.

Decolonizing Education

Ballantyne (2014) states that Indigenous-led land-based education supports students in learning from the land in a space where Indigenous worldviews are central. Incorporating Indigenous knowledges and pedagogies to connect students with the land as a source of learning has important implications for decolonizing education (Ball, 2004; Scully, 2012; Styres & Zinga, 2011; Wildcat et al., 2014). Lakota scholar Waziyatawin Angela Wilson (2004) has conceptualized the term decolonization as a process which entails developing a critical consciousness about the causes of oppression, the distortion of Indigenous history, and the degrees to which we as a society have internalized colonialist ideas and practices. It also calls for Indigenous resurgence, where Indigenous Peoples lead the way in this integration of knowledge systems through connecting with the land and all their relations and celebrating their individual and community-held cultural knowledges (Elliot, 2018). Decolonization is discussed in more detail in Chapter 4: Research Methodology and Design. Canada's education system, however, is an institution that has the potential to hold a lot of power and influence in both colonization and decolonization efforts, as school is where many children begin to develop their sense of identity and learn how to think critically about the world around them (Battiste, 2013).

Unfortunately, Canada's public education system continues to prioritize Western knowledges and worldviews in the classroom, limiting Indigenous students' ability to understand, protect, and utilize their Indigenous knowledge systems (Shankar et al., 2013; Battiste, 2013). In Canada, education is the responsibility of provincial and territorial governments. Democratically elected school boards are to advocate and support students, schools, and communities in having their educational needs met, and provincial governments work with these school boards while also deciding what school boards do,

how they get their money, and how much local autonomy they have in shaping education (Wotherspoon & Milne, 2021). Consequently, some aspects of Canada's public education system can vary between provinces, and even between schools in the same province. However, provincial education is still overseen by the federal government to ensure that a standard of curriculum is met (Wotherspoon & Milne, 2021).

It is crucial to note that the favouring of Western knowledges can create a learning environment for Indigenous students where they feel like they do not belong; where their cultural knowledges, traditions and values are not being recognized or celebrated comparatively (Kirkness & Barnhart, 2001). This is dangerous because when a young person's culture and cultural knowledges are not shared within their learning space, this can lead to identity and health struggles (Chandler and Lalonde, 2008). Ultimately, Canada's education system has the ability to improve the health of Indigenous communities by decolonizing its curriculum through integrating Indigenous knowledges and pedagogies across the country, addressing the seven education-related calls to action outlined in the TRC (2015).

Truth and reconciliation is a term that is used to describe the two-pronged approach to respond to the lasting impacts colonization has had on Indigenous Peoples (TRC, 2015). First to educate society on the truth of the past and present, and secondly, to make the societal, economic and structural changes required to move forward in a way that is mutually beneficial to all peoples (TRC, 2015). The TRC was formed in June 2008 with a mandate to inform all Canadians about what happened in Canadian Residential Schools and to begin reconciliation with Indigenous Peoples. The Commission documented statements from student survivors, families, and communities, and a significant result was

the publishing of the TRC reports and the 94 calls to action (TRC, 2015). These calls are broken down into sections, addressing all areas of Canadian life and include education, child welfare, language and culture, health, justice, media, sport and recreation, business reconciliation, newcomers to Canada, and more (TRC, 2015). There are seven education related calls to action that specifically identify the need for culturally appropriate curricula:

1. The repeal of Section 43 of the Criminal Code of Canada by the Government of Canada, and for the federal government to:
2. Develop with Indigenous groups a joint strategy to eliminate educational and employment gaps between Indigenous and non-Indigenous Canadians
3. Eliminate the discrepancy in federal education funding for First Nations children being educated on reserves and those First Nations children being educated off reserves
4. Prepare and publish annual reports comparing funding for the education of First Nations children on and off reserves, as well as educational and income attainments of Indigenous Peoples in Canada compared with non-Indigenous people
5. Draft new Indigenous education legislation with the full participation and informed consent of Indigenous Peoples that provides sufficient funding to close identified educational achievement gaps within one generation, improves education attainment levels and success rates, develops culturally appropriate curricula, protects the right to Indigenous languages, including the teaching of Indigenous languages as credit courses, enables parental and community

- responsibility, control, and accountability, enabling parents to fully participate in the education of their children, and respects and honours Treaty relationships
6. Provide adequate funding to end the backlog of First Nations students seeking a post-secondary education
 7. And for the federal, provincial, territorial, and Aboriginal governments to develop culturally appropriate early childhood education programs for Aboriginal families (TRC, 2015, p.2).

Since 2015, however, not one of the education related calls to action have fully been met (Jewell & Mosby, 2021).

Implementing Indigenous knowledges and perspectives into Canada's public education system would require the acknowledgement and rectification of harmful historical colonial doctrines, acts, and policies (Jewell & Mosby, 2019). Jewell and Mosby (2021) criticize the Government of Canada's lack of action in ensuring that systems of oppression no longer exist in Canada, stating that the barrier to meaningful action lies at the government level, where unfortunately, paternalism exists among political actors and policy makers, and legal myths are upheld to justify dispossession of Indigenous lands, among other excuses to avoid reconciliation. And yet, Jewell and Mosby (2021) recognize that it is Indigenous communities, organizations, advocates and allies that have been behind all meaningful progress in the calls to action to date, and Indigenous resurgence will continue to propel Indigenous-led education, decolonization and reconciliation in the next generation.

If Canada were to integrate Indigenous knowledges and pedagogies into its public classroom and school environments in the way the TRC intends, this could have many

positive effects on the health of Indigenous children throughout the course of their lifetime (Braveman, Egerter, & Williams, 2011; Cherpako, 2019; Kirkness & Barnhart, 2001). This is because knowledge is fundamental to understanding, interpreting, and establishing values within a society, and control over its production is an integral component of cultural survival (Hoare, Levy, & Robinson, 1993). Through self-determination of epistemologies, pedagogies and curricula, Indigenous communities can continue the process of decolonization, supporting the health of future generations (Drouin-Gagné, 2021). Furthermore, it is all our duty as Treaty People to learn from, work together with, and support Indigenous communities in creating this reality (Battiste, 2016).

Land-Based Learning

Land-based learning is an effective, experiential way for Indigenous knowledges and ways of being to be passed on to children. This is because Indigenous knowledges and cultures require the protection of the lifestyles and foodway practices that permit intergenerational use of the lands (Battiste, 2013; Matthews, 2019). Below I define and situate land-based learning within the context of Indigenous knowledge systems, as there are tensions surrounding the effectiveness of land-based learning when facilitated from a Western worldview. I then discuss the benefits of land-based learning when guided by Indigenous worldviews, knowledges and pedagogies.

In the literature, land-based learning is often conceptualized as emphasizing the importance of learners physically spending time on the land doing outdoor activities like hunting, gathering, fishing, and trapping (Bowra, Mashford-Pringle, & Poland, 2021). While physically being on the land is an important component of land-based learning, Streit and Mason (2017) state that land-based learning goes much deeper than just partaking in outdoor activities. According to Bowra and colleagues (2021), this common

conceptualization could be better understood as place-based education which is rooted in a very different pedagogy than land-based education. Place-based learning takes existing Western education curricula and moves it to outdoor spaces, continuing to teach dominant paradigms without explicit spiritual or emotional connection to the natural environment (Bowra et al., 2021). These education styles are common within a variety of academic disciplines, including outdoor physical education and natural sciences (Bowra et al., 2021; Hatcher, Bartlett, Marshall, & Marshall 2009a).

Place-based education is different from land-based learning because it does not connect place with Indigenous history, knowledges, or stories (Bowra et al., 2021). Rather, land-based learning emphasizes Indigeneity and the relationships that Indigenous Peoples have with Mother Nature (Styres, Haig-Brown, & Blimkie, 2013). Thus, land-based education can be understood as a way of thinking about and relating to the natural world that upholds Indigenous ways of being, and as a result, Indigenous foodway practices such as hunting and gathering. Centring Indigenous Peoples and their ways of knowing, being, and thinking in land-based learning is imperative in moving beyond place-based education that continues to contribute to the erasure of Indigenous histories and ways of relating to the environment (Bowra et al., 2021).

According to Riley (2020), considering Indigenous worldviews are important when partaking in land-based learning because facilitating land-based learning experiences with a Western worldview can potentially reinforce colonial ideologies. In her 2020 study she (re)conceptualizes Western binary logics and explores possibilities for land-based experiential education to address past, present, and future socioecological injustices. Socioecological injustices can be understood as any environmental injustice that harms or

upsets the balance within an ecosystem as a result of human behavior and interaction (Gerlak & Zuniga-Teran, 2020). Riley (2020) refers to the concept of colonial imagery, however, in that through a White, Western lens of settler colonialism, land is often envisioned as an empty site awaiting human development and use. This imagery has led to many socioecological injustices that have contributed to climate change (Riley, 2020; Ripple et al., 2020). This can include agricultural methods that deplete soil composition, produce significant carbon and methane emissions, and require large amounts of water for livestock and mono-crop production, for example (Aldeg, 2019). Such colonial imagery differs from Indigenous cultural and spiritual ontologies of land, which typically understands the land as alive cultural beings imbued with agency that has spiritual, emotional, intellectual and physical aspects, and is mutually entangled with human inhabitants (Riley, 2020; Styres et al., 2013). Riley (2020) further asserts that:

“given these philosophical differences between White, Western conceptions of land and Indigenous conceptions of land, it is important to consider how a colonial imaginary might exacerbate binary logics in outdoor experiential education teaching and learning practices.” (pp. 95).

Riley’s (2020) work underscores the need for thoughtful consideration on how we think about the land, relate to the land, and speak about the land to children, and consider how Indigenous concepts of relationality can support us towards reimagining this colonial imagery. Thus, it is important that educational systems and programs incorporate Indigenous knowledges and conceptions of the land by supporting Indigenous Knowledge Keepers and Elders in leading this incorporation and critique of colonial narratives. And as Simpson (2014) argues, if we are serious about decolonizing education and educating

people within frameworks of Indigenous intelligence, we must find ways of reinserting people into relationships with and on the land as a mode of education. Land-based education, therefore, is envisioned as a strategy for teaching Indigenous knowledges and providing learners with an experiential understanding of the knowledges that Indigenous Peoples have gathered from their intergenerational relationships with Mother Nature.

Indigenous Knowledge Keepers believe that the primary benefit of land-based learning is the potential to encourage holistic engagement with Indigenous knowledges (Bartmes & Shukla, 2020), and there is a growing body of literature that describes children engaging on the land as a way to (re)connect with their cultures (Big-Canoe & Richmond, 2014; Cidro et al., 2015; Kamal et al., 2015; Howell et al., 2016). Two studies that focus specifically on teaching children about their Indigenous foodways emulate the same purpose backing the Land2Lab Project; to share community-held Indigenous knowledge and foodways with children intergenerationally on the land and in the kitchen. The first study is Kenny and colleagues' (2018) research surrounding an Indigenous food program that was developed at East Three Schools in Inuvik, Northwest Territories as part of a research collaboration with school staff and local Indigenous Elders. The program focused on promoting Indigenous foodways in the region, engaging children with their foodways in a school-based setting, and the development of Indigenous knowledges and skills amongst children (Kenny et al., 2018). Students engaged in Indigenous food procurement practices including harvesting, preparation, consumption, and sharing of food, and engaged in land-based activities where Elders shared stories of life on the land and about the importance of Indigenous foods to culture in the region.

After harvesting food in this program, an Elder led students in preparing recipes with the harvested foods and shared knowledge about their nutritional and medicinal value. The prepared foods were then shared with younger students during snack breaks. A series of weekly food-based activities were also developed in partnership with an intergenerational program at the Inuvik's long-term care centre to promote intergenerational connections and build on the strength of Elders to share their knowledges with children (Kenny et al., 2018). This Indigenous food program at the East Three School in Inuvik demonstrates the application of land-based and intergenerational education for Indigenous children, and the role of multisectoral partnerships in addressing food sovereignty challenges.

The second study explores Bagelman and colleagues (2016) research surrounding an innovative project, Feasting for Change on the Coast Salish Territories in British Columbia. The project involved Indigenous families in revitalizing Indigenous knowledges about food and included fifty-one feasts that were facilitated by Elders in the area. These feasts incorporated several Indigenous food practices and focused on sharing stories about both the loss of Indigenous foodways and the value of revitalizing and preserving these practices (Bagelman et al., 2016). A notable aspect of the project, however, was the leadership role that Elders and children both played in identifying the proper protocol for all program activities. There was a diverse working group developed that was grounded on the principle of reciprocity and was aimed at creating a caring environment where ideas could be freely shared (Bagleman et al., 2016). It was found that Feasting for Change allowed participants to reconnect with Indigenous foods, deepened the sense of Indigenous

knowledges among children after events, and was an opportunity to build community relations (Bagleman et al, 2016).

Both studies demonstrate that involving children on the land and in their Indigenous foodways intergenerationally offers a culturally protective way to share and pass on Indigenous knowledges. These studies highlight the importance of intergenerational learning, where Elders and Knowledge Keepers share stories with children about the land and its foods, strengthening community and cultural connections. Grounding these land-based experiences in intergenerational community-based knowledge is key. The experiential nature of learning on the land intergenerationally provides children with opportunities to learn about their culture and their Indigenous foodways in the way that it has always been done. Land-based learning is an accepted mode of program delivery within Indigenous communities, and there are many benefits of learning and spending time on the land.

Connecting Land-Based Learning with Online Technologies

Literature that explores Indigenous land-based education has offered evidence of its support and effectiveness in engaging and teaching children on the land. Yet, children are increasingly using online technology to engage with their peers and to learn and access information, which, presumably takes them away from the land. Social media and the use of the Internet are widely used and accepted modes of communication and connection for many Indigenous children (Rice et al., 2016). Acknowledging this and accepting that today's children will continue to live in a world with technology, this study explores how land-based learning and online technologies can come together to engage children in Indigenous food sovereignty.

The integration of land-based and online pedagogies can potentially acknowledge that both the land and technology are important aspects of children's identity and together, can enable them to connect with their peers and learn about their culture (Rice et al., 2016). Connection with the land has the potential for Indigenous children to (re)connect with their culture, better understand the problems that stem from the experience of colonization, and support health (Freeman, 2019). Sharing Indigenous knowledges and land-based experiences online may support the sharing of intergenerational stories and Indigenous knowledges. The following section outlines how online technologies and education can potentially reinforce the importance of land-based experiences and support children in engaging with their communities and their Indigenous foodways.

Section 3: Online Technology and Online Learning

Children are learning differently from previous generations due to the online technologies they have access to today (Prensky, 2001). It is important to recognize this and develop education systems, curricula, and programs that are responsive to children's' realities and learning needs, which are also influenced by socio-political and historical contexts. The integration of online technologies into land-based pedagogy, however, is not meant to dismiss or undermine the importance of land-based pedagogy within Indigenous communities. Rather, it could potentially be considered a tool that supports children in engaging in land-based learning, and potentially enable them to engage more actively within their communities. Two-Eyed Seeing will be discussed at the end of this section to support the integration of land-based learning and online technology.

Technology and Different Ways of Learning

Although I acknowledge that there are exceptions related to equitable access, generally this generation of children, both Indigenous and non-Indigenous, represent the first generation to grow up with online technologies at their fingertips (Radoll, 2014). It is the first generation to have spent their entire lives surrounded by computers, cell phones, and all the other technology that we use today. Within this study, online technologies are broadly defined as any technological platform or device that children utilize to share, engage with and gather information from that is connected to the Internet. I have kept this definition broad, as the Land2Lab Project activities and approaches for child engagement continuously changed based on the needs of community members. Despite challenges of access and adoption of digital connectivity, the Internet and social media are being used within Indigenous communities across Canada (Castleton, 2018).

In the past 20 years, the Internet has grown into the largest, most accessible database of information ever created (Castleton, 2018). It has changed the way people communicate and connect, do business, and think about knowledge and learning (Prensky, 2001). The Internet has become more than just a medium to access information; it increasingly connects communities and provides access to important services (Campbell, 2018). While there have been differing views regarding the acceptance and use of the Internet within Indigenous communities, its access is becoming fundamental for the development of basic rights such as social security, cultural expression, and conservation (Castleton, 2018). This could be possibly attributed to the idea or expectation that everyone has access to online technology and have the skillset needed to use it. More services are being made available online, and in some cases even replacing in-person services. Thus, individuals without access to or the skills to be able to use online technology are

disadvantaged by not engaging with online tools to access services, meaning that access to and literacy in online technologies is becoming increasingly important in maintaining health.

Online technologies, however, are making education more accessible than ever before, especially during the global COVID-19 pandemic that began in early 2020. Online education relies on the Internet for sharing and teaching information, and with this simple definition comes many ways in which children can engage in learning through online technology. Children can access information in many forms including audio, video, text, graphics, virtual and interactive programs, and live video or text chats to connect with other learners and teachers (Anderson, 2008). Many children, because of their experiences and proficiency in online technologies, are able to obtain information quickly and can access perspectives that may not be shared with them in a classroom setting (Prensky, 2001). Due to COVID-19 many children across Canada were able to engage in online learning environments in order to protect against community spread of the virus.

Despite students being increasingly able to access information and learn online, there is growing evidence on students' online learning experience during the COVID-19 pandemic that has identified several concerns (Yan et al., 2021), including issues with internet connection, limited collaborative learning opportunities (Yates et al., 2020), reduced learning motivation, and increased learning burdens (Niemi & Kousa, 2020). Kilday and Ryan (2019) have found that both peer and teacher relationships are important for early adolescents' behavioural and learning engagements. Ultimately, online learning might not facilitate the social relationships or support networks that children enjoy while at school. While online education became more prevalent and accessible during COVID-

19, there are many potential barriers that have been identified that suggest that it should not be used as a primary mode of education for children.

Beyond school environments, however, children are still using online technologies to access information and to connect with their peers (Yan et al., 2021). Children are living and learning differently than previous generations which complicates how Indigenous knowledges have traditionally been passed on. Now, children can access information about their culture online, and within Mi'kma'ki, there is a growing online presence of Mi'kmaq Knowledge Keepers and organizations dedicated to highlighting and sharing their culture. For example, on Instagram and Facebook there are several accounts that display land-based activities and intergenerational knowledge sharing surrounding Netukulimk. Netukulimk is explained by Prosper, McMillan, Davis, and Moffit (2011) as:

a complex cultural concept that encompasses Mi'kmaw sovereign law ways and guides individual and collective beliefs and behaviors in resource protection, procurement, and management to ensure and honor sustainability and prosperity for the ancestor, present and future generations (pp. 1).

This complexity is rooted in the spiritual and cultural relationship that Mi'kmaq peoples have with the lands, its foods, and all other relations that exist. Netukulimk will be explored in more detail in Chapter 3.

Sharing images and the stories of Indigenous children while on the land on social media can be a contemporary and complementary way to store, protect, and celebrate Indigenous knowledges and culture. Through exploring online technology, I have become more aware of its role within Indigenous children's lives, how it can potentially help preserve and celebrate Indigenous knowledge systems, and how communities are already

actively utilizing online technologies in ways that support their culture. Below I further consider how land-based learning and online technologies can come together through Two-Eyed Seeing.

Online Technology and the Land

This section discusses online technology in relation to land-based learning environments and Indigenous knowledge systems. The purpose is to explore online technologies and the Internet as a way to supplement land-based learning opportunities for Indigenous children and engage them further in Indigenous food sovereignty. I realize, however, that there may be tensions surrounding this idea. Understanding the historical mistreatment of Indigenous Peoples by Canadian government and society, I am aware that there may be apprehension concerning the integration of online technologies into land-based pedagogies, as the use of Western technologies and pedagogies could be seen as further perpetuating issues of colonization. Below I provide some literature surrounding the possible tensions between the bringing together of the Western and Indigenous eyes and knowledge systems in the context of this study. I then discuss how Two-Eyed Seeing can support us in understanding how land-based learning and online technologies can be used together to support children.

Tensions Between the Eyes. Russell Means, in his powerful speech in 1980, warns against adopting aspects of Western culture because it could be detrimental to Indigenous ways of life. Using online technologies could be seen as leaving behind Indigenous knowledges, traditions, and ways of relating to the world. Means' (1980) argument is valid in the sense that there are differences between the Indigenous and Western knowledge systems, and that Western society continues to mistreat Indigenous Peoples, which exists

on the Internet as well. The Internet is well-known for helping spreading information to people, but it is also a marketplace where large corporations and economies exist. Many Indigenous cultures have spiritual, reciprocal and ceremonial components that are different from capitalist economies and ideologies that exist in Western culture and on the Internet (Paul, 2000). Thus, there are concerns surrounding the protection and exploitation of Indigenous knowledges when shared online. There might be instances, for example, where individuals, websites, or organizations try to benefit from or claim Indigenous knowledges as their own, when in reality they may have no knowledge of Indigenous knowledge systems or history, further perpetuating issues of colonization.

Teaching children how and where to safely gather and share their knowledges online should be prioritized to protect against Indigenous knowledge exploitation on the Internet. To support this notion, the iNaturalist app, for example, has an ‘obscured’ option when posting observations of culturally significant species to help ensure that the data and location of the species remains protected (iNaturalist Network, 2020). This means that iNaturalist does not share the locations of observations identified as species at risk, and further, you can obscure your own uploads to iNaturalist which still provides important citizen-based science information, while protecting the location of potentially important cultural and ecological species from poachers and collectors.

There is also concern regarding how young people interact with content from the Internet and social media. There is a growing body of research indicating that overusing online technology can contribute to the deterioration of psychological health by increasing levels of depression, anxiety, and stress among children (Pontes, 2017). This underscores the need for teaching children how to find balance in their online technology use, while

supporting them in engaging in behaviours and practices that support and uphold their physical, mental, emotional and spiritual health. Additionally, some research shows that young people are not as critically adept consumers of online media as they need to be (Talib, 2018; Wineburg et al., 2016). Anyone can produce content online and call it truth, which leaves it up to the consumer to be critical of the information that they come in contact with. A study conducted at Stanford University investigated the ability of seven thousand teenagers to evaluate the credibility and quality of news available through social media and concluded that these teenagers were “easily duped” by false news (Wineburg et al., 2016). The immersive and complex media environment that children are experiencing today calls for digital literacy that prepares students to understand and engage with social media more effectively (Talib, 2018). Research into digital literacy has sought to address the development of tools and methods to aid students in thinking critically about the information that they consume on the internet (Talib, 2018).

To support children and young adults in becoming critical Internet users, Manuel and Schunke (2016) developed a unique interdisciplinary course on social media at Southern Illinois University Edwardsville. The course focused exclusively on historical and philosophical issues surrounding social media as a way to question and think critically about the information that students consume. Manual and Schunke (2016) conclude that by thinking about social media within broader and deeper historical and philosophical contexts, students were able to analyse and critique online information. By helping students use the cognitive tools of history and philosophy to examine social media, students were able to develop a valuable skill set for thinking critically about the legitimacy of the media that they consume online every day (Manual & Schunke, 2016). Within this thesis,

Indigenous food sovereignty is positioned as a way to engage children to think critically about the information that they consume online, and to consider the historical, political, and social contexts in which the information was produced.

In our increasingly technological environments, many people spend a great deal of time online. Children in particular spend more than 2 hours on the Internet every day (Chen & Nath, 2018). Thus, it is important to understand how children are using the Internet and what information they are consuming. Although further research is needed to understand this area, a systemic review by Park and Kwon (2018) specifically explored how children access health-related information online across nineteen studies and provide some interesting insights. They found that most children have used the Internet for health-related purposes, and it represents their most frequent source of health-related information (Park & Kwon, 2018). They also found that many children consider the Internet to be a safe space where they can share health information and are interested in finding information from reliable sources from health care professionals and experts, as well as from their peers. This suggests that children are using online technologies to learn about and support their health and recognize the importance of finding credible sources for gathering this information.

While studies show children may be susceptible to taking information found online at face value, parents, teachers and health professionals can support children in how to think critically about the world that they live in so that they can become more equipped to determine fact from fiction in order to support their health. Yet, there is still a question about how online learning can uphold and share Indigenous knowledges about the land, which is crucial health-related information for Indigenous children.

Indigenizing Technology. Through Two-Eyed Seeing, we can consider how online technologies can support Indigenous communities in upholding Indigenous knowledges. Western pedagogies, however, have been notoriously prioritized within Canada's educational systems, and this hierarchy has influenced how we teach today and what information we have taught them to be valid or true. To support learning opportunities for Indigenous children, Borden and Wiseman (2016) discuss the importance of integrating Indigenous perspectives into and alongside Western pedagogies. They state that this process should not be about specific content and control, but rather about pedagogy and how engagement in teaching and learning allows for growth in mind, body, spirit, and heart. While this values both Western and Indigenous knowledges as being critical for child education, it places greater emphasis on how these knowledges are taught and framed as being influential to how children perceive themselves and the world around them. Therefore, it is important that land-based education be part of Indigenous students' school experience, and further, that land-based education be grounded in Indigenous knowledge systems and ways of knowing. This is supported by Bonk and Reynolds (1997) who argue that it is the instructional strategy, meaning the way that educators share and teach information to their students, and not necessarily the technology or environment that influences quality of learning. Rather, quality of learning for Indigenous children is deeply reliant on the instructor and their ability to acknowledge both Western and Indigenous knowledges and embed them both within their teaching environments, weaving between Western and Indigenous approaches in the classrooms, online, and on the land (Bonk & Reynolds, 1997).

When we accept that that quality of learning is influenced by an individual's instructional strategy, we can see online technology as a tool for sharing knowledge, and how this tool is used will determine how beneficial it is in supporting land-based learning and Indigenous ways of knowing and being. Using technology with a Western worldview that does not inherently value the natural world could further remove us from it. Whereas using technology with an Indigenous perspective that encourages us to seek out information and stories relating to the land and its foods, could allow us to use technology in a way that inspires us to be part of nature. Thus, the way we use technology is important and we should take time to consider if our approaches to online technology use upholds Indigenous ways of knowing and being. Through a Two-Eyed Seeing worldview, we can see technology as not being inherently Western, but rather as a way to communicate that any community, culture, or society can benefit from depending on how it is used.

Despite online technologies being created out of Euro-Western society, Indigenous artists, journalists, activists, and storytellers are using technology in innovative ways to take charge of their culture and express their voices despite colonial influences on the Internet (Carlson & Dreher, 2018). In fact, the Internet and social media have become important elements in maintaining Indigenous identity through sharing of land-based food stories and photos online (Hicks & White, 2000). In Canada's North, for example, culture and technology could be said to mutually adapt and fortify each other in the shifting circumstances of the Arctic (Hicks & White, 2000). In Castleton's (2018) study for instance, he found that Inuit students illustrated the importance of Facebook groups in their daily lives, as one of them said, "[through Facebook] I learn more about old ways and how things were done before." The young participants of this study referred to a Facebook group

called “Inuit Hunting Stories of the Day.” This type of group, which shares stories about hunting and Indigenous foodways, was acknowledged by the participants as a good way to present Inuit culture, to know their own identity, and to learn Indigenous techniques and knowledge for hunting and survival (Castleton, 2018). By sharing land-based food stories online, Indigenous children and communities are utilizing online technologies in ways that suit their identity, culture, and interactions with the wider world. Thus, online technologies could be (and are already) a part of Indigenous culture and pedagogy in ways that support and uphold Indigenous knowledges and values (Carlson et al., 2021; Castleton, 2018).

Summary

Indigenous ways of knowing are intricately connected to the health of Indigenous communities. Food may be positioned as a way to learn about and understand Indigenous cultures, as food is a product of the land in which we live and make meaning from. Through Indigenous food sovereignty we can appreciate the intricate connection between human health and the health of the land and its foods. Indigenous food sovereignty places an emphasis on the land, cultural traditions, Indigenous foodways, and knowledge sharing as a way for Indigenous communities to support their health and cultural identities.

Colonization and environmental dispossession are fundamental causes to the health inequities that Indigenous people’s experience. Children’s formation of cultural identity was explored, highlighting the impacts that colonization and environmental dispossession can have on Indigenous children’s health throughout their lifetime if one’s culture is assimilated beyond recognition. Yet, strength-based perspectives involving Indigenous food sovereignty were implemented to re-frame this story to one which highlights Indigenous cultures and worldviews as an effective way to address the issues caused by colonization. Land-based education is promoted as an effective way to engage and

(re)connect children in their cultural and community held knowledges and ways of being, and online technologies can potentially support children in accessing, celebrating, sharing, and maintaining this knowledge if used in a way that upholds Indigenous worldviews.

Chapter III: Worldview

Two-Eyed Seeing has underpinned this research and guided me as a researcher. Within this chapter I introduce Two-Eyed Seeing, explore it as my worldview and discuss my positionality as the researcher of this study. I expand on Indigenous knowledge systems that have historically been silenced within Western science and consider how Western and Indigenous worldviews might weave together in research.

Etuaptmunk - Two-Eyed Seeing

Two-Eyed Seeing enables us to acknowledge the entirety of Indigenous knowledge systems alongside Western knowledges and worldviews so that we can continuously “weave back and forth” between knowledges to create meaningful and respectful research and community-based programs (Bartlett et al., 2012; Institute for Integrative Science & Health, nd). Two-Eyed Seeing is meant to bring together Indigenous knowledge and Western, scientific knowledge to address major environmental, health and social issues that our society is experiencing (Hovey et al., 2017; Knapp, 2013; Marshall, Marshall & Bartlett, 2015; Martin, 2012). Elder Albert Marshall and Dr. Cheryl Bartlett believe that understanding and practicing Two-Eyed Seeing is meant to be a co-learning journey in which you continually learn from and with all your relations, and then use these multiple perspectives to understand and see linkages among issues we face with and within nature (Integrative Science, 2019).

Given the historically challenging relationship between Western and Indigenous ways of knowing, there is a growing need to identify ways of bringing diverse perspectives together to create meaningful relationships that will support collaboration, understanding and positive change in the world. Two-Eyed Seeing aims to achieve this by recognizing Indigenous and Western knowledge systems as whole and distinct in and of themselves,

while simultaneously acknowledging that each knowledge system offers only a partial understanding of the world (Roher et al, 2021). That is, Two-Eyed Seeing assumes that even though Indigenous and Western knowledge systems are whole in and of themselves, no single worldview can encompass all understanding of the world. Thus, individuals can benefit from bringing together various knowledges and ways of knowing in order to arrive at a potentially more wide-ranging worldview, although still partial and restricted within the confines of the human senses (Roher et al, 2021).

After years of attempting to explain Two-Eyed Seeing to various audiences, Albert has also said:

Two-Eyed Seeing is hard to convey to academics as it does not fit into any particular subject area or discipline. Rather, it is about life: what you do, what kind of responsibilities you have, how you should live while on Earth ... i.e., a guiding principle that covers all aspects of our lives: social, economic, environmental, etc. The advantage of Two-Eyed Seeing is that you are always fine tuning your mind into different places at once, you are always looking for another perspective and better way of doing things (Integrative Science, 2019).

A valuable aspect of Two-Eyed Seeing is considering other perspectives through a co-learning journey. Bartlett, Marshall, and Marshall (2012) have explained that the co-learning journey required within Two-Eyed Seeing is key for successfully weaving between Indigenous and Western ways of knowing. Co-learning can involve learning with others with the intent to understand diverse perspectives, learning to develop language so that we all understand how we are using words, respecting one another, and recognizing that one worldview cannot encompass all knowledge, etc. Bartlett, Marshall, and Marshall

(2012) further state that when we cannot acknowledge the benefit of engaging in meaningful co-learning, that we need each other for learning to occur, then an attempt to weave between Indigenous and Western knowledges and ways of knowing is destined to evolve into mere show, not getting at the intent of Two-Eyed Seeing.

Iwama et al., (2009) indicates that as we learn together, the co-learning journey involved in Two-Eyed Seeing offers the sacred gift of humility. Humility in this context could occur when we recognize where our individual worldviews are limited and see the strength in another's. For this reason, turning inward and looking within is also an important component of being on a co-learning journey. Learning is enhanced when we can reflect on our beliefs, experiences, and on what we have learned (Kolb, 1984; Miettinen, 2000). Additionally, connecting to self, others, and with nature might support us in expanding our meaning from our experiences and in understanding Indigenous knowledge systems. This can also assist us in developing and sharing our stories with our families, friends, and communities that contributes to collective knowledge. Thus, a key aspect of Two-Eyed Seeing in research is for the researcher to learn with others, and to reflect upon their own biases and assumptions so that they can begin to open their eyes and their heart to other ways of seeing the world. This is especially important within the context of this study, as Two-Eyed Seeing offers an opportunity for me to learn about and reconsider issues that have disproportionately impacted Indigenous populations, such as those relating to food and land, as there has been an over-emphasis of the 'Western eye' when attempting to produce solutions relating to these issues.

Two-Eyed Seeing as Worldview

Elder Albert Marshall and Dr. Cheryl Bartlett argue that Two-Eyed Seeing is perhaps best represented through worldview, which encompasses one's personal view of the world and beliefs about reality (Marshall & Bartlett, 2018; Roher et al, 2021). This is because Two-Eyed Seeing is a way of knowing, being, doing, and seeing (Marshall & Bartlett, 2018). It is not solely ontology, which is the theory of reality, or epistemology, which is the theory of how we come to know something and reflects our assumptions about what we constitute as acceptable knowledge, or methodology, which is the theory of how knowledge is obtained (Wilson, 2008; Tennis, 2008). Rather, Two-Eyed Seeing exists at all of these levels of theory, and all of these theories together impact how we conduct research and comprises an individual's worldview (Marshall & Bartlett, 2008). Two-Eyed Seeing is my worldview guiding this study and in this section I discuss how I have tried to understand and embody its teachings throughout this research.

Two-Eyed Seeing as a worldview recognizes the complexity that exists in the world; that across cultures and regions, there are different thoughts, beliefs, laws, and ways of relating to the land and environment around us. Two-Eyed Seeing recognizes Western theory of knowledge and science, *and* the spiritually complex and interrelated nature of Indigenous knowledges and science. Two-Eyed Seeing as worldview, however, also recognizes the harm that can occur when one belief system is privileged and considers another worldview as less robust. By only considering one worldview that reinforces a long-held belief system, we set ourselves up for bias where we cannot, or will not, consider the worldview of another.

Through privileging Western ideologies and conceptualizations of health, consideration of other cultural conceptualizations of health have historically been

undermined. This has narrowed Western understanding on how scientific health research and medicine can remedy societal health problems. There are multiple worldviews that make up the world in which we live, yet Western systems have prioritized and been dominated by colonial worldviews and imagery. This means that many health inequities that individuals, communities, and populations experience in Canada today are a result of the values, beliefs and ideologies of those who had and continue to have power within this system (Riley, 2020). Rather than dismissing the current system entirely, we can work within the system to equalize imbalances in power. By learning about and considering different worldviews, for instance, we can potentially re-imagine and re-work existing societal systems where we intrinsically relate to each other and Mother Earth in ways that support health, rather than impede it.

There is potential in filling the gaps in education and health policy through integrating differing cultural perspectives that reframe approaches for solving social problems caused by a colonial frame of mind. Meaning, what is most useful from one perspective is used when it is needed, and together we can weave back and forth as needed between perspectives to address issues rather than relying on a single perspective for all answers. We can see this singular approach clearly when we explore Western concepts of health, where Martin (2012) states that “how health is understood within our academic and health-care institutions is predominantly shaped by conventional scientific approaches, but there are other, equally valuable ways to understand health” (p.21). Indigenous cultures conceptualize health differently and holistically, and there is great opportunity in exploring how Indigenous knowledges can be considered together with Western knowledges to support health through Two-Eyed Seeing.

Understanding how Two-Eyed Seeing has been conceptualized in health research is important in understanding how Indigenous knowledges and ways of knowing are being considered and integrated alongside Western approaches. In order to understand how Two-Eyed Seeing has been conceptualized in Indigenous health research, Roher, Zu, Martin, and Benoit's (2021) scoping review explores how it has been characterized across eighty articles. They compare how the original authors of Two-Eyed Seeing (Bartlett, Marshall and Marshall) characterize it as compared to other authors who are employing it in their research. They found that the original authors emphasized two aspects of Two-Eyed Seeing more often and in greater detail than new authors. The first aspect they identified as Spirit:

The original authors write that "spirit is at the heart of Indigenous knowledge" (Bartlett et al., 2015) and that Two-Eyed Seeing "teaches you to awaken the spirit within you" (Hatcher et al., 2009a). According to Elder Albert Marshall, Two-Eyed Seeing encourages individuals to become a student of life, observant of the natural world. Two-Eyed Seeing teaches that everything is physical and spiritual (Hatcher et al, 2009b). Despite the emphasis on spirit and the natural world, very few new authors discussed the importance of these elements. Most who did, quoted the original authors directly (Roher et al., 2021. pp.11).

The second aspect that the original authors emphasized more often and in greater detail than new authors was humans being part of ecosystems, where Roher and colleagues (2021) write:

The original authors underscored Two-Eyed Seeing's relevance to the natural environment (Marshall, 2018) and the importance of human and non-human knowledge systems to Two-Eyed Seeing (Bartlett et al, 2012; Marshall, 2018;

Bartlett et al, 2015). However, the new authors do not as commonly discuss this category. Two-Eyed Seeing came into the academic world from the disciplines of biology, environmental sciences, and ecology. The unfamiliarity with these subjects and the general lack of education in spiritual knowledge for health researchers and academics might partially explain why it is hard for authors in the health world to make the jump to discussing spiritual and natural components to life.

While few new authors write about Two-Eyed Seeing's connection to the natural world, those who have done so acknowledge deep connections between ecology and the environment with the importance of diverse knowledges and ways of knowing. For instance, some new authors write that Two-Eyed Seeing draws attention to relational aspects of complicated issues (Auger, 2016; Hovey et al, 2017), reinforces the interconnectedness of both worldviews (Butler, Berry, & Exner-Pirot, 2018; Hinds, 2014), and supports a process of working together just as all parts of ecosystems must work together (Health-Engel, 2016), (p.11).

This scoping review provides insight about Two-Eyed Seeing, as well as where future academic research is required to strengthen the discussion surrounding Two-Eyed Seeing in practice and how it might benefit health research. These two components, spirit and humans as part of ecosystems, are prioritized within this study as more attempt at reflection and discussion surrounding Indigenous knowledges and culture would benefit the health promotion professions' understanding of it (Huff, Kline, & Peterson, 2015).

This particular research explores the land as a necessary component of teaching Indigenous knowledges, for experiential learning about Indigenous foodways and the skills

to be gained while on the land, and the stories and relationships gained through these experiences. I have learned that land-based experiences are informed by the stories that are told while on the land whether between human-to-human relationships, between human and animal, human and plant, human and land, water, air and ice, and between human and spirit. Often, it is the re-telling of stories of generations past that have helped protect Indigenous foodways and guide communities in how to survive and be in a balanced relationship with their environment. Recognizing humans as part of ecosystem is a fundamental aspect to Indigenous food sovereignty discussion, and likewise to Two-Eyed Seeing, as the land, its foods, and human relationship to it is inseparable from Indigenous knowledge systems and spirituality.

Acknowledging that we are naturally a part of the ecosystem requires that we also recognize and accept that in Western society, we have removed ourselves from our environment in many ways, along with the relationships and knowledge that exists there. This shift in the way we live has impacted us mentally, emotionally, spiritually, and physically. The health inequities that exist due to our constructed environments and societal systems being unable to adequately support and meet the health needs of all people is not news to anyone who studies health promotion. The reason behind why human and environmental health is suffering, however, is complex and multifaceted and is not easily understandable by a siloed or narrowed scientific approach to research or profession.

Two-Eyed Seeing, however, might encourage us to step away from Western systems for a moment, and consider how nature interrelates and exists outside of our constructed environments and modern society. Remembering and re-connecting to our ecological roots, Indigenous or not, is fundamental to practicing Two-Eyed Seeing.

Forming a connection with nature and learning about how Indigenous Peoples were historically and presently in spiritual relationship with the land through intergenerational storytelling could remind us all as human beings that we live in and are reliant on nature and need fresh air, water, good food, movement, and nurturance to be healthy.

Weaving Together Knowledges, Spiritually

Two-Eyed Seeing is a way of coming to understand knowledge and considers how we view reality, but also further influences how we relate to others and conduct research in practice. When considering Indigenous worldviews, spirituality is integral to understanding how health is envisioned and achieved in the physical world. The concept of Netukulimk, for instance, is how Mi'kmaq peoples ensure health for all their relations and will be explained to demonstrate the relationship between spirituality and health. Netukulimk is an essential concept for Mi'kmaq peoples as it guides how a person should live their life on earth, where Spirit guides one's heart, mind and actions (Prosper et al., 2011). Thus, Netukulimk affects the physical, emotional, mental, social and spiritual relationships a person has with everything, including the physical features of the land, and the rhythms, cycles, and patterns that exist within Mother Earth and all Her living and nonliving beings (Prosper et al., 2011). In this way, an individuals' connection with Spirit enables the practice of Netukulimk, which begins when a person learns to weave respect, responsibility, relationship, and reciprocity into every aspect of their life (Prosper et al, 2011).

Understanding Spirituality. Spirituality is increasingly being studied in Western science. Defining spirituality, however, can be a tenuous task; it means different things to different people, and there is often confusion between “spirituality” and “religion” (Tisdell,

2008). Tisdell (2008), who has dedicated her career to researching the interconnections between spirituality and adult education, defines spirituality as consisting of four aspects: 1. Spirituality is different from religion, 2. Focuses on individuals' meaning-making processes, 3. Contributes to personal values and social action, and 4. Relates to symbolic and unconscious knowledge construction processes. Further, Tisdell's (2003) study exploring spirituality among 31 educators who work in higher education settings, who have a range of racial backgrounds, were interviewed about how they understand spirituality and how it influences their approaches to education. Through this study, Tisdell (2003) found that one of seven participant assumptions about the nature of spirituality was that "[it] is about an awareness and honoring of wholeness and the interconnectedness of all things through the mystery of what many interviewed referred to as the Life-force, God, higher power, higher-self, cosmic energy, Buddha nature, Great Spirit, or Creator," (p. 28). Tisdell (2003) discusses the value of both cultural diversity and spirituality and utilizing one to understand the other. She states that for many cultures, spirituality is integral to understanding the world and an individual's place in it. Thus, culture and spirituality are interconnected and not easily separated.

Specific to Indigenous spirituality, Blaire Stonechild and Noel Starblanket (2016) in their book *The Knowledge Seeker: Embracing Indigenous Spirituality*, write about the importance of integrating spirituality into Indigenous education, as it is this understanding and belief system which has historically informed all relations for Indigenous Peoples. They write one of the major features of Indigenous spirituality is belief in the spirit world and that consciousness resides there. Further, it is believed there is some sort of spiritual force behind all things, and that much of Indigenous philosophy and spirituality was

centred on a singular goal: to discover and cultivate relationships with the spirit world. Primary practices for discovering these relationships were through meditation, prayer, dreams, and visions which we can also recognize as important spiritual practices that are present across many other cultures. A strength of Indigenous cultures and knowledge systems is the consideration of the spiritual nature of life; how we all connect and relate to each other and the world around us, how Spirit influences our daily lives, and exploration of the personal meanings and learnings we make from our life experiences.

Even Western scientific studies increasingly show, through the lens of bio-medical health, that engaging in spiritual practices over a period of time drastically changes not only our mental and emotional health, but also our physiology for the better (Jim et al., 2015; Rippentrop et al., 2005; Russo, 2019). Interestingly, in a meta-analysis looking at spirituality and the connection between patient-reported physical health in cancer patients, it was found that patients who engage in a spiritual practice alongside their treatment experienced better physical health (Jim et al., 2015). This finding suggests the need for timely and culturally protective incorporation of spiritual support when receiving medical treatment.

Moving Forward with Two-Eyed Seeing. Colonial thought was and still is embedded within my thought processes in ways unknown to me. When I consciously take the time to learn and become aware of a colonial thought or a belief I have carried with me, or any other belief system that misaligns with health, I can become curious about it, reflect on it and question its validity through exploring differing stories and perspectives. For example, spirituality was always a word that I glazed over when reading the sentence “physical, mental, emotional and spiritual health.” I glazed over it because I did not

understand it. It seemed too complicated a word to delve into, I was fearful of what I would discover because I knew it would challenge me. I justified this reaction due to Western science's disregard for that which cannot be scientifically proven. What I have realized, however, is that by skimming over the word I was in turn skimming over a part of myself. I did not want to acknowledge this part of myself, but once I did, the parts of the world that I did not understand started to become clearer because I had found the language to explain it. I slowly learned how to view myself, health and the world in a more holistic, interrelated and nuanced way.

Currently, I see spirituality and Indigenous knowledge systems as being extremely important in paving the way towards social and environmental justice. I believe that, even unconsciously, we are all spiritual beings; we all relate to and make meaning of the world and environment around us in some way. We all live storied lives and are all connected to each living being and species on planet Earth, including material objects and spiritual ideologies. And yet, we are all unique individuals on our own life trajectory influenced by a multitude of social and political factors shaped by human history. And further, how we have all individually integrated our life experiences to influence our sense of identity and worldview. Being consciously aware of our spiritual nature can impact how we interact with not only ourselves, but all of our relations. How we view each other and construct our reality impacts the societal systems we create to organize ourselves, just as Indigenous cultures have done through ingraining spiritual ways of knowing and associated medicinal practices into the fabrics of their societies.

True reconciliation requires the consideration of Indigenous knowledge systems as being equally valid and prioritized within our society. Being raised in a culture where many

of us have predominantly been taught to see primarily with our eyes and not with our hearts, the spiritual nature of coming to understand and employ Two-Eyed Seeing can be an affronting and confusing one. By engaging in spiritual co-learning journey with self, Mother Nature, and all our relations alongside the knowledge available through Western Science, we can support not only our own wholistic health, but also the health of our communities. As when we go on the spiritual path, every step we take is influenced by how we want to physically show up and relate to the world around us. In this way, I see embracing Indigenous knowledge systems and ideas of spirituality as deeply related to engaging in Two-Eyed Seeing, reconciliation, Indigenous food sovereignty, and developing a relationship with the land, its foods, and teachings they have to offer.

Researcher Reflexivity

Absolon and Willett (2005) underline how identifying at the outset the location from which the voice of the researcher emanates is an Indigenous way of ensuring that those who study, write and participate in knowledge creation are accountable for their own positionality. It is important to consider what has influenced my worldview as the researcher. Within this section I provide a description of my background and positionality in this research, along with how Two-Eyed Seeing has impacted my worldview.

As a Registered Dietitian studying health promotion and Indigenous conceptualizations of health within this research, I have developed a wholistic view of food and value its role in all aspects of health; physically, mentally, emotionally, spiritually and environmentally. And through this wholistic view, I consider food to be more than just nutrients and a source of fuel for our bodies. Rather, I see food as a cultural anchor and a way for communities to come together, share stories and make meaning from life and this

was emphasised throughout my dietetic training. During my undergraduate degree in nutrition and dietetics, I quickly realized the complexities surrounding food and how social issues surrounding food and the land can impact all aspects of health. I am specifically interested in the issues surrounding access to food, as one cannot discuss the importance of eating well when entire communities cannot access nutritious, culturally relevant foods due to socially constructed barriers as a result of colonization, capitalism and racism (Gnanapragasam, 2020; Loppie Reading & Wein, 2009). For this reason, I am interested in learning about Mi'kmaq children's, Knowledge Keepers, and Elders relationships with food and their perspectives on Indigenous food sovereignty as a way to address health inequities caused by colonization, capitalism and racism.

As the researcher, it is also important to consider my background. On my Mother's side I have British ancestry and I was raised in my Mother's home community, Kennetcook. On my Father's side, I am less certain of his ancestry, although I know that he has French Acadian heritage on his Father's side. While I can not confidently say that my father has any Mi'kmaw heritage, he was partially raised and grew up in Eel River Bar as a child, a Mi'kmaw First Nation community in northern New Brunswick. The stories of his childhood revolve around his time there. I consider myself to be of settler heritage, and yet I am proud of and grateful for the knowledge and perspectives that my Father has shared with me about the land and its food that he learned while growing up.

I have come to deeply relate to Indigenous teachings surrounding health and wellness. Growing up, my family always instilled the importance of connecting to the land, and as a child, my father would take my brother and me into the woods surrounding our rural home and he would share his knowledge with us about how to care for the land and

how to harvest food in ways that did not harm the environment. I now understand and fully appreciate what a gift this was. These experiences as a child have allowed me to see the connection between land and food, and how the health of the land inherently relates to our own health too. My interest in food, social and environmental justice and Indigenous conceptualizations of health has led me to want to learn more about Indigenous knowledge systems surrounding how food can be a means to revive and celebrate Indigenous cultures and maintain environmental health.

I keenly recognize that I am not part of the communities I am working with, and throughout this research experience and co-learning journey I have tried my best to support the Land2Lab team, the Confederacy of Mainland Mi'kmaq, and the communities we are serving in upholding Mi'kmaw culture and knowledges. My positionality as a researcher not from the communities I am working with, although with connections to Mi'kmaw culture through my father, did impact my ability to confidently interact with, as will be discussed further in the quality and rigour section in Chapter 4. Yet, my own perceived challenges of not being a part of the communities I am serving, of interacting with and engaging children participants, and learning about how to conduct myself as a researcher have taught me important lessons. I feel more confident to engage in research in the future due to my experiences and subsequent learnings.

My studies have allowed me to begin learning about Indigenous knowledge systems that have historically been overlooked by Western society. Through Two-Eyed Seeing I have been able to view Indigenous knowledge systems as valid and rich ways of looking at the world and our relationship to it. This learning process has been challenging at times. Yet, I would consider myself an avid Internet user which helped me access and

form a good understanding of concepts such as spirituality, meditation, wholistic health approaches and psychological consciousness theories that I was not introduced to in my nutrition education prior to beginning this master's program. I researched these topics online because I knew I was missing an important piece to the puzzle to achieving wellness that was not shared with me in my formal education. Thus, prior to starting graduate school I had some tools to be able to go inward and through my studies, learned to critically reflect on what I was learning about Two-Eyed Seeing and Indigenous spiritual knowledge systems and how this knowledge would impact my worldview.

These past two years I have taken a personal undertaking to bring balance to my inner self so that I can help bring balance to the world around me. I appreciate that Two-Eyed Seeing is a guide in coming to better understand yourself, others, and the world around you through learning together and considering multiple perspectives and stories. Through my studies, though, I had for the first time recognized my own colonization and I searched for ways to view and think about the world in different ways. I started to recognize that I have been benefiting from systems that privilege groups of people and noticed limitations in my thinking as a result of being a part of Western culture. The realization that my own worldview was part of and helping perpetuate colonization allowed me to begin consciously replacing old beliefs with other perspectives, thoughts and emotions that were better aligned with who I was and who I wanted to become. While at times difficult and fearful, there is great freedom in learning how to rid yourself of constricting belief systems that have been handed down to you so that you can learn to think in your own way, write in your own way and do research in your own way. I see this as being the nature of Indigenous research - to challenge the way it has been done before and carve your own

path forward towards learning about yourself and all of your relations. Learning from and with the collective, however, is an important notion of Two-Eyed Seeing, as knowledge is not an isolated, individual pursuit. It is an individuals' responsibility to find balance in the cycle of inward reflection and outward learning.

Two-Eyed Seeing encourages us to prioritize exploring how two or more knowledge systems and ways of knowing can come together, rather than comparing and finding differences between them. I have learned that to only compare and contrast a worldview or method over another is largely a Western scientific approach that does not always encourage collaboration or recognize the nuance of human life. In this research, Two-Eyed Seeing has allowed me to reflect on and consider how Western and Indigenous approaches in project implementation and in research are both valuable and provide greater insight when they come together to support each other. It has also allowed me to notice when I am only considering the Western view that I have grown up surrounded by and encourages me to open my mind to other possibilities and ways of approaching research and writing. Two-Eyed Seeing empowers us to look at the good in both or many perspectives. In this teaching, I realized that what we focus our attention on is important; when we look for how things can fit together rather than how one approach is better than the other, a world of possibilities arises.

I have learned through my own reflections that Two-Eyed Seeing, when coming from a Western educational background, requires the development of an introspective and mindful reflection practice on how one's biases influence their worldviews, and how thought patterns can expand through the learning of and integration of new language and knowledge. Co-learning requires us to acknowledge that Western knowledge systems do

not have all the answers, and that we will always have something to learn from those who have different perspectives from us. Through Two-Eyed Seeing, we can challenge the ego that Western colonial science and culture has permitted us to uphold. Although this can be an uncomfortable co-learning journey, it is ultimately one that we are on together and is potentially made easier by becoming curious about others and our own inner worlds in a compassionate way so that we can learn and make sense of varying perspectives and worldviews.

Summary

Two-Eyed Seeing requires the consideration of spiritual Indigenous knowledge systems and sciences alongside Western sciences and knowledge. This is challenging perhaps for those who have primarily considered Western views in the past, as there is no prescriptive scientific method for being ‘spiritual.’ Rather, it is a personal reflection and learning journey that one will always be on, and its path is reliant on you, your internal state and how you choose to relate to yourself and the world around you.

Two-Eyed Seeing is a guide for learning and making meaning from life by emphasising the importance of the land and the relations and knowledges that exist there. It supports us in navigating multiple perspectives in order to bring them into balance, which I see as an important aspect to achieving health. A valuable aspect of Two-Eyed Seeing, and bringing it into your being, is to acknowledge the learnings others have to offer and that we will always have something to learn from each other, whether it be human, animal, plant, land, air, fire, water, or spirit. Being on a co-learning journey with all whom we work with and relate to is what Two-Eyed Seeing offers to the research community. It is a relational way of doing research that challenges us to expand our understandings of ourselves, others and our research experiences.

The following research is guided by Two-Eyed Seeing as my worldview, encompassing my ontological, epistemological, and methodological perspectives. Throughout this research experience I have considered its meaning and how it can be applied to community-based research in a multitude of ways; bringing together of land-based and online learning, Western and Indigenous food knowledges, a group interview and storytelling as methods of gathering perspectives from children, and deeper in terms of how spirituality and Indigenous knowledge can strengthen health and conventional scientific health research approaches and impact.

Chapter IV: Research Methodology and Study Design

The purpose of this study was to explore how land-based learning and online technologies can come together to engage Mi'kmaq children in practices and principles of Indigenous food sovereignty during the Land2Lab Project. A qualitative approach was used for this exploration. Qualitative methodologies are increasing in popularity among health science research, as social problems that affect health lend themselves toward thoughtful exploration, especially when issues of interest are complex and have concepts that are not easily measured or involve populations who have been silenced (Creswell, 2013). Thus, qualitative studies are appropriate when the goal of research is to explore the perception of a person's experience in a given situation (Stake, 2010). Indigenous food sovereignty is a concept that attempts to address social issues that have impacted Indigenous Peoples access to and self-determination of the land and its foods. Additionally, this study explores children's perspectives and the stories shared by a Knowledge Keeper, which are supplemented by my own field notes of intergenerational land-based experiences that occurred throughout this study. In this chapter I discuss decolonial theory, along with the Land2Lab Project design and the methods employed within this study. At the end of the chapter I discuss the quality and rigour, ethical considerations, and knowledge dissemination approaches associated with this study.

Decolonial theory

Decolonial theory and Etuaptmumk-Two-Eyed Seeing, explored in the previous chapter, both guided this qualitative study. Within this section I provide a brief description of Canada's colonial history and settlement in order to situate the term decolonization and decolonial theory and how it guides this research. I then discuss decolonial theory and what it offers Indigenous community-based research within the context of Indigenous food

sovereignty. I also refer to Two-Eyed Seeing in this chapter and discuss how it relates to decolonial theory.

Canada's Colonial History

Indigenous Peoples have relied on their ways of knowing to support their communities in creating a balanced life and environment (Battiste & Henderson, 2000). Prior to European settlement, the Mi'kmaq had developed a culture founded upon three principles: the importance of living life in relation to Spirit, respect for Mother Earth, and the notion of people and community power (Paul, 2000). The arrival of British and French colonies on Mi'kmaw land and territory over 500 years ago, however, upset this balance with colonial assumptions of superiority towards Indigenous Peoples, which resulted in cultural assimilation, genocide and systemic colonialism that is still experienced today (Czyzewski, 2011).

In his book *We Were Not the Savages*, Daniel Paul (2000) provides a thorough account of European settlement in Mi'kma'ki from a Mi'kmaq lens. He writes that he cannot help but wonder what kind of society we would be living in today if the British, and other European settlers, had set aside their notions of racial superiority and, instead of trying to assimilate, learned from the Mi'kmaq. He imagines that such a society would probably be one in which racial discrimination and environmental dispossession had long ago disappeared. Yet, European exploration began in 1497 when John Cabot laid claim on behalf of England's King Henry VII to what would be called Newfoundland. Cabot noticed the regions rich fishing grounds and the wealth that could be gained there (Paul, 2000). As European fisheries expanded in Newfoundland, in 1504, the French made first contact with Nova Scotia; the invasion to extract resources in Mi'kma'ki had begun (Paul, 2000).

One hundred years later, in 1607, the British Monarchy developed a mutual relationship with the Hudson Bay Company [HBC] to support colonization and trade in Canada, which would become a powerful fur trading company along the Hudson Bay River in Quebec and would eventually trade around the world (Perry, 2015). It is important to note that Mi'kmaw communities had their own economies within Mi'kma'ki, and traded produce, pelts, fish, meats, salts, etc., across the Americas, linked together by need and reciprocity (Paul, 2000). The introduction of the European trading system centered around money, however, and would fundamentally change how sharing, trading and relating to the land would take place within Mi'kma'ki and across Canada (Paul, 2000). Overtime, the fur trade business supported by colonial European Monarchies overextended itself, upsetting the interconnected balance that naturally exists within ecosystems by over trapping, where the colonial and capitalist desire for money, land, resources and power outweighed the notion of living in balance with nature in order to sustain health (Paul, 2000).

Decolonizing Canada's Future

Although definitions of how decolonization gets enacted within communities differ, there are key features that characterize it. These include it being an empowering approach to restore Indigenous knowledges and ways of knowing through self-determination (Alfred, 2005; Smith, 1999), cultural preservation (Lane, Bopp, Bopp & Norris, 2002), and respect for a wholistic worldview (McKenzie & Morrissette, 2003). Decolonization is not just the restructuring of government systems to reconcile the harm caused by past and current federal government policies designed for assimilation, but also the celebration of Indigenous cultures and the reclamation of traditions and knowledges within and beyond Indigenous communities.

Tuck and Yang (2012) discuss the tensions surrounding the use of the word decolonization in academia and in human rights-based discourse. They state that decolonization is used far too often by scholars as a metaphor for social justice (Tuck & Yang, 2012). Using decolonization as a casual term for social justice does not recognize Indigenous Peoples' struggles for the recognition of their sovereignty, or the contributions of Indigenous intellectuals and activists towards developing theories and frameworks of decolonization. Tuck and Yang (2012) conclude by stating that “decolonization offers a different perspective to human and civil rights-based approaches to justice, an unsettling one, rather than a complementary one” (pg. 36). It is important, therefore, that when using the term decolonization, one understands that decolonization was not intended for settlers but rather for Indigenous Peoples cultural resurgence.

Lakota scholar Waziyatawin Angela Wilson (2004) provides a conceptualization of the process of decolonization which entails developing a critical consciousness about the causes of oppression, the distortion of Indigenous history, and the degrees to which Indigenous and non-Indigenous Peoples have internalized colonialist ideas and practices. Within this conceptualization, the process of decolonization is about Indigenous empowerment and a belief that situations can be transformed by trusting in one's own peoples' values and abilities, and a willingness to make change (Wilson, 2004). This also underpins Indigenous food sovereignty, meaning that through Indigenous food sovereignty the process of decolonization can occur.

Decolonizing Research. Building from this description of decolonization, decolonial theory aims to reposition research to reflect the unique knowledges, beliefs and values of Indigenous communities. Although significant strides have been made to resist

colonialist assumptions in academia, most research in social sciences continues to be structured by the limits of Western ontologies that delegitimize Indigenous ways of being and knowing (Hunt 2013; Smith, 1999). This means that Indigenous Peoples are often studied through a lens that makes them perceptible or legible to scholars who are thinking about the world exclusively through Western ways of knowing.

Decolonial theory questions how research contributes to the continued oppression and colonization of Indigenous Peoples (Smith, 1999). Through decolonial theory and Two-Eyed Seeing, we can challenge the colonial narrative and awaken to the importance of Indigenous knowledges for the health and well-being of all people and Mother Earth. Both Two-Eyed Seeing and decolonial theory seek to restore balance in narrative and worldview by considering Indigenous knowledges as equally valid as Western knowledges (Marshall, Marshall & Bartlett, 2015; Smith, 1999). This research positions Mi'kmaw knowledge systems and worldviews about the land and food as central to participating in Indigenous food sovereignty, achieving wholistic health, and necessary for shifting the narrative about Indigenous Peoples' health in research.

Decolonial theory supports Indigenous food sovereignty as both concepts acknowledge that self-determination, celebrating Indigenous knowledges, and (re)connecting to the land and culture as integral for the continued decolonization and healing efforts among Indigenous communities. Decolonial theory recognizes the importance of Indigenous knowledges, as knowledge is fundamental to understanding, interpreting, and establishing values within a society. Control over knowledge production is an integral component of cultural survival and therefore, decolonization. Decolonial theory, in the context of this study, frames the exploration of youths' and Knowledge

Keepers perspectives as a way to understand and interpret their perspectives surrounding Indigenous foodways and engagement in community held knowledges. The Land2Lab Project and associated study design was created to uphold Mi'kmaw knowledges, as will be outlined in the following section.

Study Design

Within this section I describe how this study is situated within the Land2Lab Project. I outline the Land2Lab Project design, provide context of how COVID-19 impacted the Land2Lab Project design and thus, the study methods. Contextualizing the study is particularly valuable as it provides insight about how the land-based and online methods that were employed were successful or not in engaging children in Indigenous food sovereignty and their foodways. For this reason, I am using field notes that I wrote while working with the Land2Lab Project to help illustrate child engagement in Indigenous food sovereignty. I then discuss the study participants and how they were recruited, describe the study setting, the methods used to collect participant data, and how the data was analysed using narrative inquiry.

Land2Lab Project Design

Ensuring that Mi'kmaq children experience cultural teachings about how to respectfully interact with the land, sea, water, air and ice is crucial in ensuring that the health of future generations is protected. Therefore, in 2019, community leaders from the Paqtnkek Mi'kmaw Nation and St Francis Xavier University [StFX] developed an intergenerational land-based learning pilot program called the Land2Lab Project. As mentioned in the Introduction, Kara, a member of Paqtnkek Mi'kmaq Nation and now an employee with the Confederacy of Mainland Mi'kmaq [CMM] initiated the Land2Lab

Project along with Dr. Ann Fox, who is an Associate Professor and Chair of the Department of Human Nutrition at StFX. Ann supervised Kara's independent study which led to the idea of developing a land-based intergenerational Indigenous foods project in Kara's community. Together, they connected with Kerry Prosper, an Elder from Paqtnkek First Nation, researcher, and Inaugural Knowledge Keeper at StFX, to help lead land-based activities and teach children. The project was funded by the Centre of Innovation and Employment at StFX. This is when I joined the Land2Lab team as a research assistant. Then, in 2021, the Land2Lab Project was successfully funded by Mitacs through their Mitacs Accelerate Grant where I worked as an intern with the CMM building on my master's research and supported the scaling up of the Land2Lab Project across the province so all Mi'kmaw communities could participate.

The Land2Lab Project was developed using a community based participatory research [CBPR] approach. CBPR aims to equitably involve all partners in the research process and recognizes the unique strengths that each partner brings (Wallerstein & Buran, 2006). CBPR should begin with a research topic that is of importance to the community and intends to improve community health and address health disparities (Wallerstein & Buran, 2006; Minkler & Wallerstein, 2003). Along with this definition, CBPR proposes a set of principles to guide research: (a) genuine partnership where academic and community partners learn from each other, (b) research efforts that include capacity building where there is a commitment to involving community members in research, (c) and sharing the findings and knowledge with the community (Wallerstein & Duran, 2006). Additionally, CBPR assumes that research can be strengthened when it benefits from community insight,

potentially improving health outcomes and reducing health disparities that are of importance to community members (Wallerstein & Buran, 2006).

The Land2Lab Project had the goal of engaging children from Paqtnkek Mi'kmaw Nation, and now all eight mainland Mi'kmaw communities, in their Mi'kmaw foodways. Prior to COVID-19, the Land2Lab Project was to consist of four half-day workshops, one for each season. During these workshops' children were to meet with Elders on the land in their communities to share stories and learn about Mi'kmaw food gathering and harvesting practices, and then return together to the community kitchen or food lab to learn about Mi'kmaw and Western perspectives on food, including food science and food safety, and prepare food according to Mi'kmaw methods and enjoy eating it together. The workshops were to focus on Mi'kmaw foods such as herbs and medicinal plants, breads, berries, and protein foods such as eel, fish, and moose meat if available. At the end of each of these workshops, sharing circles would take place where children would be asked to reflect upon and discuss their learnings of Indigenous foodways and their perspectives about land-based intergenerational learning as a way to (re)connect with Indigenous knowledges and culture. The goals of the original program were to:

1. Provide a vehicle for intergenerational knowledge sharing of Indigenous foodway practices
2. Provide children with employable food skills
3. Explore the potential for Etuaptmunk-Two-Eyed Seeing as framework for sharing both Indigenous and Western food knowledge
4. Inspire children to see themselves pursuing careers related to food and science
5. Understand how land-based learning contributes to these goals

Contextualizing the Study

There are some Land2Lab Project activities that have helped inform the research question guiding this study, including workshops and approaches taken to engage children in Indigenous food sovereignty online and on the land that I have included in my field notes. As a research assistant with the Land2Lab Project, it was difficult to separate the Project activities from this study, especially as this study is situated within the Land2Lab Project. Care is taken to clearly identify and differentiate between Land2Lab Project activities and this study. Thus, I provide a timeline of Land2Lab Project events in Table 1 and field notes in Appendix A further describe Land2Lab events mentioned within this timeline.

TABLE 2

Timeline of Land2Lab Project events that provide context for the study

Date	Land2Lab Event
September 2019	Funding received from StFX Centre for Employment Innovation
February 2020	First intergenerational land-based workshop with the Land2Lab Project: Eel fishing on the ice
March 2020 –	COVID-19 first detected in Mi’kma’ki, social distancing.
September 2020	<ul style="list-style-type: none">• First considered how land-based learning and online technology could come together to engage children
October 2020 –	Three in-person kitchen workshops in Paqtnekek Community Centre:
November 2020	<ul style="list-style-type: none">• Blueberry jam workshop• Three sisters soup workshop• Luskinikn (fry bread) workshop with Kara’s Auntie

Late-November 2020	<p>Second wave of Covid-19, halting in-person workshops:</p> <ul style="list-style-type: none"> • Turned to online technology to engage with children: Attempted online-sharing circle with children
January 2021-	<p>Successful application to Mitacs Accelerate Grant and internship</p>
April 2021	<ul style="list-style-type: none"> • Land2Lab Project partnered with the CMM • Expanded study to include all eight Mainland Mi'kmaw communities, ethics amendment
May 2021 –	<ol style="list-style-type: none"> 1. Online Food Photography Challenge activity made available to all Mainland Mi'kmaw communities through the CMM
June 2021	<ol style="list-style-type: none"> 2. Zoom call with Gail Marshall, Knowledge Keeper and a member of Paqtnkek First Nation
July 2021	<ol style="list-style-type: none"> 1. Nature walk in Paqtnkek with Gail and children involved in Connecting Math to Our Communities Camp (July 14th) 2. Data collection for study occurred: <ul style="list-style-type: none"> • Land2Lab Project and Math Camp collaboration, day-long workshop about Indigenous food sovereignty at StFX (July 24th) • Group interview with children led by me and storytelling session led by Clifford Paul

Data collection with study participants came towards the end of the day long Land2Lab Project and Math Camp collaboration that occurred on July 24th, which involved many

different activities described in the study setting. My field notes associated with these events are also considered as data.

Study Participants and Recruitment

The child and Knowledge Keeper participants involved in this study were recruited through the Connecting Math to our Communities Summer Camp for Mi'kmaq children. Through partnering with the camp, the Land2Lab Project was able to engage 14 Mi'kmaq children in a day long Land2Lab workshop at StFX, along with a Knowledge Keeper, Clifford Paul, who led a storytelling session. I initially proposed involving children in this study who are between 12-16 years of age. Due to the varying age of children involved in the Connecting Math to Our Communities Camp, however, six participants were between the ages of 6-12. Due to many of the younger participants having older siblings and friends involved in the group interview, I did not want to exclude them from participating if their parents/guardians provided consent to the camp leaders. It is also important to note that there were children, Elders and Knowledge Keepers that were involved in Land2Lab Project activities over the past year and a half that were not involved directly in this study, and I did not collect data from them.

While the study was technically open to all children across the mainland, the Connecting Math to Our Communities Camp specifically serves Paqtnkek First Nation, Pictou Landing First Nation, and Wa'koqma'q First Nation. The camp leaders were able to assist with dispersing and gathering consent forms from parents, as they had been in contact with them regularly throughout the summer. Consent forms were obtained from parents for all participants and assent was gathered from child participants during the group interview. Although consent forms for children over the age of 16 were prepared, these consent forms were not used as no children above the age of 16 were involved in this study.

All parental/guardian and children invitations to participate, and consent and assent forms can be found in Appendices F through J. The approach followed for recruitment aligns with CBPR approaches where we developed a partnership between academic and community partners where we mutually supported each other and engaged in research that involves community members in the research process (Wallerstein & Duran, 2006). Ultimately, the community support we received from the Connecting Math to Our Communities Camp, along with the Confederacy of Mainland Mi'kmaq, is what enabled recruitment for this study. This is because community support, leadership and partnership are all integral components of what facilitate community-based research (Minkler & Wallerstein, 2003)

In addition to children participants, I realized that considering Elders' and Knowledge Keepers' perspectives is important in understanding how to engage children in land-based and online learning. This became clear when Clifford Paul attended the StFX workshop to provide a storytelling session to children about Indigenous food sovereignty. It is also important to note that within the larger Land2Lab study, Elders' perspectives during sharing circles were to be included and explored. I did not initially consider the importance of Elder or Knowledge Keeper perspectives within this study, or how their presence would impact how children would share their stories. An amendment to my original ethics proposal was submitted and approved so that we could include Clifford Paul as a participant in this study and consider his story and perspectives about land-based learning and online technology as a way to engage children in Indigenous food sovereignty. I obtained oral consent from Clifford over the phone so that he could be considered as a participant within this study. Elder/Knowledge Holder Invitation to Participate and

Consent forms can be found in Appendices K and L. Thus, the participants involved in this study were 14 Mi’kmaq children and one Knowledge Keeper.

Study Setting

The setting of this study is situated within the Land2Lab Project which provided workshops in the Paqtnkek community and in Antigonish. My field notes comprise intergenerational experiences and in some cases, my interpretations of these experiences, that took place in the Paqtnkek community, Antigonish Landing, and in StFX’s Nutrition Department. You can learn more about the Land2Lab workshop activities that occurred prior to data collection in Appendix A. Data collection with participants, however, occurred during a singular day-long workshop held at StFX University hosted by the Connecting Math to Our Communities Camp and the Land2Lab Project. This workshop centered around Indigenous food sovereignty and involved many different activities that aimed to engage Mi’kmaq children. This workshop provided an ideal forum to bring children together with Knowledge Keepers and Elders and learn from each others’ land and food experiences. Table 2 presents an agenda of activities that occurred during this day-long event, followed by a description of the days events.

TABLE 3
 Agenda of Land2Lab Project and Math Camp Workshop

Activity	Location	Facilitator
Nature and Heritage	Antigonish Landing Trail	Gail Marshall and Elaine
Walk		GooGoo, Community knowledge keepers

Blueberry Jamming and Lusknikn Baking	StFX Food Lab	Land2Lab team, Math Camp leaders, and StFX Nutrition students
Honey (Pollinator) and Tea Tasting Panel	StFX Sensory Evaluation Room	Land2Lab team, Gail Marshall, Math Camp leaders, and StFX Nutrition Students
Blueberry Leaf Antioxidant Lab	StFX Science Lab	Dr. Marcia English, Food Science Professor at StFX, and nutrition students.
Researcher-led Group Interview	StFX Nutrition Auditorium	Researcher and Kara Pictou
Dinner: Moose Tacos	StFX Classroom	Brad Sullivan, Local Mi'kmaw Chef
Clifford Paul's Storytelling Session	StFX Nutrition Auditorium	Clifford Paul, Knowledge Keeper

The day-long workshop began at the Antigonish Landing with a nature walk with children. Gail Marshall, a member of Paqtnkek First Nation and Knowledge Keeper who has a wealth of knowledge surrounding medicinal plants and gardening helped us identify edible plants along the trail. We then listened to a story from Elaine GooGoo, a local Mi'kmaq woman who Dr. Lisa Lunny-Borden, the camp director, invited to talk about the history of the land and her ancestral ties to Antigonish Landing.

After the nature walk, we bussed back to the StFX nutrition labs where we held three workshops for children centered around Mi'kmaw foods. In the labs at StFX the Land2Lab Project and Math camp demonstrated the connection between math and food, where math is involved in preparing recipes, and its application can impact the taste of food, the success of a recipe, and can allow us to learn about the nutritional properties of food. We taught children how to 1. Read and prepare blueberry jam and lusknikn recipes and how to measure ingredients, 2. Taste test various teas with different amounts of honey in the sensory lab, and 3. A workshop with Dr. Marcia English, a StFX Food Scientist researching blueberry leaf antioxidants, where children got to use laboratory equipment to extract antioxidants from blueberry leaves. Following these workshops I was able to complete a group interview with 14 children in an auditorium classroom. We then had moose tacos prepared by Brad Sullivan, a local Mi'kmaw chef. Following dinner, Clifford Paul joined us at the end of the day and delivered a storytelling session about the importance of Mi'kmaw foodways and learning from Elders and community members on the land. The group interview, stories shared by Clifford, and my field notes from intergenerational Land2Lab Project experiences comprise the data associated with this study.

Narrative Inquiry Methodology

Narrative inquiry is a process of gathering information through storytelling and the analysis of story (McCormack, 2004). Connelly and Clandinin (2006) note that humans are storytelling beings who, individually and collectively, lead storied lives. Thus, the study of narrative is the study of the ways humans experience the world. In other words, people's lives are constructed through stories and narrative inquiry is a natural way to explore

people's experiences and perspectives. Field notes, interviews, focus groups, autobiographies, and orally told stories are all methods of narrative inquiry (McCormack, 2004). Within Indigenous societies, storytelling is an integral aspect of the educational process, as it is through stories that customs and values are taught and shared intergenerationally (Battiste, 2011). Storytelling is a powerful and essential component of Indigenous-based research and should be respected as a way of sharing lived experiences, exploring personal beliefs and values, and discovering place-based wisdom (Cunsolo Willox, Harper, & Edge, 2012). Further, according to Smith (1999) storytelling is a way to connect individual stories and community narratives, while prompting dialogue between and among diverse peoples and groups.

Narrative inquiry supports decolonial theory in this research. This is because storytelling can be tailored to the circumstance, where the storyteller tells the listener what they are ready or able to hear within a particular circumstance or time period and acknowledges that the stories of Indigenous Peoples have been attempted to be silenced and removed from the land. Thus, narrative inquiry in the context of decolonial theory, and Indigenous food sovereignty, offers a way to return balance through situating story on the land and in Indigenous ways of being and knowing. Additionally, narrative inquiry enables us to recognize the significance of storytelling's role in how we understand and create a vision of wholistic health.

Group interviews are a valuable Western qualitative methodological approach (Ey, 2016), and a narrative inquiry method used in this study. This method, however, does not inherently acknowledge or value Indigenous knowledges and traditions as a way of collecting data (Tachine et al., 2016). While the intent was to engage in a sharing circle

with children and Elders during the Land2Lab Project, and as a way to collect to data for this study, we were not able to connect with an Elder who was available to lead one. An important aspect of sharing circles is the ceremony that is embedded within them, and thus, Elders and Knowledge Keepers from community are recognized as being the best facilitators. Instead, I led a group interview with the children and Clifford's storytelling session helps ground this study in Indigenous storywork and Mi'kmaw cultural knowledges. Considering Indigenous storywork as a narrative inquiry strategy with Indigenous communities can provide a greater richness of information while also providing a culturally sensitive research environment.

Methods

Three narrative inquiry approaches were employed within this study for gathering data. Below I describe these three approaches, a researcher-led group interview with children framed as a Q&A, a storytelling session led by Clifford Paul, and a collection of my field notes that help inform the research question.

Group Interview. I led a group interview with children and Kara did a smudge prior to the group interview to help ground the discussion in Indigenous knowledges and ceremony. At the beginning of the group interview I let participants know that participating was optional, and they did not have to share their perspectives if they did not want to. I told them that we were interested in how they felt and thought about the workshop activities. During this group interview I asked children open-ended questions to encourage them to share their perspectives about what their favourite Indigenous foods were, what they enjoyed about the Land2Lab day-long workshop, what they did not, and what they would like to do in the future to engage in Indigenous food sovereignty. See Appendix M for

group interview questions, adapted from the sharing circle guide that would have been provided to sharing circle facilitators. The group interview discussion did not address the study question of how online technology and land-based learning can come together to support engagement in Indigenous good sovereignty as I had envisioned, namely because the Land2Lab Project was not able to engage children in an online activity.

Storytelling Session. In addition to the group interview, Clifford Paul led a 40 minute storytelling session on Indigenous food sovereignty at the end of the day-long Land2Lab workshop at StFX. During this session, Clifford shares stories about Indigenous food sovereignty and illustrates through his own experiences of how connecting to food, land, and community is the way towards leading a good life as a Mi'kmaq person. The intent of the group interview was different from the purpose of Clifford's storytelling session. The interview was to seek understanding of children's' perspectives, where Clifford's storytelling session was to share, inspire and engage children in their community held knowledges.

Field Notes. In February 2020, I started writing field notes of my experiences with the Land2Lab Project while implementing this study. My field notes include descriptions of events and in some cases, my interpretation of these events. The group interview and storytelling session are prioritized within the learnings chapter, however, as described earlier in this chapter, my field notes provide context surrounding how the Land2Lab Project was able to engage children in land-based learning and online technologies, and how the two approaches can come together to engage children in Indigenous food sovereignty. To analyze the online component of this study, my field notes regarding our efforts to create online activities with the Land2Lab Project are considered alongside

Clifford's Storytelling session and his discussions on online technology. My field notes also include my own realizations from this study that related to Indigenous food sovereignty, land-based learning, online technology, and child engagement and are grounded in Two-Eyed Seeing and decolonial theory. My field notes are written in a reflective style and were roughly 90 pages in length unedited. Only field notes that were used for analysis are included in this thesis. For instance, in the Learnings chapter field notes were chosen that relate to and supplement lessons learned from Clifford's storytelling session and the group interview. Field notes were written and those selected to be included were those that related to the intent to explore how land-based learning and online technologies can come together to support child engagement in Indigenous food sovereignty.

Data Analysis

The group interview and storytelling session were both audio-recorded and transcribed. Resulting transcripts were de-identified. Analysis of the transcripts from the group interview and storytelling session, along with my field notes, followed a narrative inquiry analysis. Narrative analysis can be undertaken in three main steps beginning with reviewing the transcripts, followed by story preparation and then story creation (McCormack, 2004). The first step of the narrative inquiry required full immersion in the transcripts to get a sense of the stories being shared by Clifford and children during his storytelling session, children's perspectives shared during the group interview, and my stories of the Land2Lab Project embedded with my field notes (O'Kane & Pamphilon, 2016). During this process, particular attention was paid to the ideas that emerged, the use of language, metaphors, imagery, and the emotional force behind how stories or viewpoints

were told (Howie, 2010; McCormack, 2004). Active listening to the recordings of the group interview and storytelling session was conducted by considering and taking notes of the dynamics within the group, the main characters in the conversation, and children's reactions. I also considered how children engaged with me during the group interview and how they engaged with Clifford during his storytelling session.

The second step in the analytical process was story preparation, where I created headings that reflect the central concepts, lessons learned, events within the identified stories from the transcripts, and my field notes that related to the research question (McCormack, 2004). In preparation for constructing each lesson learned identified in the Learnings chapter, the stories shared by participants were arranged and considered in several different ways in order to frame learnings in a way that addressed the research question and upheld the stories that participants shared.

The third step in the analysis was story creation. This involved creating an interpretive story of participants' experiences and stories they shared, alongside my field notes, and considering how the three data sets connect and weave together (McCormack, 2004). Each of the three lessons learned presented in the Learnings chapter were constructed by expanding on participants' stories as much as possible so that meaning was not lost and were supplemented by my field notes when applicable. Key elements and stories from the transcript that contribute to the objectives of this study are included.

Quality and Rigour

This qualitative study is underpinned by decolonial theory, encouraging a narrative inquiry design, as storytelling is the traditional way of sharing knowledge within many Indigenous cultures and attempts to remove the researcher from generalizing about the

participants (Smith, 1999). The storytelling session led by Clifford helped inform and ensure that analysis and discussion topics were relevant to community interests and needs. Although there are limitations, the multiple methods used provide insight about child engagement in Indigenous food sovereignty and align with Two-Eyed Seeing. I utilized a group interview, a typically Western narrative inquiry approach, and a storytelling session which aligns with Indigenous methods and cultural ways of knowledge sharing.

While it was my intention to involve children in the story creation process, there were several logistical barriers to this. Connecting with child participants was a challenge during this research, in part due to COVID-19. Due to our challenges with implementing online Land2Lab Project workshops with children, connecting virtually to engage them in the story creation process for this study did not seem viable. Additionally, I did not think that it was appropriate to connect with child participants online following the group interview as that was the first time I met many of the children involved. The age of many participants was also younger than initially proposed. Involving child participants in the narrative process, however, is important and further developing relationships with child participants would, I believe, support this in happening. Additionally, Clifford was asked if he would like to be involved in the storying process or would like to review the analysis and he declined. Care was taken to ensure that the analysis highlighted children's and Clifford's stories, and was grounded in decolonial theory, Indigenous food sovereignty, and Two-Eyed Seeing. My supervisors Dr. Ann Fox and Dr. Debbie Martin reviewed my analysis to help support me in this.

My lived experiences and reflections associated with this study, and guidance from my supervisors and committee, has greatly influenced how I have approached this research.

My positionality as the researcher, and as an individual who's exploring my own identity and understanding of Indigenous knowledge systems, decolonial theory, and Two-Eyed Seeing, has influenced how I have presented the learnings and discussions in Chapters 5 and 6. I expand on my positionality further below where I discuss how I have engaged in Fortier's (2017) five principles for guiding decolonial research.

Principles Guiding Decolonial Research

- (1) Drawing on multiple ontological realities and worldviews: Practicing Two-Eyed Seeing distinctively enabled this within this research. I have continuously reflected on what it means to consider both Indigenous and Westerns worldviews and knowledge systems, where I recognize the need to bring light to the harms of colonization, while moving forward with a positive, wholistic and encompassing narrative so we can all heal from the past. While I think I could speak to many examples of this over the past two years, Indigenous storywork and learning from Indigenous knowledge holders, scholars and allies particularly enabled me in drawing on multiple ontological realities and worldviews. This is because storytelling is the thread that passes on language, ideas, and meaning. Thus, storytelling and Two-Eyed Seeing are connected, as there are different ways to share stories within Western and Indigenous cultures, and we must consider and weave between them both.
- (2) Situating contemporary political struggles within the structures of settler colonialism and capitalism: Throughout this study I have highlighted the historical, philosophical, and sociopolitical issues that impact Indigenous communities and their ability to practice and engage in Indigenous food sovereignty and have

grounded these issues in colonization and capitalization. And yet, I recognize the power of individuals, communities, and collectives in coming together to actively dismantle these stories and systems towards a better collective reality through Two-Eyed Seeing and decolonial theory.

(3) Engaging in self reflexivity: According to Nagata (2004) self-reflexivity can be understood as “having an ongoing conversation with one’s whole self about what one is experiencing as one is experiencing it” (pp.141). To be self-reflexive is to engage in how you think and feel while being in the moment. Thus, self-reflexivity is integrating the ability to reflect into our thought processes, developing the skill to pause and reflect during experiences and when communicating with others. It allows us to consciously be aware of the stories we share with ourselves and others. Throughout this research experience I have attempted to be self-reflexive, and I believe that this is difficult to quantify or describe, as it is a distinctively personal experience. I can say, however, that the conversations that I have with myself compared to before engaging in this research and in decolonial theory are worlds different. While I had some prior understanding of self-reflexivity, my ability to confidently engage in it now has improved and will continue to get better throughout time as I practice it. Below, I provide a self-reflexive field note narrative that I wrote while beginning to engage in both decolonial theory and Two-Eyed Seeing:

“It can be a confronting experience to uncover thoughts and beliefs that you have about yourself and others that do not align with how you want to show up in the world, or to realize that your thoughts (and the culture you have been living in) have been limiting

you and all your relations' health. In my experience of practicing Two-Eyed Seeing and decolonial theory, it was difficult to maintain balance and kindness for myself. At first, my mind wanted to hold on to my initial beliefs, and then I wanted to dump everything I ever thought and believed and label it as bad so that I could attach myself to something better. This teeter-tottering between worldviews was consuming until I realized that I was focusing on the past and current harms caused by colonization rather than placing my attention on my vision for the future and how I wanted to feel and show up in the world. While it was challenging, acknowledging these thoughts and feelings was important in developing a greater understanding of Two-Eyed Seeing and decolonial theory.”

(4) Seeking to embody practices of decolonization not only in research but also in life:

I have deeply considered the meaning of decolonization beyond research, and specifically what it means in the context of Indigenous food sovereignty. One way that I have attempted to do this throughout my research is through prioritizing Indigenous academic work and seeking out Indigenous perspectives to guide my learning in how I can best support decolonization. I have done this both through academic research articles, and online on social media. Now, when I go online I see many Indigenous Peoples who share knowledges about the land and their culture, and this helps me learn more about the cultural diversity surrounding foodways within Indigenous communities.

(5) Creating long-term and sustained relationships across and between the participants of the study: While developing sustained relationships with child participants during this study was challenging, I did develop great relationships with the

Land2Lab team members Kara Pictou and Ann Fox. Together we have been able to network with community partners, leaders and organizations. The Connecting Math to Our Communities Camp is an example of how we partnered with community to strengthen both of our efforts to engage children in Mi'kmaq knowledges. Now the Land2Lab Project is gaining increasing interest across the mainland from several communities who want land-based intergenerational workshops in their communities and in their schools. Developing these foundational relationships with community organizations, partners and leaders is integral to developing sustained relationships with children. Future efforts to engage children in Indigenous food sovereignty and research will potentially be made easier due to the relationship building we have done within the Land2Lab Project over the past two years.

Ethical Considerations

According to Ermine and colleagues (2014), health research conducted with Indigenous communities should be respectful and responsive to the community it is studying, identify and/or address inequities of power, and produce information that is relevant to the needs of the community. The TriCouncil Policy Statement on Ethical Conduct for Research Involving Humans [TCPS] indicates that researchers must seek community engagement when research is being conducted in an Indigenous community and when the research is very likely to influence the welfare of the Indigenous community, or communities, to which the participants belong (TCPS, 2018). Thus, within this study, it was essential that I be aware of Mi'kmaw customs, traditions, values and beliefs and seek community engagement to collect data in a respectful and culturally appropriate manner.

This study engaged children from Paqtnkek, Pictou Landing, and We'koqma'q First Nations, along with Clifford Paul, Moose Management Coordinator at the UINR. The study was conducted with leadership from the Paqtnkek community, in collaboration with the CMM, and through an informal community partnership with the Connecting Math to Our Communities Camp. The Land2Lab Project and this study was submitted and approved by the Mi'kmaw Ethics Watch, and additionally, ethical approval was sought and approved by Dalhousie Health Research Ethics Board. Three amendments were also submitted and accepted, which were: 1. The readjustment of the Land2Lab Project to include an online learning component to engage children (which was not utilized), 2. The expansion of the study to involve additional Mi'kmaw communities once a formal partnership with the CMM was made, and 3. The inclusion of Clifford in the study.

In addition to being considerate about the culture and population being studied, it is also important to be mindful about potential ethical dilemmas that occur during the research process such as: privacy and anonymity, confidentiality, risks and benefits, dissemination of results, and potential conflicts of interest. Youth participant names were not identified in relation to this research study. All information provided by youth during the group interview and storytelling session was de-identified, and there was very minimal personal information to remove from the transcripts. Once the recordings from the group interview and storytelling session were formed into transcripts and de-identified, the audio-recordings were erased by the lead investigator. As approved by Dalhousie University REB, the de-identified transcripts and consent forms were kept confidential and secure on a password protected computer owned by the lead investigator. I had access to this information, along with Dr. Ann Fox and Dr. Debbie Martin, which was shared through a

secure link that only they could access. In terms of long term storage of data, de-identified transcripts will be removed from my computer and be stored securely on a password protected USB for five years following the completion of this study. This USB device will be stored in a locked cabinet at St FX that Dr. Ann Fox has access to. Five years after the study the USB files will be destroyed.

Additionally, the camp coordinator who gathered consent forms from parents was also privy to consent form information. A recruitment script and consent guide were provided to the camp coordinator to support them in gathering consent (attached in Appendix D and E), and I provided them with information about the study and what we hoped to talk about with youth. The camp staff also provided great insights about how to engage with youth during the study, as they had been working with youth all summer and had developed relationships with them. Partnering with the camp to gather consent acknowledged the relationships that the camp had already established with participants' families.

Clifford Paul was also a participant in this study. This was because throughout the process of undertaking the research, it became apparent that including a Knowledge Keeper's voice was a critical component of understanding how to engage with youth. Aligning with community-led research, we adjusted our approach to meet the needs of the community. Clifford provided oral consent over the phone to be involved in the study, where his stories helped us understand the importance of storytelling on the land intergenerationally, and how we can bring balance to technology and use it in ways to support land-based stories. Clifford also agreed to have his name associated with the study.

Finally, the last potential ethical issue that could be considered an issue in this research study is a conflict of interest. I am the primary researcher for this study. I was also hired as a Research Assistant to help plan and implement the Land2Lab Project. I believe that while there is potential for a conflict of interest, my positionality in the research study and project supports and informs the learnings associated with this study. In order to decrease the potential for undue influence, both real and perceived, the following steps were conducted: First, I did not conduct recruitment for the research study. Instead the camp coordinator introduced the research study and helped gather consent of participants. Secondly, the group interview was optional and child participants could join the camp leaders in another room to play games instead. Finally, during the group interview, I was clear that participation in the research study was completely voluntary, and participants did not have to share their perspectives if they did not want to.

Knowledge Sharing

In order to meet the TCPS2 guidelines and share the research study results with participants and stakeholders, I have already engaged in and have planned several methods to disseminate the results of this study. As part of my Mitacs internship with the CMM, in February 2022 I provided the CMM with a report that highlights my preliminary thesis findings, the larger outcomes of the Land2Lab Project, and possible future areas of focus for child engagement in Indigenous food sovereignty and the Land2Lab Project. Additionally, as part of my internship with the CMM, I developed an online toolkit which will support knowledge sharing across the mainland about Indigenous food sovereignty, potentially supporting adults in many community settings in engaging children in Indigenous foodways.

It is also important to note that the Land2Lab team has shared learnings from the Land2lab Project along with preliminary findings from this study with the CMM at their quarterly board of directors meeting in March 2022. During this meeting we shared our experiences surrounding child engagement in the Land2Lab Project and highlighted the online toolkit and how it can support educators and community champions in engaging children in Indigenous food sovereignty through land-based education and storytelling. I also presented my preliminary findings and helped introduce the Land2Lab Project at conferences while engaging in this research, such as the Science Atlantic Nutrition and Foods Conference, and the International Critical Dietetics Conference. One paper exploring how land-based learning and online technology can come together to engage children in Indigenous food sovereignty has already been published in the Canadian Food Studies Journal (Bujold et al, 2021). A reflective paper surrounding the successes and challenges of the Land2Lab project is underway, which will include some discussion on the online toolkit and how it might support educators and community leaders in engaging children in Indigenous food sovereignty.

In terms of sharing the results of this study, a final summary report and letter will be created after this thesis is submitted and will be disseminated to Clifford, the CMM, Kerry Prosper, and the math camp. I will seek out conference and manuscript opportunities to share and highlight the results of this study. I intend to submit a manuscript for the Healthy Populations Journal 2023 special issue on Indigenous health and health equity. I will also share my thesis with my network on LinkedIn. This thesis and any future publications will be added to the online toolkit, as well as shared directly with Kara Pictou and her managers at CMM.

Summary

This chapter introduced the research methodology and design for this qualitative study exploring children's and Knowledge Keepers perspectives on Indigenous food sovereignty while engaging in the Land2Lab Project, an online and land-based Indigenous foods program. By using decolonial theory, and a worldview of Two-Eyed Seeing, this approach allowed for a deep understanding of how engaging in both land and online environments may shape children's involvement in Indigenous food sovereignty through narrative inquiry. All aspects of the study design were chosen to align with decolonial theory and Two-Eyed Seeing. An overview of narrative inquiry method and analysis was provided, justifying the use of Indigenous storytelling as a data collection method alongside Western approaches. Additionally, I provided an account of how the proposed study differed from what happened in reality, as is often the case in qualitative community-based research and can provide rich insights guiding future research with Indigenous communities.

Chapter V: Learnings

In the following analysis, three lessons learned from this study are presented: 1. Storytelling to Engage Children, 2. Creating Food Stories on the Land Together, and 3. Two-Eyed Seeing as an Analytical Approach. These lessons learned attempt to address the research question: How can online technology and land-based learning come together during the Land2Lab Project to engage Mi'kmaq children in Indigenous food sovereignty?

Clifford's Story

To begin a presentation of the research learnings, I feature a piece from Clifford's storytelling session that he shares with the group of Mi'kmaq children during the day-long event at StFX. I do so because it highlights many of the reasons why Indigenous food sovereignty is integral for Indigenous community health. His storytelling has the potential to shape how children understand food and Indigenous food sovereignty, as the stories we share with children can guide them throughout life. Including Clifford's story at the beginning of the learnings provides perspective into how to engage children in community-based research and Indigenous food sovereignty, which is a central theme of this research.

Below, Clifford shares with children his story of how his connection to food and Mi'kmaw culture brings him and all of his relations good health:

As a Mi'kmaw person, we're hungry all the time. You're always hungry, and your parents are going "Jeez, you're a bottomless pit - What's going on? You just keep eating and eating." Why that happens - Do you know why? Because you have a hunter gatherer metabolism, it is different. We have evolved as humans as hunter gatherers... which means we have to climb the cliffs to gather eggs, dive in the

ocean for lobsters, chase the moose in deep snow to get that food. We did spear eels through the ice. How many have done that?

[Children raise hands]

Those of you that have done it and continue to do it, you're able to pass on the stories. If you don't do it; if you don't fish, if you don't hunt, don't gather berries, if you don't cook when you do, the stories end right there. We were designed to burn a lot of calories and to eat low calorie foods - we were designed to run and chase the moose, spear the eels, dive for the lobsters and everything we've done that way... That's why our kids are always hungry, always opening the fridge, or sitting watching TV and hearing someone in the kitchen. That's normal. That's normal. That's the way we're supposed to be... but we *have* to use our bodies to acquire that food...

So, the stories, you know what? It's all about stories. And it's all about your connection to Mother Earth. Your connection to yourself, your connection to your family, your connection to your community, your connection to the nation. And you're wondering, how does that relate to food? *It's all about the food.*

Through his story, Clifford demonstrates to children the connections between the land, Mi'kmaw foodways, health, and oneself, community and Nation. Indigenous storywork relates to the land and its foods, and through storytelling, Clifford engages children in Indigenous food sovereignty.

Storytelling Can Engage Youth in Indigenous Food Sovereignty

Experiences with the Land2Lab Project throughout this study have led me to believe that it is who we involve and how they tell stories that determine if we are able to engage children in Indigenous food sovereignty, whether it be on the land, online, or in a kitchen and classroom. I understand an individual's lived experience as being a fundamental component in both land-based and online learning when engaging with Mi'kmaq children; we need skilled communicators and storytellers who practice Mi'kmaq foodways who children can relate to so that they can show them how to speak about, think about and practice their Indigenous foodways on the land (Fast et al., 2021; Moore, 2019).

In this portion of the analysis on Clifford's storytelling session, the researcher-led group interview structured as a Q&A, and my field notes, I have identified three lessons learned on how to engage Mi'kmaq children in Indigenous food sovereignty through storytelling: 1. A Good Story Begins with a Hook, 2. Learning to Listen and 3. Stories Create Stories. These lessons learned were gathered from the way Clifford engaged the child audience in his storytelling session. I also refer to the group interview highlighting that children were not incredibly responsive to this approach when compared to how they listened to Clifford's stories. Yet, both approaches together provide insights about engaging children in Indigenous food sovereignty. By employing multiple methods of data collection through Two-Eyed Seeing, we can appreciate the insights made through considering all approaches, and how they can come together to provide children with a multitude of learning experiences and opportunities to share their stories and engage in Indigenous food sovereignty.

A Good Story Begins with a Hook

The power of storytelling first became apparent to me when Clifford began his storytelling session. There is something about the way that he started his story that caught children's attention. After Clifford was introduced by one of the camp leaders he began his story by casting his line and hook, saying:

I'm here to talk about food, Indigenous food. Us as hunter gatherers, as Indigenous people, we have a different way of interpreting food and digesting food and we're spiritually attached to food.

You know, I have eleven grandkids. They all have good manners. That's a gift from God. They all love home cooking which is another gift because they can go to McDonald's anytime they want to and they can scarf anything down, but they rather I cook for them. They love Indigenous foods. They love striped bass, they love salmon, love moose meat, love berries. They love eating all these great foods, they rather that.

Clifford, through introducing himself in relation to children as “us as hunter gatherers, as Indigenous people” who are spiritually attached to food potentially demonstrates to children that they are connected to him. He then shares that he is a grandfather and that all eleven of his grandchildren have good manners. This potentially encourages them to respect him, and similarly, they can relate to his grandchildren and want to show him that they have good manners and love Indigenous foods too. This relational and motivational approach possibly caught the child participants' attention, reeling them into his story (Kromka & Goodboy, 2021). Further, Clifford's identity as a grandfather and Mi'kmaw person potentially encouraged the children to feel respect for

him by actively listening to his story, which enabled them to reflect on their own experiences.

Learning to Listen

Children shared their perspectives with me during the group interview, yet their attention was not focused on me or my questions in the same way that they were with Clifford's stories. Some of the children's distraction could be attributed to the poor timing of the group interview right before dinner, although reminders for them to listen while their peers shared their perspectives with the group were more prominent in the interview than during Clifford's storytelling session. For instance, the researcher, the math camp director, camp leaders and even one of the participants encouraged the group to listen and let everyone have their turn to share.

Researcher: What would you like to say? Remember everyone should be quiet.

Researcher: How about we raise our hands when we have an answer.

Math Camp Director: No talking when someone else is talking!

Camp Leader: Only one person talking at a time!

Child Participant: My turn! Stop moving your chairs (chairs squeaking), be quiet.

Capturing the attention of children is important in sharing knowledge about Indigenous foodways, and when engaging with them we should try to adapt our approaches to ensure that we are able to gain their interest. Storytelling, in the case of this research, maintained child engagement better than the group interview. We can also learn from how differently Clifford speaks to child participants when they wanted to share their stories while he was sharing his. For instance:

You guys want to let me continue to talk and then we'll have questions and answers because I know you guys are smart, that's why you're raising your hand. You have all these things to say. Just hold on to it, okay, because I'm on track now.

And again, later on:

It's all about our connection - Okay, so let me talk now. I really want to hear about all your stories, because it's all about the stories... it's all about the stories.

Clifford is teaching children how to listen. His approach underscores validating children's stories and their significance to him while demonstrating the importance for children to listen to Elders and Knowledge Keepers stories first, and then they can share their own. The stories from older generations can help inform children's stories and in this process, children can learn valuable listening skills that will support them throughout life in developing and sharing their own stories. Clifford highlights this teaching in his talk when he shares how his grandfather's stories about Mi'kmaq knowledge influenced him and his life path:

When I was 15 years old, he never told me any war stories, but he told me all the eels came from the Sargasso Sea... and I'm like a 15-year-old kid not knowing any better, then I went on to college...[Then] I was 36 years old, and I was working at Eskasoni fish and wildlife. They were studying eels and my boss said, 'here's the Bible on eels, you have to read it before you do your work.' Read it, first chapter: All the eels come from the Sargasso Sea...My grandfather said that when I was fifteen. So, I'm like, I should listen to my grandfather because he's saying exactly the same things that the scientists are saying. He has a repertoire of traditional knowledge.

The way Clifford shares his story illustrates the connection between who he was as a child, young adult, and now his current adult self. This story represents learning through the life stages, and it left me appreciating the relationship between the past, present, and future and how it is all interconnected spiritually. Clifford remembered this moment between himself and his grandfather later in life when reading the 'Bible' on eels that his boss recommended, and while he may not have understood the true importance of the words his grandfather shared at that moment in time as a young person, later in life he continued learning from the experience and the Indigenous knowledge his grandfather shared with him as a 15-year-old boy. This demonstrates to me that sharing stories today have the potential to impact children later in life.

Clifford's words are also wise in that he is encouraging children to learn from his younger self, to listen to Elders now rather than later. Clifford's story suggests that as children gain more life experience they are able to reflect on their past and compare it to their present and can integrate their learnings to support their health just as Clifford has. This shows that sharing Mi'kmaw knowledges through storytelling is protective for health and identity when moving into adulthood, and that listening, learning and reflection are important concepts throughout all stages of life.

Stories Create Stories

A good storyteller empowers others to share their own story, where through the sharing of their story they give others unspoken permission to speak up and see value in their own voice and experiences (Ann, Edlmann, & Brown, 2019). When a storyteller is sharing a story, it is natural for the listener to relate to what is being said in some way based on their own past experiences and how they story their own lives. Through listening to

Clifford's stories, some children were able to consider their own stories about Mi'kmaw foods and being on the land, and they excitedly shared them when Clifford asked them to:

Boy Participant: There's a pond where I live with trout and they were right by the shore, and my dad went up and he caught a fish with his bare hands!

Boy Participant: We were swimming, and we found a sharp rock and we chucked it in the water, and it hit a fish and we caught it with our bare hands!

Where Clifford responded: Woah, what a warrior, holy cow!

This demonstrates that sharing stories with children encourages them to share their own stories. In terms of the group interview, however, storytelling was not employed in the same way. Rather, the researcher asked children questions relating to the day's activities (see Appendix L for interview/sharing circle guide). It is important to emphasize that there are different types of stories. Indigenous stories are different from Western ones and thus, interviews and storytelling sessions elicit different types of stories. Different story methods and circumstances create a different spirit that gets shared, and all stories are important. The group interview, a Western approach to gathering information through story, does provide insight that would have otherwise been missed from only analyzing Clifford's storytelling session.

Asking children what sort of activities that they enjoyed doing from the day-long workshop was one way I was able to engage with children. For example, during the interview boy participants seemed excited about doing land-based activities surrounding Indigenous foods when I asked the question: What about learning about traditional foods? Would you like to go... berry picking?

In response to this question, boy participants shared:

Boy Participant: [I would like to go] hunting for rabbits.

Boy Participant: I think fishing, fishing would be awesome!

Boy children also described the kitchen/lab activities when the researcher asked the following question: Alright, lets talk about the lab activities. Would everyone like to say what their favorite lab activity was?

Boy Participant: I liked it when we made the bread and ate the dried blueberries.

Boy Participant: I like the blueberry jam. It was really fun to make.

Boy Participant: Tasting the tea... only one tasted good though.

Boy Participant: Doing the math!

Boy Participant: I liked the science one upstairs [blueberry leaf antioxidant lab]
...We got to use the machines.

There were both land-based and lab experiences surrounding Indigenous food sovereignty that they enjoyed engaging in. There was an interesting difference, however, between how boy and girl participants shared their perspectives during the group interview that led me to consider how gender identity relates story creation and engagement. It is important to note that I am making assumptions about the gender identity of child participants involved in this study as I did not explicitly ask them details about their gender identity. I was talking with two girl participants during the nature walk and I was saying how peaceful the river was - it was high because of all the rain we got the previous day, and I was pointing out the smell of the flowers, plants and berries that Gail had shown us during the nature walk. It seemed like they remembered this and brought it up during the group interview:

Researcher: What parts of the nature walk did you like?

Girl Participant: I really liked the water.

Girl Participant: I liked the smell.

Girl Participant: I think mostly the flowers. Yeah, I loved it outside.

When I asked the following question about the nature walk part of the day, girl participants shared what they liked in a more descriptive sensory way than the boy participants who mainly described the actions and activities they did. This leads to me to believe that the girl participants may relate more to me than the boy participants do, possibly being a reason for why the boy children engaged more readily with Clifford too. No girl participants shared their stories during Clifford's talk. The words I shared with girl participants may have influenced how they experienced the nature walk, which they potentially demonstrated through sharing their perspectives during the group interview.

Another insight I gained from analyzing the day long workshop at StFX was how the land-based activities and group interview Q&A supported children in engaging with Clifford during his storytelling session and in their own story creation. For instance, during the group interview I started with an ice breaker question asking children to share what their favourite Indigenous food was, which would emulate a question that Clifford would ask during his storytelling session. This portion of the interview also provided some insight about children's understanding of what Indigenous foods are:

Researcher: What is your favorite traditional food?

Child Participant: I don't know

Child Participant: My favorite food is... bologna! (laughs)

Child Participant: Macaroni

Researcher: When we think about traditional foods...one thing about traditional foods is that they're all found on the land. So foods that are found naturally in nature... we can think of –

Child Participant: Moose!

Researcher: Yes, moose is a traditional food!

Child Participant: I like salmon.

Child Participant: I like lobster and salmon. I like all seafood.

Child Participant: Bread and Blueberries.

Once I provided more information about what Indigenous foods were, children were quick to share their favourite foods. As children gathered more information about Indigenous foods and foodway practices, their understanding, and thus, how they responded and shared their perspectives expanded. Stories create stories in that the words I shared, and the words that children shared to the group, helped inform their future responses. It is also important to note that foods like bologna and macaroni could be considered important cultural foods to children and are foods that they enjoy eating. We can acknowledge through Two-Eyed Seeing that both Western and Indigenous foods can be and are a part of Mi'kmaq children's diets.

During Clifford's storytelling session he also asked children about Indigenous foods: "What wild foods have you eaten or seen today?" and they took turns answering:

Child: Blueberries

Child: Carrots

Clifford: "Carrots - Awesome!"

Child: Moose

Although the group interview engaged children differently from Clifford's storytelling session, children were able to reflect on and respond to the questions I presented them. While the interview was not intended to inform or teach children, it potentially deepened children's understanding of what Indigenous foods are and supported their confidence in sharing what foods they had eaten or seen during the days activities during Clifford's storytelling session. Additionally, I, similar to Clifford, was pleasantly surprised when one child suggested carrots. When we were on the trail walk, Gail showed the group of children a plant called Queen Ann's Lace and shared that it is actually a part of the wild carrot family, as it has long a taproot and lacy leaves and the roots taste similar to the cultivated carrots we find at the grocery store. While both the root and flower are edible, Gail underscored that extreme care needs to be taken when harvesting, and actually advised against it because wild carrot is easily confused with poisonous hemlock.

The nature walk, lab activities, the group interview and Clifford's storytelling session are all interconnected, and together they supported children in engaging in and learning about their Mi'kmaw foodways and Indigenous food sovereignty. The interconnections between the storytelling and land-based activities that children were involved in during the day long workshop at StFX lead me to believe that these experiences helped inform children's understanding of what Mi'kmaw foods are, and that some children remembered these land-based experiences and shared them with the group. This highlights that stories create stories, and Mi'kmaw food knowledge shared with children can directly influence them and their understanding of what foods naturally come from the land, water, air and ice.

We Have to Create Food Stories on the Land Together

Within Clifford's storytelling session, he shared many stories about Indigenous food sovereignty that spanned across his lifetime, and he shared with children that it is a life-long learning journey and lifestyle practice. This is wisdom that only an individual who engages in Indigenous knowledge systems and Indigenous food sovereignty can effectively share. Through engaging children in storytelling, Clifford potentially helps guide children towards developing their own repertoire of Mi'kmaw knowledges and therefore, spiritually impacted land-based experiences which are highlighted here in the second lesson learned.

Building a Repertoire of Mi'kmaw Knowledge

Clifford's story is a story about how to be Mi'kmaq, to value the land and the foods it has to offer, and to critique how Western culture has influenced the health of Mi'kmaw families and communities. He frames the story so that children see themselves and Mi'kmaw culture as strong and healthy, and ultimately, the best way to live. He encourages them to get on the land with their communities to build their own repertoire of Mi'kmaw knowledge and heal from Western food systems:

Mi'kmaq people, when we move for our food, you know, stalk moose, or spear the salmon; all this activity made us into great warriors because we were using our bodies. Both men and women... it turned them into great warriors. And the Mi'kmaq, because of our connection to the land and how we acquired our food, nobody was able to defeat us. Why? You know why? Because we love our land. We love our water. We love our food. The food was able to let us survive...

And like I said, you folks, you have to be the storytellers. I can't just talk about this kind of stuff if I don't teach it, breathe it, live it, eat it, smell it, share it. I have to do all these things. And we have to do all these things *together*. So, ask your Elders to take you out fishin'. Ask your Elders to take you huntin.' If the Elders are too busy, there's other people that they have taught who can take you out. Do it safely. If we do that and start eating more natural foods, we will live longer. Things will be going better for us and our health. And our families will be stronger too because it takes a family to do these types of things...

We have to get back to the old way of families working together to prepare food, to gather the berries, to harvest the sweet grass. And that's what I'm here for. I do it and I teach it. It would be awful if I had all this traditional knowledge and I died with it and I didn't share it. Traditional knowledge is what helped us survive. Traditional knowledge is something we have to share. So those of you who told me stories of when you were on the land and gathered food, you're building your education on traditional knowledge. You're building what we call a repertoire of traditional knowledge. So, I want you to think that way now - what am I going to do to build my traditional knowledge?

Clifford makes the relationships between learning on the land together with family and community, and storytelling and Mi'kmaw knowledge clear in this part of his story. He urged the group of children to connect with individuals who have Mi'kmaw knowledge so that they can continue learning about their foods and foodway practices that have enabled Mi'kmaq survival for generations. He also uses himself as an example, where he says that his calling is to teach and share how to get back to Mi'kmaw ways of families

and communities working together to gather and prepare food, and that if he did not do this, the crucial knowledge he has would end with him. Sharing knowledge and working together towards a common goal of balance in health is a fundamental aspect of Mi'kmaw foodways.

He further demonstrates the importance of this intergenerational teaching when he shares a story of a time when he was talking to a Mi'kmaq woman about food:

She said, 'Me and my mother and my grandmother used to go on a canoe and go to the islands on the Bras d'Or and pick gooseberries and we would make all these jams and stuff with them.' So, I said, 'What about your daughter or your grandkids?' She says, 'I never took them.'

I told her the story is going to end with you because the kids are going to say, 'Mom how did you pick these berries?' We have to have you guys say instead, 'I went with my mom,' or 'I picked with my mom - I went with my family and I picked these berries and we made this!' The stories have to continue, and it is your job, your parent's job, your grandparent's job, or people in your community's job who are good at harvesting food to pass it on, because once you stop being involved... the stories end.

Building a repertoire of Mi'kmaw knowledge is enabled through intergenerational land-based activities. When we bring together multiple generations, the knowledge that is shared spans possibly hundreds of years and has the potential to span hundreds more as the stories continue through the youngest generation. The stories are not only informed by foodway practices done on the land, but the relationships developed and strengthened while on the land.

Clifford speaks directly about why it is important for children to build a repertoire of Mi'kmaw knowledge and practice foodways, as these practices, stories, and the food gathered from the land will continue to support Elders who cannot go out on the land for themselves anymore. Instead, they will rely on the younger generations that they have shared their stories and skills with to provide them with the nourishing foods from the land:

If I teach my grandkids to learn how to fish, gather, and do it respectfully, when I get old and I can't see too well, no driving, my arms are sore, my back is sore, and I can't run out and do all these things, the kids are going to have to do that for me. So that's very important for you guys that you work with your community and the people who do these things [practice Mi'kmaw foodways].

Clifford's story suggests that children, and all generations, share responsibility in maintaining Indigenous knowledges and supporting the health of their communities. The knowledge and relationships that Elders share and form with younger generations can be protective for their own health. Creating food stories on the land with all relations is intricately connected to Mi'kmaw community health. Being on the land and learning to practice Indigenous foodways is fundamental in story creation and relationship formation, as Indigenous knowledge was created while on the land in relationship with family and community, and with all other relations that exist in nature. The spiritual nature of land-based experiences exemplifies Indigenous knowledge stories, as when on the land, both experiential learning and the interconnectedness of nature, and our place within it, can be appreciated.

Spiritually Impacted Land-Based Experiences

Clifford provided his talk to children in a classroom at StFX. He speaks, however, about the land, its foods and how Mi'kmaq people benefit from being in spiritual

relationship with Mother Earth. This emphasizes the spirit of storytelling, where stories can often take us to other places and times; where it can take children to the land in their imaginations and enable them to feel empathy and connection to nature (Nguyen, 2021; Yilmaz, Temiz & Semiz, 2020). Still, I wonder what Clifford could have taught children while on the land. Instead of motioning actions of climbing, diving, and chasing when he describes these land-based activities during this talk; “we have to climb the cliffs to gather eggs, dive in the ocean for lobsters, chase the moose in deep snow to get that food” he would have perhaps been able to show children physically, potentially engaging them in all three engagement components (behavioral, affective and cognitive) at once, outlined by Pancer and colleagues (2002). On the land, he would also be able to tell children stories that naturally arose from their surroundings.

An example of this happened at the eel fishing workshop held with Elder Kerry Prosper in February 2019. Here is the story from my field notes:

Imagine an expansive snowy ice-covered lake lined by distant hills and coniferous trees, with the grey winter sky contrasting against the white of the snow. In the middle of the lake, you would find the group of us circled around expertly carved holes in the ice watching and taking turns spearing for eels that hid in the mud beneath the ice. Elder Kerry Prosper showed us all how to eel with the tools that were hand-carved by the children the week before and provided helpful suggestions and stories of previous eeling expeditions he had been on.

We had been on the ice for about two hours when we caught the first eel. This was an exciting moment for everyone, especially when we noticed many bald eagles flying over our heads the exact moment the first eel was caught. The children

acknowledged this spiritual message from Creator and gifted the first eels to the eagles. They then enjoyed taking pictures and videos of the eagles diving down from the sky, swiftly picking the eels up with their talons. Kerry encouraged them and recognized the significance of this encounter. He used it as a teaching opportunity to share stories with children about the interconnectedness of nature and the food chain, as well as their position within this system as human beings.

Practicing Mi'kmaw foodways intergenerationally allows for experiential learning, the sharing of stories and the story creation process to occur simultaneously. While we were teaching about eeling, the bald eagles, which have spiritual and cultural significance within Mi'kmaw culture, crossed our paths in such a meaningful way we all developed relationship with them. They became a part of our story we share with others to represent the spiritual and natural phenomenon that exist in the wild, if only we take the time to go on the land and experience it for ourselves. There is a plethora of valuable knowledge, both ecologically and spiritually to be gained from the relationships that exist within nature.

Clifford also talks about spirituality during this storytelling session, namely when he shares a harvest prayer with the children. This prayer exemplifies the spiritual knowledge systems within Mi'kmaw culture through the concept of Netukulimk. And further, that all relations come together in supporting harvest when we express gratitude and share a message with the Creator that acknowledges our spiritual relations.

I'll say my prayer: Creator, I thank you for this beautiful day. I thank you that I have the physical, mental, social and spiritual ability to do what I am doing today. I thank you for all my friends here. Watch over them and grant them a safe and successful harvest. I want to let your birds and mammals and fish and insects know that we

are here with good intentions and love in our hearts. We are here to acquire food. And should we acquire food, we are forever grateful. If we do not acquire food, may we acquire knowledge which is ever conducive to our survival.’

And then we also ask the spirit of the land and the spirit of the water to watch over us, keep us safe, and to bless every one of us that are doing these things, because it is sacred to us. We then ask our ancestors to come in and join us and we say it as all my relations. We also say Amen to include people who pray that way... And then a fish will come along, take your line, bite it, reel it in. There is the fish, its the answer to your prayer... was a gift from the Creator. You asked for it. Sometimes you get a small one who wants to be the gift and we say sorry, you're not the gift today. Only a matter of time. Or sometimes we get one that is this big [motions with hands out wide] and its the great, great, great grandfather of all the fish. And we say, ‘We have to put you back because you are good at having lots of fish playing.’ So, we use the concept of Netukulimk, and we only take what we need.

In this way, the food received from the land and water and air answers prayers offering itself to those on the land in order to support the balance in nature; further reinforcing spiritual relationships with self, Creator, and Mother Earth. Through practicing Netukulimk, Mi’kmaq people ensure that they are in balanced spiritual relationship with Mother Earth and the Creator.

Clifford’s prayer also indicates that even when no food is harvested, this can also be regarded as a gift from Creator. The knowledge gained through possible failed attempts can potentially bring us in closer relationship with the land as we will gain stories and skills that will support us and all our relations in harvesting food in the future. This process of

gaining new knowledge is spiritually influenced, as when we are open to receiving new knowledge from our surroundings, or through reflection, meditation, visions etc., we will be more likely to recognize it, implement it, and physically support ourselves and our communities in obtaining food in the future and developing a deeper understanding of our environments.

Two-Eyed Seeing as an Analytical Approach

Spiritual knowledge systems have facilitated the development of complex tools and systems to harvest food within Mi'kmaw communities and other Indigenous cultures (Stonechild & Starblanket, 2016). Yet, Western society has generated technology and lifestyles that has enabled many of us to distance ourselves from being in this spiritual relationship with the land and its foods. In fact, this started thousands of years ago with the creation of agriculture and farming, along with the human creation and use of money that fundamentally changed how we all relate to each other (Harari, 2015). Some species have benefited in this new relationship with humankind, such as corn and soybean, which have spread across the world for their multitude of uses in human production (Pollan, 2011). Other species and relations, however, have not benefited in this way and arguably human health has also suffered. The following theme explores how we can encourage children to be intentional about prioritizing spiritual knowledge systems, practices and ways of knowing to engage in Indigenous food sovereignty. This can include technology under the right circumstances.

Prioritizing Indigenous Practices

Teaching Mi'kmaq children how to bring balance to their life and their health through their culture is a key element of Indigenous food sovereignty. Clifford shares with

children his perspectives on how to achieve health through prioritizing being on the land. While child participants did not directly speak to online technologies within the group interview or during Clifford's session, Clifford discusses the importance for them to prioritizing spending time on the land to develop their repertoire of Indigenous knowledge:

Those of you who told me stories of when you were on the land, and gathered food, you're building your education on traditional knowledge. You're building what we call a repertoire of traditional knowledge. So, I want you to think that way now, what am I going to do to build my traditional knowledge? Am I going to go on my bike and go to the store to get a popsicle? Sure, you can do that. Or am I going to go sit on a TV screen and go like this? [plays with imaginary phone/game system]. You get killed and you go slamming [throws imaginary phone/controller], you get mad, you waste the human emotion on artificial means. Or are you going to go out and learn something that our ancestors had done?

Clifford is encouraging children to start thinking in ways that will support their repertoire of Indigenous knowledge, to think about their actions and choices as supporting their health, culture, and community.

I acknowledge that online technologies like social media and gaming have become an issue of contempt within many households (Procentese, Gatti, & Napoli, 2019), especially when we consider the overuse of the platforms we use today and how online technology potentially impacts all aspects of health (Chen & Nath, 2018; Pontes, 2017). Clifford speaks to this above, which highlights how the use of online technologies may take time away from engaging in other activities that bring children closer to their culture. The habits that individuals, and in particular children, have acquired surrounding how

much time is spent sitting in front of a screen, along with the nature of content consumed, is time taken away from other important learning activities. If we are not mindful, overuse or social media addiction has been shown to contribute to deterioration of psychological health by increasing levels of depression, anxiety and stress (Pontes, 2017). To prevent this, Clifford encourages children to get outside to spiritually connect with their ancestors and to imagine themselves doing the same things their ancestors would have done possibly hundreds of years ago. I also see the need for more education and discussion on how to use online technologies in healthfully protective ways so that all children can recognize when to turn the screen off and go get some fresh air.

Clifford further illustrates the need for spending time on the land, rather than online, when he discusses how stories are formed when children engage in land-based learning:

[you can say] I am now part of this story. I can tell this story and I am included in that. So, it's all about the stories and our stories are connected through our relationship with Mother Earth.

Being on the land is integral for learning Indigenous foodways and for story formation, which benefits health in a myriad of ways (Auger et al., 2016; Bartmes & Shukla, 2020; Battiste, 2011). Having an online presence, however, can also potentially benefit children in forming their stories if used alongside land-based experiences and in a way that upholds Indigenous knowledge systems (Bujold et al., 2021). This is where I asked the question: Does technology remove us from our natural world, or can it bring us closer?

I see technology as a tool, and how this tool is used will determine how beneficial it will be in supporting land-based learning. Using technology with a Western worldview that does not inherently value the natural world could further remove us from it, whereas

using technology with an Indigenous perspective that encourages us to seek out information relating to the land could enable our connection to nature and encourage us to get outside. Through a Two-Eyed Seeing lens, we can see technology as not being inherently Western, but as a way to communicate that any community, culture or society can benefit from depending on how it is used. There are complexities surrounding how technology and culture are intertwined; technology is not easily categorized as good or bad, Indigenous or Western. It is simultaneously all of the above.

Through Two-Eyed Seeing I have come to believe that being on the land, and the feeling of being in nature, cannot be formed solely online. Yet, online technologies in many ways have become a tool of child and youth activism and resistance towards colonization, where children are reclaiming their knowledge systems, both online and on the land. Indigenous children are simultaneously technology users and the Knowledge Keepers of tomorrow. Utilizing technology may help to ensure that they are able to preserve the Indigenous knowledges that Elders pass on to them, as well as providing the means to share and pass on their culture with future generations.

Chapter VI: Discussion

Building on my analysis, this discussion chapter focuses on Etuaptmumk – Two-Eyed Seeing and child engagement in Indigenous food sovereignty through storytelling. In the first section of this chapter I discuss and reflect on how Two-Eyed Seeing was applied to engaging children in research and to community-based programming within the Land2Lab Project. In the second half of the chapter I further discuss ideas surrounding child engagement in Indigenous food sovereignty, the complexities surrounding storytelling, and how land-based Indigenous food experiences can support us in engaging children in their cultural knowledges and Indigenous food sovereignty.

Section 1: Two-Eyed Seeing in Community Based Research

In this section of the discussion I discuss how Two-Eyed Seeing informed the development of child programming and engagement in Indigenous food sovereignty during the Land2Lab Project. Two-Eyed Seeing and our ability to weave between perspectives to come up with solutions to our challenges throughout COVID-19 positively influenced the success of the Land2Lab Project, as will be discussed below. It has provided insight about Indigenous research and the methods we use to engage with children and the stories we share with them about Indigenous food sovereignty.

Reflections from Research

Prior to this research experience I had a pre-conceived notion of what research was and how this research would unfold. Prior to working with the Land2Lab Project and the CMM, I proposed a method of child engagement that did not align entirely with the needs of the community or the Land2Lab Project. As the Land2Lab team learned together our methods changed in order to engage with children and Knowledge Keepers to gather their

perspectives as intended. Two-Eyed Seeing and decolonial theory allowed me to frame this research experience as a co-learning journey between the researcher, stakeholders and participants where we can challenge our assumptions about research, knowledge, and community impact. Adapting community-based research to the needs of community is imperative and should consider relationship development as a marker or foundation of research success.

Throughout the course of this research I have come to understand that building relationships with children is vital to their involvement and engagement in research and data collection (Heffernan et al., 2017), and in Indigenous food sovereignty (Ferguson et al., 2021). Building child-adult relationships in the context of research, however, can be challenging (Heffernan et al., 2017): especially in the midst of a global pandemic when connecting in person was at times disrupted (Santana et al., 2021). Heffernan and colleagues (2017), however, state that there are different levels of child engagement that can provide children with a range opportunities to be involved in research depending on their capacity, commitment, and availability. They also underscore the importance of child-adult relationship building when considering child engagement, and how knowledge and story sharing occurs within this relationship (Heffernan et al., 2017).

For child engagement to occur in research, researchers need to develop a thoughtful understanding of child engagement and their responsibility in creating an environment where children feel inclined to engage. For instance, Liebenberg (2017) states that there may be occasions when children will not be able to or want to give their attention to research, and how we as researchers respond to these moments are important. To address

this issue, Hawke and colleagues (2020) discuss the need for researchers to develop child engagement skills:

Like any other skill, collaborating with children to develop, design, conduct and implement research has to be taught and learned; this is essential in order to guide researchers in engaging authentically, avoiding tokenism, and ensuring the safety of the children (pg. 584).

Liebenberg (2017) further states that respecting and honoring youth in research means extending ourselves in terms of how we understand research, ethics, children and participation, and to engage in critical questioning of normative assumptions around these terms. In other words, we need to re-write the story of how research has been done with children. We can challenge our assumptions on what child-engaged research is and how to achieve it. We might also consider how involving a myriad of community members in the research process might support child engagement in both research and in Indigenous food sovereignty.

Aligning with Two-Eyed Seeing, if we hope to involve children in Indigenous food sovereignty, we can connect them with multiple individuals in their communities who they can relate to so they can help guide them towards (re)connecting with the land and its foods (Hanemaayer et al, 2020). This may look different depending on the children involved. Gender, which is an important aspect of identity, should be taken into account when we consider how and who to engage children with, and effort to engage individuals across all genders would provide children with a wholistic understanding of Indigenous foodways and Mi'kmaw culture. In fact, a recent study by Fast and colleagues in 2021 interviewed Indigenous youth who identify as Two-Spirit, non-binary, and/or LGBTQIA+ who

attended their land-based retreat, and participants highlight how important it is to have safe spaces that are inclusive of diverse gender roles and identities in their learning. Connecting children and youth with a myriad of skilled storytellers, Elders and Knowledge Keepers with diverse gender roles and identity while on the land, online or in the kitchen would perhaps be the most successful approach to engage them in Indigenous food sovereignty within their communities.

Another key learning from this research was the vital role that Elders, and Knowledge Keepers have in engaging youth in Indigenous Food Sovereignty, and that they have their own perspectives of how online technology should or should not be used. Elders and Knowledge Keepers have a wealth of knowledge and experience relating to Mi'kmaq Indigenous foodways and have practise in sharing stories of the land. The storytelling approaches employed by Clifford, I believe, is what encouraged children to share their own stories and experiences of being on the land. Community-based research might benefit from employing storytelling as a method for data collection, especially when engaging with Indigenous children. Who is telling the story, and how the stories are framed, however, are important aspects to consider in Indigenous storywork (Archibald, 2008). This aligns with decolonial theory where Smith (1999) places emphasis on the validation of storytelling and oral histories in research, and that decolonial research should critically reflect on how stories are told, and by whom.

I learned that Elders and Knowledge Keepers should be involved in Indigenous food sovereignty programming on the land, online, and in research data collection. The knowledge that Clifford shared within his stories and the knowledge that child participants shared in return about their own land-based experiences has helped inform this research

and aided Land2Lab Project development. To further support intergenerational knowledge sharing, the Land2Lab Project has made partnerships within the CMM to bring children, Elders and Knowledge Keepers together in the future through the Earth Keepers Network, within CMM's Agricultural and Apicultural programs, and through their Health and Wellness department programs that employs community Dietitians and diabetes consultants.

When writing my research proposal I had not fully considered the importance of storytelling and how it would influence the direction of my thesis. After hearing Clifford's stories, however, it became very apparent how important storytelling is in all aspects of this work; in child engagement, in Indigenous food sovereignty and decolonization, in health, relationship building, for cultural continuity, and in research. This emerging learning has enhanced my understanding of engaging children in both land-based and online environments when teaching about food. Two-Eyed Seeing guided me in re-imagining my research and encouraged me to reflect on and generate my own thinking about my role as a researcher and how we can capture the stories of the Land2Lab Project and engage children in Indigenous food sovereignty. While I did not capture children's perspectives in the way I had initially imagined, I believe the Land2Lab Project workshops, research activities, and Clifford's stories have provided the children involved with meaningful opportunities to learn about their Indigenous foodways. Additional community-based research, however, can further employ Indigenous storywork with children as a method of engagement in Indigenous food sovereignty in order to better understand their perspectives on how land-based learning and online technology can come together.

Section 2: Expanding Ideas of Child Engagement in Indigenous Food Sovereignty

Capturing the attention of children is integral for sharing stories and knowledge about Indigenous food sovereignty and foodways. When engaging with children, we should try to adapt our approaches to ensure that we are able to gain their interest (Heffernan et al, 2017). A number of approaches should be considered, as one specific method is not likely to meet the needs of all children, and this was a key learning from engaging in this research. I have learned, however, that intergenerational storytelling and one's ability to tell a story is vital to child engagement in Indigenous food sovereignty (Budowle, Arthur, & Porter, 2019; Spiegel et al., 2020).

Understanding what aspects of community-based programming are conducive to teaching Indigenous food sovereignty, such as land-based learning and online technologies, are important in ensuring cultural knowledges are passed on to support health. Now, however, I recognize that while *where* we engage children (on the land, in the classroom, or online) is an important consideration, it is also about *how* we consciously frame our stories and engage in land-based and online technologies. Child engagement is impacted by who is doing the telling and how they tell their story to connect with them. Storytelling, whether it be on the land, online or in a classroom, has the ability to spark interest in children and according to Nguyen (2021), through their imagination, can transport them to the land. Storytelling also has the potential to facilitate the skills and knowledge needed for adults to engage children in Indigenous food sovereignty. Ensuring that as adults we are sharing healthful and culturally protective stories with children can enable stronger community health in the future as they grow older.

Sharing Intergenerational Food Stories

We have evolved with the earth. We, along with every other species that exists today have adapted with our environment throughout history because of our ability to consistently feed ourselves nourishing foods, and to pass on stories of how to hunt and gather. The environment, community and culture that we are immersed in influences the stories we tell and how we frame them. Below I will discuss how we can ensure we can pass on good stories to children through spending time on the land, reflecting on land-based experiences, and by grounding storywork in Two-Eyed Seeing and Indigenous Food Sovereignty.

What Makes for a Good Story? Seeing the important role of stories in our lives leads me to question what makes for a good story. This, at least within the context of this research, I see as being embedded within Two-Eyed Seeing and Indigenous food sovereignty. Both Two-Eyed Seeing and Indigenous food sovereignty encourage self-reflection, informed action-taking, sharing, and caring for community and environment. Indigenous food sovereignty particularly encourages this through the process of acquiring food, preparing it, and eating it together whilst sharing stories on the land and in our cooking spaces. By learning the story of Indigenous food sovereignty and considering Indigenous conceptualizations of health, relationality, and reciprocity by engaging in a Two-Eyed Seeing co-learning journey, we can develop the skills needed to tell a good story that can guide us all towards health.

It is important to note, however, that a ‘good’ or ‘bad’ story is not easily distinguished. It may be instinctive to categorize a story as good or bad, but these snap judgments may say more about the stories we tell ourselves than the storytellers. Stories, as are humans, are nuanced and complex. This is what makes stories such a rich source of

data to explore. Carter (2008) proposes that multiple meanings within stories coexist. They assert that a story could be ‘good’ in structural terms where it has a powerful plot line with a beginning, middle and end, but it could be ‘bad’ in terms of the effects it had on the storyteller/listener. And vice versa, where a story could be ‘bad’ in terms of its coherence but ‘good’ in terms of its impact on the person sharing or listening to the story. Stories can also be ‘good’ for the researcher because they create interesting, rich data which will potentially help support the understanding of a research problem and can be ‘good’ for practice as they may result in policy being changed and practice being enhanced. Stories, though, can be ‘bad’ if they are merely misinformation or uphold harmful ideologies that impede health.

Story work requires the acknowledgement that interpretations of a story will vary, and this is in part the challenge associated with considering stories in a research context. The intent, therefore, may not be to find an objective truth within a story, but rather to connect, reflect and find our own meaning from the stories being shared with us in the best way we can. And perhaps a ‘good’ story arises when we can consider many different stories that guide us towards achieving balance in health. Below I discuss how reflection, knowledgeable action-taking on the land and sharing food with community can help inform the creation of a good story when engaging Mi’kmaq children in Indigenous food sovereignty.

Reflecting on Stories. A person’s spirit and health are influenced by the way they have come to tell their own stories of their life – it is their inner world, the way they feel, think, imagine, and behave and how they make others feel in their presence. Reflecting on how the stories we carry around with us make us, and potentially others feel mentally,

emotionally, spiritually and physically is an important reflective practice. The concept of reflective practice has long been considered within philosophy, and also within spiritual and religious practices (Hunt, 2021; Obold Eshleman et al, 2021; Tisdell, 2008). There is interest in reflective practice as a way of understanding and learning from experiences in Western science (Fook, 2002; Hunt, 2021). Here I write about it as an important practice for storytelling.

Reflection is more than thinking about past experiences. It also involves a recurring compassionate critique on our assumptions, beliefs, values and associated behaviors. Often our behaviors and the stories we tell ourselves and share with others are helpful to reflect on because this might enable us to go inward and develop a greater understanding of ourselves. This understanding can support not only ourselves, but others if we share our stories and experiences. This view is supported by Jan Fook (2002), who is widely recognized for her work on critical social work, practice research and critical reflection. She states that critical reflection involves thinking about one's practice or behaviour and critically deconstructing how we have developed these skills and responses with a view to developing new theories of practice and behavior for the future (Fook, 2002). To engage in critical reflection we need to both understand our experiences and the stories we use to make meaning of them and how we can use this knowledge to make our stories, and health, better in the future. As some researchers such as Lord and colleagues (2017) have pointed out, such a reflective process requires help, facilitation, and guidance. When we can integrate the concept of reflection into the stories we share with children we can in turn share with them the language and knowledge needed to engage in critical reflection throughout their lives and support the stories they share with others.

There is a growing body of literature that makes the connection between spirituality and reflection (Hunt, 2021; Obold Eshleman et al., 2021). This is acknowledged within Indigenous knowledge systems where the mindful state aided through reflection facilitates relationship to spirit, enabling the discovery of new knowledge and deeper understanding about the land and its foods and all the relationships that exist there (Stonechild & Starblanket, 2016). This spiritual and reflective relationship with the land improved Indigenous food practices and knowledge over time, and Clifford alludes to this in his story when he says, “if we do not acquire food, may we acquire knowledge which is ever conducive to our survival.” Ultimately, Indigenous education is about learning by doing on the land, coming to an understanding through reflection, listening to stories and discussing with others (Marom & Rattay, 2022).

Sharing Food Stories. Food is the link to our relationship to the natural world. We owe it not only to ourselves, but also to future generations to heal the relationship we have to food. To heal, we can become intimate with the parts of ourselves which have been stifled by Western civilization - our deep seated connection to Mother Nature. Through this process we can learn how to make meaning from our food, the land, the water, the air, the ice, the trees, whatever speaks to you. We can learn to listen to what these relations can teach us and how we can contribute to and be in relation with the cycles and rhythms that exist in nature. When we do this we must also share our experiences and the knowledge we gained with children in order for these stories to continue on.

In order to receive wisdom from Mother Nature we first must quiet the thoughts that discredit her, that challenge her power and trust in her ability to maintain balance. She is the one who continues to show us through climate change that She is not happy in our

relationship with her. We, though, continue to hope that She will support us in this increasingly one-sided relationship. As Robin Wall Kimmerer (2015; 2020) discusses, nothing in nature lives for itself. Rivers do not drink their own water. Trees do not eat their own fruit. The sun does not shine for itself. What do human beings have to offer? What is our role in this complex web of relationships? It can not be to just to drink the water, eat the fruit, and bask in the sun. We must also offer something of value for there to be balance. Perhaps through sharing stories of Mother Nature and her gifts of food across generations we can achieve this.

There is something profound about the process of hunting, fishing and gathering, to preparing and sharing the food you have acquired with others. To the time, knowledge, skill and emotional intensity of having to rely on ourselves and the relationship we have with nature to nourish ourselves - there is a story with every bite of food. And every bite has personal meaning to not only you but the people it feeds due to being in relationship with you and all of your relations. Reflecting on land-based experiences and developing meaning from them allows for the creation of food stories. Through providing others with food we are supporting their health physically (nutritionally), emotionally, mentally and spiritually. Through our stories we can nourish children's minds and potentially encourage them to get on the land, and through gift giving we nourish their spirits and embody being in relation with others. Furthermore, we can share intergenerational food stories formed from the land online and uphold knowledge within communities.

Being a part of this interconnected relationship is ceremony and upholds Mi'kmaq stories, culture and health. In this relationship we embody reciprocity and are a vessel for Mother Nature to share her gifts, enabling us all to offer our service in maintaining the

health of our communities and ecosystems. Ultimately, land-based food experiences can enable the development of a multitude of skills and stories that facilitate health among Mi'kmaq children.

Storytelling can be an effective way to capture children's attention when sharing knowledge about Indigenous food sovereignty and Indigenous foodways. As adults it is our responsibility to ensure that we are sharing healthful stories with children. By learning the story of Indigenous food sovereignty and considering Indigenous conceptualizations of health, relationality, and reciprocity by engaging in a Two-Eyed Seeing co-learning journey, we can develop the skills needed to tell a good story that will guide us towards health. Storytelling has the potential to positively address health intergenerationally when we create stories on the land and share them with children and across generations. Getting on the land, however, is imperative and as adults we can reflect on our experiences and share them with children on the land, online, in the classroom, and in our cooking spaces to support their own story formation.

Strengths and Limitations

There are three main strengths associated with this study. I understand these strengths as being 1. Multiple methods used for gathering data, 2. The use of decolonial theory and Two-Eyed Seeing to explain and understand complex social issues relating to Indigenous food sovereignty and Indigenous health, and 3. This study's connection with the Land2Lab Project and its alignment with a Community-Based Participatory Research [CBPR] approach. While this was indeed a strength, however it could also be considered a limitation in the context of COVID-19, as community-based research became more of a challenge when social distancing protocols were implemented to protect against community spread of the COVID-19 virus (Santana et al., 2021). There is a silver lining,

though, which is that the challenges associated with implementing the Land2Lab program across the mainland and participant recruitment enabled me the time to learn about and reflect on decolonial theory, Two-Eyed Seeing, land-based learning and online technologies, Indigenous food sovereignty, intergenerational knowledge sharing and Indigenous storywork, and how all of these concepts can come together in CBPR to support and promote health wholistically. Taking the time to reflect is an integral part of learning and a required component of applying decolonial theory in research. Thus time taken to reflect could also be considered a strength of this study and overall thesis.

As with many qualitative research studies, however, there were limitations that arose. Firstly, the limitations associated with participants involved, as alluded to in the methodology chapter, were large. This study proposed to explore the experiences and perspectives of Mi'kmaq children involved in the Land2Lab project. Yet, during COVID-19 it was challenging to connect with children in person and online in a research context. This could also be attributed to the methodology and methods selected for this study, and my limitations as the researcher not being a member from their community. I recognize that Indigenous food sovereignty is a complex topic that is difficult to explain to adults let alone children. There were some children involved in this study that were younger than originally proposed, thus, gathering their perspectives about Indigenous food sovereignty was limited. Questions during the group interview were approached in a way that would enable children to talk about their experiences in the Land2Lab Project so I could connect this back to Indigenous food sovereignty. Children did not speak about Indigenous food sovereignty directly, but I believe this approach aligns with the age of children involved in the study.

Employing Indigenous storytelling approaches in the group interview could have potentially enabled children to share their perspectives in a deeper way, rather than through answering questions. Although the group interview provided insights about the use of both Indigenous and Western methods, Indigenous storytelling approaches can potentially enable deeper discussion and exploration of children's perspectives about Indigenous food sovereignty, while simultaneously engaging them in it. During the Land2Lab Project's in-person kitchen and lab workshops, for instance, food stories naturally arose during the activities. This did not happen during the group interview which could be attributed to it not being a natural setting and might re-enforce power imbalance between the researcher and participants impacting how child participants shared their perspectives and engaged in research (Heffernan et al., 2017). Further, the timing of the interview after several workshops and prior to supper potentially impacted participant engagement.

In terms of limitations associated with my own characteristics as a new and learning researcher there have been many learning curves throughout this research experience. My inexperience in both Western and Indigenous research methods, and in particular in engaging with children, was a limitation that I felt throughout this research. I reflect on the group interview and see that I could have shared my own stories of the land, and how my family taught me and continues to teach me to respect and be in relation with Mother Nature. This learning will stay with me, though, and I have learned from Clifford about the importance of sharing stories with others.

Additionally, I believe that I was not best positioned to engage in this research with children due to my lack of relationships and contact in the communities we were working with, and to the time limitations associated with my masters program (and social distancing

regulations of COVID-19). This made it difficult to develop relationships with children that might have enabled the proposed methods to be employed. This community-based research was a challenge to implement during COVID-19, and as result there are many limitations that should be considered alongside the significance and implications associated with this study outlined below.

Significance and Implications

Through analyzing the data, it can be said that this research study achieved its purpose and answered the main research question of how online technology and land-based learning can come together to engage Mi'kmaq children in Indigenous food sovereignty. Through this study I gained a deeper understanding about Indigenous food sovereignty and what is required to facilitate child engagement in it. A multifaceted approach is needed where Indigenous communities are supported in practicing their foodways, and through supporting changes in policy that address the TRC's calls to action.

This study acknowledges the importance of land-based education in story creation, and the ability for online technology to share these stories. This study, and the Land2Lab Project, aimed to bring together both Indigenous and Western ways of knowing to support communities in preserving their Indigenous knowledges about food and the land. Storytelling is emphasized as being a necessary facilitation tool in both land-based and online environments when engaging children in Indigenous food sovereignty, as it supports the sharing of Indigenous knowledges and foodways.

This study was potentially influential for child participants, as they were able to hear cultural stories from Clifford, along with engaging in land, kitchen, and lab activities through the Land2Lab Project that brought together Western and Indigenous knowledges.

The group interview Q&A did enable children to share their perspectives. Yet, it differed from Clifford's storytelling session which engaged children in Indigenous food sovereignty through Indigenous storywork, which is underscored within this research as a way to share, engage, and inspire children to become involved in Indigenous food sovereignty.

This study encourages community-based programming for Mi'kmaq children that incorporates intergenerational knowledge sharing through storytelling, land-based learning, harvesting and preparing Mi'kmaw foods to encourage (re)connection with Indigenous culture. It also recognizes the value of sharing Mi'kmaw knowledges and land-based experiences online and children's potential role in this. And secondly, as a way to teach individuals, and in particular educators, health professionals and community leaders about Indigenous ways of knowing and Indigenous food sovereignty to support their story formation about Indigenous cultures. This study emphasizes how as adults we can *all* utilize storytelling and practice Two-Eyed Seeing to imagine and create a better story to share with children by spending time on the land.

This research study has also been extremely significant to me, as I have discussed throughout this thesis. Namely, through engaging in Two-Eyed Seeing, I was able to deeply reflect on my experiences, and consider my biases and own perceived limitations. I am excited for future research opportunities so that I can employ my learnings and continue the learning/reflection cycle. I have learned about my own internal narratives, the narratives I share with others, and how the land and Mother Nature can help ground my stories in health. Two-Eyed Seeing in particular gives me great hope for the future, and I am excited for the person, Dietitian, and researcher I will be in the future while on this co-learning journey with all my relations. I have also become more confident in my critical

thinking abilities and feel like I can better advocate for Indigenous communities due to engaging in this community-based research. The spiritual nature of this research was incredibly interesting to me, and I was not expecting how this research would unfold. This experience has challenged how I initially viewed research and has shown me that creativity and thinking outside of the box is a strength, and that nutrition and health promotion research would benefit from further consideration of the spiritual nature of life and food.

Future Research

Due to the growing field of health promotion, nutrition, and Indigenous health research there are many potential areas for greater exploration in Indigenous food sovereignty. As a result of this study, I have determined three potential areas of future research that I believe would be valuable contributions to health promotion, nutrition, and Indigenous health literature. First, I have many ideas for future research that I would like to explore. This study has provoked and deepened my interest in Indigenous storywork and its connection to achieving wholistic health, Indigenous food sovereignty, and in practicing Two-Eyed Seeing. I am excited for how these concepts can come together in imagining and creating a future vision of health. I have enjoyed studying the intergenerational relationship between children, Knowledge Keeper, and Elder, and yet I have also recognized the need for supporting health professionals, educators, researchers, and policy makers in developing a more encompassing understanding of health to support their ability in bringing this vision to life.

Future nutrition and health promotion research would benefit from considering Two-Eyed Seeing, Indigenous ways of knowing, and conceptualizations of health to better understand the health needs of people and the environment, and to envision solutions towards a sustainable and just future of health, as imagining a vision for health is integral

for achieving a sustainable food system (Carlsson & Callaghan, 2022). Thus, I think it would be interesting to explore health professionals', and specifically dietitians' and/or health researchers' food stories, and how their experiences inform their vision for the future of food before and after learning about Indigenous food sovereignty and engaging in Two-Eyed Seeing. This would potentially involve a reflective activity where participants would later contemplate their food stories and ideas of health and share their narratives of what the future of food and health looks like for them. Together, all food stories would be considered through Two-Eyed Seeing and be analyzed through narrative inquiry.

Secondly, future health promotion research can further explore children's perspectives of Indigenous food sovereignty, land-based learning, and online technology, as this study was limited in its ability to engage children and gather their perspectives in the way I initially intended. Once more established, the Land2Lab Project can continue to explore children's perspectives through storytelling and creative activity. Other land-based intergenerational projects for Indigenous children should also recognize the benefit of involving children in research and enabling them to share their voices. Relationship building and researcher, project, and child capacity to engage in research partnership should be considered and individually tailored to the situation (Heffernan et al., 2017). Future research would benefit from continuing to explore child, Knowledge Keeper, and Elders perspectives in Indigenous food sovereignty through narrative inquiry methods to better understand their stories of how they are relating to the land and its foods.

Thirdly, future health promotion research that engages in Indigenous community-based research, Two-Eyed Seeing, and decolonial theory should continue to critique the conventional approaches applied in qualitative research. For instance, Indigenous research

might benefit from anticipating space for emerging questions as the research progresses, enabling communities' greater control over the research and knowledge being produced. Future research can also continue to explore Two-Eyed Seeing and how Indigenous ways of knowing can be integrated with and understood alongside Western ways of knowing. For this to occur, however, health research should continue to consider the land and our human relationship to it.

Conclusions

At the beginning of this thesis I referenced Rita Joe's (2015) poem *Nutkmaq* which metaphorically refers to Indigenous knowledges and stories as being valuable guidance for children that needs to be shared. The health enabling stories we share with children can guide them and support their development through life. Through this research I have learned that relational storytelling factors greatly influence child engagement in learning. The way we develop, frame, and tell stories about food and the land has important implications for child engagement in Indigenous food sovereignty. How a storyteller communicates their own food stories and relates to children can influence child engagement along with the memories and values that they carry with them in the future. While land-based and online learning both have great potential in influencing children's understanding of and engagement in Indigenous food sovereignty, it is also impacted by the individuals engaging with them; their identity, their communicative style, their skills and life experience, and the relation they have to the learner.

Teaching children on the land and in the kitchen about their Indigenous foodways is imperative to ensuring that they can embody this knowledge and gain the experiences necessary to pass on their own stories to future generations. Online learning is a reality

many of us are navigating since COVID-19. Online learning may be a way to support educators, health professionals, and community leaders in engaging children in land-based, online, and classroom environments, and as a place for adults and children to access intergenerational food stories on their own accord. A multifaceted approach of both adult and child Indigenous-led education is a necessary investment when considering engagement in Indigenous food sovereignty.

Through this study I have learned that food stories on the land need to be shared intergenerationally, as these stories are key to engaging children in Indigenous food sovereignty and connecting them to Mi'kmaw culture. With Two-Eyed Seeing as my worldview, this study leads me to indicate that we can teach and share intergenerational food stories and Indigenous knowledge online as it is the teacher and storyteller that matters in terms of how they teach, how they have engaged in Indigenous food sovereignty themselves, and have developed their own food stories of the land. Stories about Indigenous foodways and food sovereignty need to be formed from the land, and the ideal way to learn, share and teach Indigenous knowledges is in person, on the land with others. Yet, as Clifford alludes to children, we need to share what we know, and we cannot keep our stories to ourselves. If this means sharing online, then this is a valid approach in maintaining and celebrating Indigenous knowledges and culture.

Online technology, when used to share Indigenous knowledges and Intergenerational food stories of the land, can potentially reach those of us who are ready to receive the seeds of wisdom and Indigenous knowledge embedded within the stories shared. This can support us in engaging further in Indigenous food sovereignty so that we can develop our own intergenerational food stories. Intergenerational storytelling about

Indigenous food sovereignty can engage Mi'kmaq children both on the land and online, supporting the protection of Mi'kmaw knowledge systems, Indigenous foodways, and health of future generations.

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Appendix A: Field Notes

In February 2020, the Land2Lab Project had its first land-based workshops series. These workshops were centred around eel fishing, which was going to be the first of four land-based seasonal workshops that were to take place during the year of 2020. At this first workshop Elder Kerry Prosper taught ten children how to shape their own fishing spears on a carving bench, followed by showing them where to go eeling in their community, how to trek safely across the frozen harbour to saw holes in the ice, provide a tobacco offering of thanks to Creator and how to spear eels under the ice.

During this workshop I first considered online technology in this research, which we were able to document in a field report (Bujold et al, 2021). Even while on the land and ice, children were using their phones yet were still engaged in and taking part of the eel fishing activities. There was a unique moment during the workshop when this became evident to me. We had been on the ice for about two hours when we caught the first eel. This was an exciting moment for everyone, especially when we noticed many bald eagles flying over our heads the exact moment the first eel was caught. Children acknowledged this message from Creator and gifted the first eels to the eagles. Children then enjoyed taking pictures and videos of the eagles diving down from the sky, swiftly picking the eels up with their talons. Elders encouraged them and acknowledged the significance of this encounter. They used it as a teaching opportunity to tell the group about the interconnectedness of nature and the food chain, as well as their position within this system as human beings.

Adapting to COVID-19

Following this workshop the children were planning a community feast with the caught eels, a delicacy for the Elders, when COVID-19 first detected in Mi'kma'ki in early March 2020 and prevented this event and associated sharing circle from taking place. We initially considered canceling or postponing the project but subsequently decided to adapt our approaches to the circumstances. Over the next year and a half, we were able to draw upon a combination of learning and engagement approaches to share Indigenous knowledges with children. At the height of COVID-19 isolation protocols, we turned to technology to engage with children where we attempted to implement virtual activities rather than bringing groups of children and Elders together physically on the land. I initially worried about the seemingly paradoxical relationship of using online technology to promote land-based learning but realized that technology is an important part of everyday life for children (Radoll, 2014) and wondered if it might actually enhance our ability to achieve the Land2Lab Project goals.

During the first months of COVID-19 in 2020 the Land2Lab Project spent time strategizing how to reach children online through delivering online-cooking classes, arts-based activities, or ways to get children on the land in their own communities with their families. Yet, this was largely a time of re-thinking how we should move forward in a way that maintains the intergenerational and land-based components of the project and we hoped for the opportunity to meet in person with participants. The Land2Lab Project, however, did attempt to deliver workshops with online technologies such as the iNaturalist app, which is a citizen science project and online social network built on the concept of mapping and sharing observations of biodiversity across the globe (iNaturalist Network, 2020).

iNaturalist helps members identify various types of plants, fungi, insects and animals, etc., while allowing members to connect with a knowledgeable community to support continued learning about nature. By recording and sharing observations, members can create research quality data for scientists all around the world and within their localized community. As public health protocols changed over the course of a year and a half, however, the Land2Lab Project was able to shift to delivering land-based workshops again. Throughout the Land2Lab Project and this research, various approaches, both online and land-based, were attempted to engage with children and potentially support their learning about Mi'kmaq foodways and Indigenous food sovereignty.

After the first wave of COVID-19 subsided in October 2020, the Land2Lab Project was able to meet in person for three workshops in Paqtnkek on Friday nights (twice without Elders due to COVID-19 risk, and once with Kara's Auntie). These workshops were focused on Mi'kmaw foods and took place in the Paqtnkek community center kitchen. Showing up at the community centre on Friday evenings, we found that a group of about ten children (aged 10-14) were always around and eager to have something to do and eat. The workshops ranged from 2-3 hours long and consisted of demonstrating and making a recipe together with children, with discussion surrounding Mi'kmaw foods and stories of the land and where food comes from. Even in the kitchen the land and climate connection was made clear. We had success in engaging children in the Paqtnkek community kitchen on Friday nights, although we did not hold a sharing circle session following the workshops as was initially intended.

During the first kitchen workshop in October, we made blueberry jam and shared stories of picking berries with our families. We showed children the difference in taste and

appearance between wild berries and high bush berries, along with the differences and similarities between fresh and frozen berries. We discussed good harvesting practices and encouraged children to share their pickings with their community. We also discussed why we preserve berries in the fall when the fruit is ready for harvest, as preservation is what allows us to enjoy the seasonal harvest all year long. Kara's cousins made luskinikn for us to spread the blueberry jam on when it was finished, and the children took home a jar of jam, a recipe and other resources from CMM. We also kept some of the jam for future workshops.

In November we held a Three Sisters Soup workshop with on a Friday night before Halloween. Katherine, the community diabetes consultant at the time, joined us to help lead the session with child participants in knife skills. During this workshop we explained the interconnected relationship between the three sisters (corn, squash, and beans) and discussed how they all support each other in growing strong. We then started preparing the soup, and the children both laughed and cried while cutting the onions and enjoyed learning cooking skills and how to safely cut vegetables.

Our third workshop was with Kara's Auntie, who showed children how to make luskinikn. The children gathered around the island to watch her add the ingredients together and knead the dough expertly, knowing by the feel of the dough when it was ready to be put in the oven. She explained that everyone has their own recipe, and everyone has their own preferences on how they like it; her family recipe was developed over time, and she knew the method from memory. This represented to me the importance of cooking together in the kitchen intergenerationally, and how recipes are both a written and oral history of food, based in family and relationality. At the end of the workshop, we spread the wild

blueberry jam on the fresh luskinikn with butter, and children shared their stories of cooking with their aunts in the kitchen. The girl children involved impressed us with their cooking skills and knowledge of Mi'kmaw foods. In fact, Kara's teenage cousin who made the luskinikn for us during the first workshop was with us at this one, and she was proud to share that she had learned how to make it from baking it together with her grandmother.

These workshops were largely informal and based on when children were available and interested, and when other events were not happening in the community. We had difficulty connecting with the parents/guardians of children prior to the workshops, as the Land2Lab Project was a new project in the community and was still in the process of developing relationships with adult and Elder community members and this impacted recruitment for the study. So, we did not do a sharing circle following these workshops that would have helped inform this study. Discussion was still had during the workshop that prompted stories from children that showed understanding of Mi'kmaw foods and culture. In mid- November 2021, there was a second wave of COVID-19 which halted our in-person workshops again.

Online Attempts & Land2Lab Expansion

On November 27th, 2020, we tried to organize an online sharing circle with child participants who attended the three in-person sessions. Unfortunately, our online approach was not successful, and no children signed up to join us, though, understandable in the context of COVID-19 and with children spending most of their days online learning in a school context, and perhaps parental hesitation with us being a new research project in the community, or not knowing about the online event. An important aspect of community-based research is developing relationships with community members, and at this point in

time the Land2Lab Project had only connected with children who spent time at the Paqtnkek Community Centre on Friday nights. Kara knew these children from her community yet did not have the contact information for some parents/guardians or was not able to reach them. If we had been able to connect with the parents and guardians of the children involved during our three in-person workshops, this might have been different.

Additionally, children may not have wanted to join us online for a sharing circle. However, we were happy with how we were able to engage with children in the kitchen and integrate both Western and Indigenous knowledges about food. The Land2Lab team was hopeful in that continuing to develop relationships in community would provide us with the opportunity to implement the research methods originally proposed for this study; an intergenerational land-based workshop, followed by cooking in the kitchen together, and a sharing circle led by an Elder to discuss children's learnings and perspectives.

Despite challenges of connecting with children, parents and guardians, and Knowledge Keepers throughout COVID-19, the CMM's Department of Natural Resources recognized the success of the Land2Lab project in Paqtnkek and wanted programming for all communities across the mainland. The fact that we were attempting to engage children both on the land and online in Indigenous food sovereignty was a strength that the CMM acknowledged. In January 2021, through the Mitacs Accelerate Grant and internship, the Land2Lab team partnered with the CMM where the Project was written into CMM deliverables and objectives to deliver workshops for the next three years, along with expanding this study to all eight Mainland Mi'kmaw communities. Additionally, while I was working as a Mitacs Accelerate Intern with the CMM and StFX from June 2021 to January 2022, I developed an online toolkit that would help support the facilitation and

continuation of Land2Lab workshops, along with my other research and program development duties.

With the expansion of the project and now the third wave of COVID-19 underway, our vision was to provide an online spring/summer activity available to all mainland Mi'kmaw communities through the CMM (recruitment poster attached in Appendix B), which we called "A Foraging Photography Challenge" (attached in Appendix C). The aim of this activity was to encourage children to go outside and search for Mi'kmaw foods and bio-indicators in their communities with the iNaturalist App, along with other activities such as providing a drawing of the weather outside, or a photo of a Mi'kmaw meal cooked with their family. The worksheets also had a tea recipe that children could make, and Mi'kmaq words for foods and bio-indicators were included. Children who sent in photos of their findings would be entered in for a prize and would be invited to be involved in the research study and share their photos and perspectives during an online sharing circle. All attendees would receive a gift card for their time involved.

This online approach, however, was also not successful. We did not receive any submissions or interest from community, again for many possible reasons. We realized early in the project that gathering children online would be difficult and we had no success recruiting for online activities or sharing circles, even with the support of CMM advertising. Due to the development of an online toolkit, however, we were able to include the photography challenge there for future use. This experience has led me to believe that online technology may be more useful for sharing Indigenous voices, culture, knowledges and for activism purposes rather than for recruiting and facilitating research. I believe, however, this is influenced by community connections, relationships, and the following

and trust that organizations and program coordinators have developed. Building relationships is an important step towards successful program implementation, doing research, and sharing knowledge online and in-person.

Making Progress with Community Relationships

Our success prior to the expansion of the project in Paqtnkek was largely due to Kara's connections and relationships with the children and knowing that they often played basketball and other games at the community centre on Friday nights. We did not yet have this information for other communities across the mainland, and we struggled to implement workshops in other communities. Supporting Kara in developing relationships to support the expansion of the Land2Lab Project was a priority, along with recognizing the need to network within the CMM as there are many opportunities for collaboration in child programming within their departments. Additionally, I was unable to work at the CMM office due to COVID-19 restrictions which did limit my ability to make connections within CMM. In mid-June 2021, social distancing protocols lessened, and we shifted to prioritizing connecting with children and Elders in person with our workshops.

Understanding the need for relationship building and realizing that online approaches alone were not going to be successful in reaching children in the way we had imagined, we focused on connecting with Mi'kmaq Knowledge Keepers and Elders who could help support us in leading a land-based workshop with children. With this, we also decided to use online technology to connect with educators, health professionals, and community partners to help teach them about Indigenous food sovereignty and how to lead a Land2Lab workshop so that they can in turn teach the children that they work with. This approach has been successful, and we received positive feedback from nine toolkit

reviewers, which included schoolteachers, Dietitians, an Indigenous health researcher, CMM employees, and community partners. This shows that as public health protocols changed over time, we were able to blend our approaches to include both online and in-person components guided by Two-Eyed Seeing.

In June 2021, Kara was able to connect with Gail Marshall, a member of Paqtnkek First Nation and Knowledge Keeper who has a wealth of knowledge surrounding medicinal plants and gardening. Gail joined us for a Zoom call where she shared her personal interest in Indigenous food sovereignty, and her inspiring story of healing with Mi'kmaw knowledges and medicines. We discussed ways that Gail could share both her knowledge and passion with children in her community.

When social distancing protocols lessened in June 2021, the Connecting Math to Our Communities math camp reached out to Ann to book the StFX Nutrition Labs for a day-long event for Mi'kmaq children centered around connecting math to their daily lives, and in this case, connecting math to food. We realized that we had many of the same goals and that we could mutually support each other. The math camp could help us with recruiting children for the study, and we could help organize and facilitate the workshops on the day of the event. We partnered with the Connecting Math to our Communities camp along with Gail, and over the next month we supported each other in teaching children about food and all of its interconnections. To connect with children, prior to the daylong workshop at StFX, Kara, Gail, myself, and Claire, a CMM student intern assisting Kara, joined the math camp at Paqtnkek to lead twelve children in a nature walk where Gail helped them identify plants and their medicinal uses. This relationship with math camp has also supported the toolkit where we have sought to align our land-based intergenerational

workshops alongside Nova Scotia school curriculum to support teachers in schools, and education students at StFX helped review and provide feedback.

To connect with children, prior to the daylong workshop at StFX, Kara, Gail, myself, and Claire, a CMM student intern assisting Kara, joined the math camp at Paqtnkek to lead twelve children in a nature walk where Gail helped them identify plants and their medicinal uses. After the walk, Gail led the three of us to a forested area where hazelnuts, serviceberries and currants grew in abundance, along with many other medicinal plants. She discussed how the land looks different now than it used to, and yet, her community continues to have an abundance of naturally occurring food that could be utilized – if only people knew where to look. She then took us to a wild strawberry patch, where elderberries, raspberries and bunchberries also grew along the perimeter. Gail was extremely proud of the food that grew there and talked about how she wished more people in her community were involved in food harvesting. Community members like Gail are upholding Mi'kmaw food knowledge, and just need the opportunity and safe environment to share their knowledge with others.

Appendix B: Recruitment Poster

Kwilmnej Mijpjewe'l aq Sqaliaqnn
(Lets Search for Food and Plants)

A Foraging Photography Challenge

GET ON THE LAND, TAKE PHOTOS OF NATURE, LEARN FROM ELDERS!

Join CMM in collecting photos of bio-indicators and Traditional Foods in your community. Virtual sharing circle to follow on July 6th.

HOW MANY BIO-INDICATORS WILL YOU FIND?

FOR YOUTH AGED 12-16

Contact Kara Pictou to register and for more information:
kara@cmmns-denr.ca (902) 890-0794

- INFORMATION SESSION JUNE 22ND -
- PRIZE GIVEAWAYS -

Appendix C: Foraging Photography Challenge

A FORAGING PHOTOGRAPHY CHALLENGE


Instructions

As Spring and Summer roll around, it's the perfect time to get outside and observe what beautiful Mother Nature has to offer!

To Complete the Challenge:

- Use the info-sheets to keep track of your observations and activities. Take pictures of as many plants, insects, birds and animals in your community that you can find. Try making art and a traditional recipe with your family.
- Submit your photos of the bio-indicators and Traditional Foods you found, along with a photo of your art work and/or yummy food by August 23rd. By submitting your photos, you will be entered in for a grand prize!
- Join us at the end of August for a virtual sharing circle where we will be showcasing everyone's nature observations and experiences while on the land. A prize will be given to all participants who attend. The date is tentatively set for August 30th, stay tuned!

Email Kara by August 23rd to submit your photos: kara@cmmns-denr.ca

Remember, safety first! Do the challenge with a family member or friend, stay away from running water, stay close to home, and check for ticks  Do not eat any unknown plants



Name: _____

A FORAGING PHOTOGRAPHY CHALLENGE



Take photos of as many Traditional Foods as you can!

An Offering

Make an offering to the Creator before/after harvesting. Use tobacco, water, or other offerings you may have to give thanks to all of your relations.



Atuomkomin Strawberry



Te'sipka'qsiq Red Clover



Atu'tuej Squirrel



Paqo'si Seaweed



Jikjawiknejewimusi'l Rose hips



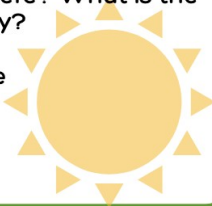
Take photos of your art work!

Talikiskik?

What is the weather like?

Look around and observe your surroundings. How has your backyard changed since Winter when snow was here? What is the temperature outside today?

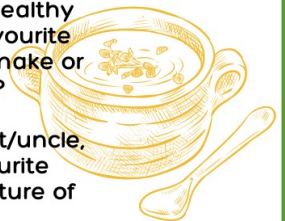
Draw or illustrate what the weather looks like in your yard today, or your own nature inspired art-work!



Traditional Recipe

Traditional Foods are an important part of a healthy diet. What is your favourite traditional recipe to make or eat with your family?

With your kiju or aunt/uncle, help make your favourite recipe and take a picture of the yummy results!



Worksheets adapted from Nature Conservancy of Canada

Name: _____

A FORAGING PHOTOGRAPHY CHALLENGE



Take photos of as many bio-indicators as you can!

Bio-indicators are plants and animals that help us learn more about the health of the environment and how it's changing

Jipjajek
Robin



Jijajek
Frog/spring peeper



Ma'susi
Fern



Mikjik
Turtle



Miti'ji'
Sapling



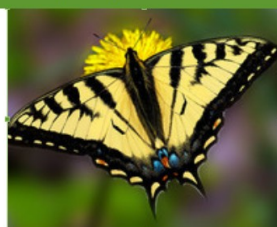
Atoqwa'su
Trout



Sna'skwl
Cattails



Enkejit / Mimikej
Caterpillar/Butterfly



Kitpu
Bald Eagle



Worksheets adapted from Nature Conservancy of Canada

Mi'kmaw Language Guide

Mi'kmaw Word:

Trout	Atoqwa'su
Strawberry	Atuomkomin
Squirrel	Atu'tuej
Caterpillar	Enkejit
Frog/Spring Peeper	Jijawejk
Robin	Jipjawejk
Rose Hips	Jikjawiknejewimusi'l
Eagle	Kitpu
Butterfly	Mimikej
Sapling	Miti'ji'
Fern	Ma'susi
Turtle	Mikjikj
Seaweed	Paqo'si
Cattails	Sna'ski
Red Clover	Te'sipka'qsik

How to Pronounce:

Ah-doh-whaa-sue
 Ah-dew-ohm-go-min
 Ah-dew-dew-edge
 En-gay-jit
 Cheeh-aw-edge-g
 Jip-jah-wedge-g
 Jig-jah-wig-nedge-ew-ee-moose-ee
 Git-boo
 Me-me-kedge
 Me-dee-cheech
 Mah-sue-see
 Mick-jig-ch
 Bah-hoe-see
 Sen-ahh-skill
 Day-sip-gah-sick



Find other Spring and Summer species not on this list?
 Take their picture and try to include their Mi'kmaw name





Red Clover Tea

Have you ever tried Red Clover Tea before?
Try making some with your Kiju or Aunt and Uncle!

INGREDIENTS:

- 12 fresh, clean clover flowers, can include stem and leaves
- 2 cups water
- Optional: Berries, squeeze of lime, sweetener

INSTRUCTIONS:

1. Rinse your clover well in water.
2. Place water in a pot and bring to a boil. Once the water starts to boil, remove it from heat and let the water cool for 10 minutes.
3. Place the red clover flowers in water and let steep for at least 30 minutes. For a stronger flavour and more nutrients allow to sit for 1-2 hours.
4. Strain the clover tea and serve hot or cold.
5. You can dilute your tea with more water if the flavour is too strong, or you can add lime juice, a tsp of honey, or a handful of frozen berries.

Recipe adapted from <https://www.ediblewildfood.com/red-clover-ice-tea.aspx>

Clover is one of the most abundant wild plants we can find in our local ecosystems, and it is packed with lots of vitamins and minerals that help keep our bodies healthy!

*Pick clover in areas free from pet droppings and pesticides

How was your tea? Take a photo and share 



Appendix D: Recruitment Script

“Hello, my name is ____, and I am the _____. I am going to introduce a research study that is being conducted by Dr. Ann Fox and Renee Bujold and CMM. You will all be invited to participate in this research study.

Renee is a master’s student studying health promotion at Dalhousie University. She has been helping with the Land2Lab project activities, but she will also be collecting data for her master’s thesis. Renee is working alongside her supervisors, Dr. Ann Fox and Dr. Debbie Martin to explore your perspectives while participating in the Land2Lab project.

Due to COVID-19 there have been some changes to the Land2Lab project, and we’ve had to move some aspects of the project online. Renee’s research will focus on the experiences and perspectives of you who have participated in the Land2Lab project. More specifically, she hopes to determine how the activities of the Land2Lab project, and how land-based and online learning styles have shaped your understanding of and engagement with Indigenous food sovereignty. While Indigenous food sovereignty can seem complicated, it can be thought of as the process of learning about our food, where it comes from, as well as some of the issues surrounding our food. Food is so important because it is reliant on the health of our land, and we rely on food to feed our bodies. This means that the health of the land, air, and water impacts the health of our food and our bodies! Our food is what nourishes us and all of our relations, and Indigenous food sovereignty allows us to acknowledge that our health is reliant on the health of the Earth. Conducting this study is important because your perspectives will show us how you all would like to learn about Indigenous knowledges and foodways.

If you are interested in participating in this study, it will consist of one sharing circle. This sharing circle will last about 1 and a half hours and will be virtual and held over Zoom so that you will be able to access from your own home and maintain safe social distancing regulations. An Elder or Knowledge Keeper will lead the virtual sharing circle, and you will be asked to share your thoughts after participating in a land-based scavenger hunt. If you are interested in participating in this research study or you have any questions, please reach out to me as soon as possible. Thank you!

Appendix E: Invitation to Participate Guide

Invitation to Participate Guide:

1. Introduce self and role
2. Ask for permission to record the call for our records if gathering consent over the phone.
 - We can provide a written copy via email or gather consent in person if this is preferred.
3. Introduce the project and study:
 - Your child is invited to participate in a workshop where we will be learning from an Elder/Knowledge Holder about seasonal Mi'kmaw foods, climate, and sustainability, along with its study called "Sharing Intergenerational Food Stories to Engage Children in Indigenous Food Sovereignty"
 - This project is dedicated to sharing Mi'kmaw knowledge about the land and foods, to engage children with Elders, and to celebrate Mi'kmaw culture. We are planning an in-person workshop (date/time) in (location), followed by an audio-recorded sharing circle where we will be discussing land-based activities, Mi'kmaw foods, and what children would like to see for future programming.
 - This study will help inform other programming that we have planned for the next 1-3 years within the CMM.
4. Your child's participation in the project is completely voluntary.
5. They can withdraw from the project and sharing circle at any time before or during the activity.
 - Your child may attend the workshop without taking part in the sharing circle with no negative consequences.
 - Your child has the right for the audio-recording of the sharing circle to be stopped at any point upon request.
 - They have the right to refuse to answer any questions/contribute to discussion without having to end their involvement in the research project.
6. Benefits to participating in the study include the opportunity to give input that can help plan other workshops and programs that are meaningful to your child.

- Your child will have the opportunity to learn from an Elder/Knowledge holder, explore their thoughts from the project activities, and share their experience with their community.
 - There will also be a small honorarium for those who choose to participate in this study such as a \$20 gift card.
 - All children who participate in the workshop activity will be entered in to win Camping gear – this is not associated with the study.
7. While we do not anticipate any harms associated with this study, emotional reactions to the loss of or efforts to preserve Mi'kmaq food practices may arise.
- If this happens, your child is free to decline answering the question or engaging in the discussion. If your child requests emotional supports during the study, we will aim to support and direct them to appropriate services within the community.
 - There are no other known harms associated with your child's participation in this research. However, there may be harms that we don't yet know about.
8. Your child's name will be removed from the audio recording and transcripts so they will not be identified. Measures will be taken to ensure that all data collected during the study remains confidential.
- We will not disclose any information about your child's participation except as required by law or our professional obligations.
9. The results of the study will be owned by the Confederacy of Mainland Mi'kmaq, your child, fellow participants, and community. A report will be given to the CMM, you, and your community. If you or your community would like access to the de-identified data you may contact the CMM or the lead researcher. The results of the study may be shared at conferences, within peer-reviewed journals, and within a master's dissertation.

To obtain verbal consent: (Make sure they state their name and their child's name).

Do you agree that:

I have received a copy of the Invitation to Participate for the research project titled "Exploring the Impact of a Traditional Foods Pilot Program for Mi'kmaq Children," it has been explained to me, and I have had all questions that I may have had answered.

I give permission for Land2Lab project to use any photographs developed during the study. They are able to use the photographs for project related reports, exhibits and presentations.

I agree to allow (name of child) to participate in this research project, understanding that I am doing so voluntarily, that confidentiality will be maintained, and that I have the right to withdraw my child from the study at any point.

(Also provide them with your contact information so they can contact you if they need)

Appendix F: Invitation to Parents/Guardians to Participate

Title of Research: Sharing Intergenerational Food Stories to Engage Children in Indigenous Food Sovereignty

Name of Researcher(s): Renee Bujold, Dr. Ann Fox, Dr. Debbie Martin

Invitation to Participate

Your child is invited to participate in a study entitled “Exploring the Impact of a Traditional Foods Pilot Program for Mi’kmaq Children” across the Mainland. You may indicate your consent for your child to participate by signing the consent form or confirming verbally during the beginning of each sharing circle.

Purpose and Description of the Research

As a participant in the Land2Lab Project, your child is invited to take part in a sharing circle at the end of each of the 3 workshop sessions, as well as an optional creative activity at the end of the project. The purpose of the sharing circles is to share ideas about what is being learned during the workshops, how the children feel about what they are learning and what they would like to see happen in other workshops and programs. The creative activity will allow children to further explore and share their ideas. This will help improve the workshops and make them more meaningful for them and for other children.

What Will be Required of Participants, Including the Time Commitment

At the end of each workshop, your child will be invited to participate in a sharing circle. The sharing circles may be held face to face or virtually depending on health and safety conditions at the time. Each sharing circle will be led by an Elder or program leader from the community and will last about an hour and a half. Participants will be free to share their ideas, thoughts and questions about what they are learning and would like to learn in the workshops. Your child may attend as few or many of the sharing circles as they wish.

In addition to the workshops and sharing circles, your child will be invited to attend a creative group activity. Children will help determine the creative activity that they are most interested, such as a photo collage, painting, or video creation. This creative activity will allow children to express their ideas and to think more about the Land2Lab project and the teachings from the sharing circles.

Participation is Voluntary; Right to Withdraw Without Negative Consequences

Your child’s participation is completely voluntary. They may withdraw at any time. Your child may leave during a sharing circle. If they do, their contributions cannot be removed from the audio-recording and will remain part of the study material. Material from previous sharing circles will also remain part of the study data.

You and your child have the right to refuse their participation in the study. A decision to participate is not binding. Your child may attend the workshops without taking part in the sharing circle with no negative consequences. Your child may participate in as many or few sharing circles as they wish. Your child will be given the opportunity to decide whether or not to participate at the end of every workshop and at the beginning of every sharing circle. They may signal their intent to not participate by leaving prior to the sharing circle. Your child has the right for the taping to be stopped at any point upon request. They have the right to refuse to answer any questions without having to end their involvement in the research project. Likewise, your child may participate in the creative activity workshop and then decide at any time to remove yourself from the activity. The end result of the creative activity will not be owned by the researchers. Instead, it will be under the ownership the Confederacy of Mainland Mi'kmaq.

Permission of Other Bodies

This project has received approval from the Mi'kmaw Ethics Watch and Dalhousie Research Ethics Board.

With Respect to Potential Benefits and Potential Harms

Benefits

Benefits to participating in the sharing include the opportunity to give input that can help plan other workshops and programs that are meaningful to your child. Through the creative activity and story creation process your child will have the opportunity to explore their thoughts from the project activities and sharing circles in order to develop a story about their experience that they can share with their community.

Harms

Some of the sessions might cause emotional reactions to the loss of or efforts to preserve Traditional food practices. Some reflective questions may prompt critical thinking and cause discomfort. If this happens, your child is free to decline answering the question or engaging in the discussion. If your child requests emotional supports during the study, we will aim to support and direct them to appropriate services within the community. There are no other known harms associated with your child's participation in this research. However, there may be harms that we don't yet know about.

Compensation / Reimbursement

There will be a small honorarium for those who choose to participate in this study such as a \$20 gift card.

Confidentiality and Anonymity

Only the researchers, other sharing circle participants, and research assistant will know that your child participated in the sharing circle. All participants' names will be removed from the transcripts. There is no guarantee that what is said in the sharing circle remains confidential. All of those participating will be asked to maintain confidentiality by not

repeating issues discussed outside of the circle. Measures will be taken to ensure that all data collected during the study remains confidential.

For ensuring physical protection of the data, we will keep the data in password protected computer directories, and de-identify the data to reduce the possibility of being able to trace the data to a specific individual. In cases where emails are sent, the researcher will ensure that the emails of the respondents or the content within the emails are not revealed. In case of any breach to data safety or anonymity, participants will be informed immediately with all the details so that they can decide on actions to be taken.

We will not disclose any information about your child's participation except as required by law or our professional obligations. If your child informs us about abuse or neglect of a child [an adult in need of protection] we are required by law to contact authorities. If we notice that your child is at an immediate risk of harming themselves or other people, we are required to seek assistance.

Once the study is completed, all de-identified data will be given back and will be owned by the Confederacy of Mainland Mi'kmaq. The data will be analyzed and written into a report that will be given to the CMM. If you or your community would like access to the de-identified data you may contact the CMM or the lead researcher. The results of the study may be shared at conferences, within peer-reviewed journals, and within a master's dissertation.

Release of Data

- "I give permission for release of the data to the public domain within the confidentiality guidelines outlined above, including use of the data in written reports and in the context of academic conferences."
- "I realize that my name will not appear in any report of this study"
- "I understand that I shall not be identified as the source of any quotations."

Miscellaneous

Audio-recordings will be destroyed following transcription. Transcripts will be kept for 5 years following completion of the final study report.

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Appendix G: Invitation to Child Participants

Title of Research: Sharing Intergenerational Food Stories to Engage Children in Indigenous Food Sovereignty

Name of Researcher(s): Renee Bujold, Dr. Ann Fox, Dr. Debbie Martin

Invitation to Participate

You are invited to participate in a study entitled “Exploring the Impact of a Traditional Foods Pilot Program for Mi’kmaq Children” across the Mainland. You may indicate your consent to participate by signing the consent form or verbally at the beginning of the sharing circle.

Purpose and Description of the Research

As a participant in the Land2Lab program on Traditional Foods, you are invited to take part in a sharing circle at the end of each of the 3 workshop sessions, as well as an optional creative activity at the end of the project. The purpose of the sharing circles is to share ideas about what is being learned during the workshops, how you feel about what you have learned and what you would like to see happen in other workshops and programs. The creative activity will allow you to further explore and share your ideas. This will help improve the workshops and make them more meaningful for you and for other children.

What Will be Required of Participants, Including the Time Commitment

At the end of each workshop, you will be invited to participate in a sharing circle. The sharing circles may be held face to face or virtually depending on health and safety conditions at the time. Each sharing circle will be led by an Elder or program leader from the community and will last about an hour and a half. You will be free to share your ideas, thoughts and questions about what you have learned and would like to learn in the workshops. You may attend as few or as many of the sharing circles as you wish.

In addition to the workshops and sharing circles, you will be invited to attend a creative group activity. The group will help determine the creative activity together depending on what you all are most interested in, such as a photo collage, painting, or video creation. This creative activity will allow for you to express your perspectives in a different way and to think more about the Land2Lab project and the teachings from the sharing circles.

Participation is Voluntary; Right to Withdraw Without Negative Consequences

Your participation is completely voluntary. You may withdraw at any time. You may leave during a sharing circle. If you do, your contributions cannot be removed from the audio-recording and will remain part of the study material. Material from previous sharing circles will also remain part of the study data.

You have the right to refuse their participation in the study. A decision to participate is not binding. You may attend the workshops without taking part in the sharing circle with no negative consequences. You may participate in as many or few sharing circles as they wish. You will be given the opportunity to decide whether or not to participate at the end of every workshop and at the beginning of every sharing circle. You may signal your intent to not participate by leaving prior to the sharing circle. You have the right for the taping to be stopped at any point upon request. You have the right to refuse to answer any questions without having to end their involvement in the research project. Likewise, you may participate in the creative activity workshop and then decide at any time to remove yourself from the activity. The end result of the creative activity will not be owned by the researchers. Instead, it will be under the ownership of the Confederacy of Mainland Mi'kmaq.

Permission of Other Bodies

This project has also received approval from the Mi'kmaq Ethics Watch and Dalhousie Research Ethics Board.

With Respect to Potential Benefits and Potential Harms

Benefits

Benefits to participating in the sharing include the opportunity to give input that can help plan other workshops and programs that are meaningful to you. Through the creative activity and story creation process you will have the opportunity to explore your thoughts from the project activities and sharing circles in order to develop a story about their experience that you can share with their community if you would like.

Harms

Some of the sessions might cause emotional reactions to the loss of or efforts to preserve Traditional food practices. Some reflective questions may prompt critical thinking and cause discomfort. If this happens, you are free to decline answering the question or engaging in the discussion. If you request emotional supports during the study, we will aim to support and direct you to appropriate services within your community. There are no other known harms associated with your participation in this research. However, there may be harms that we do not yet know about.

Compensation / Reimbursement

There will be a small honorarium for those who choose to participate in this study such as a \$20 gift card.

Confidentiality and Anonymity

Only the researchers, other sharing circle participants, and research assistant will know that you participated in the sharing circle. All participants' names will be removed from the

transcripts. There is no guarantee that what is said in the sharing circle remains confidential, however, as sharing circles may occur virtually in participants homes. All of those participating will be asked to maintain confidentiality by not repeating issues discussed, outside of the circle. Measures will be taken to ensure that all data collected during the study remains confidential.

For ensuring physical protection of the data, we will keep the data in password protected computer directories, and de-identify the data to reduce the possibility of being able to trace the data to a specific individual. In cases where emails are sent, the researcher will ensure that the emails of the respondents or the content within the emails are not revealed. In case of any breach to data safety or anonymity, participants will be informed immediately with all the details so that they can decide on actions to be taken.

We will not disclose any information about your participation except as required by law or our professional obligations. If you inform us about abuse or neglect, we are required by law to contact authorities. If we notice that you are at an immediate risk of harming yourself or other people, we are required to seek assistance.

Once the study is completed, all de-identified data will be given back and owned by the Confederacy of Mainland Mi'kmaq. The data will be analyzed and written into a report that will be given to the CMM, you, and your community. If you or your community would like access to the de-identified data you may contact the CMM or the lead researcher. The results of the study may be shared at conferences, within peer-reviewed journals, and within a master's dissertation.

Release of Data

- “I give permission for release of the data to the public domain within the confidentiality guidelines outlined above, including use of the data in written reports and in the context of academic conferences.”
- “I realize that my name will not appear in any report of this study”
- “I understand that I shall not be identified as the source of any quotations.”

Miscellaneous

Audio-recordings will be destroyed following transcription. Transcripts will be kept for 5 years following completion of the final study report.

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Appendix H: Consent form for Parents and Legal Guardians

I have received a copy of the Invitation to Participate for the research project titled **“Sharing Intergenerational Food Stories to Engage Children in Indigenous Food Sovereignty,”** have had an opportunity to read the information provided or it has been explained to me and have had all questions that I may have had answered.

I give permission for Land2Lab project to use any photographs developed during the study. They are able to use the photographs for project related reports, exhibits and presentations. I agree to allow (name of child) to participate in this research project, understanding that I am doing so voluntarily, that confidentiality will be maintained, and that I have the right to withdraw my child from the study at any point using the means outlined in the Invitation to Participate.

Signature of Parent or legal guardian:

Date:

Contact information

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Appendix I: Consent form for Participants 16 years and Older

I have received a copy of the Invitation to Participate for the research project titled **“Sharing Intergenerational Food Stories to Engage Children in Indigenous Food Sovereignty,”** have had an opportunity to read the information provided or it has been explained to me and have had all questions that I may have had answered.

I give permission for Land2Lab project to use any photographs developed during the study. They are able to use the photographs for project related reports, exhibits and presentations.

I agree to participate in this research project, understanding that I am doing so voluntarily, that confidentiality will be maintained, and that I have the right to withdraw from the study at any point using the means outlined in the Invitation to Participate.

Signature of Participant:

Date:

Contact information:

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Appendix J: Child Assent Form

I have received a copy of the Invitation to Participate for the research project titled **“Sharing Intergenerational Food Stories to Engage Children in Indigenous Food Sovereignty,”** have had an opportunity to read the information provided or it has been explained to me and have had all questions that I may have had answered.

I give permission for Land2Lab project to use any photographs developed during the study. They are able to use the photographs for project related reports, exhibits and presentations. I agree to participate in this research project, understanding that I am doing so voluntarily, that confidentiality will be maintained, and that I have the right to withdraw from the study at any point using the means outlined in the Invitation to Participate.

Signature:

Date:

Contact information:

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Appendix K: Invitation for Elder/Knowledge Holder Participants

Title of Research: Sharing Intergenerational Food Stories to Engage Children in Indigenous Food Sovereignty

Name of Researcher(s): Renee Bujold, Dr. Ann Fox, Dr. Debbie Martin

Invitation to Participate

You are invited to participate in a study entitled “Exploring the Impact of a Traditional Foods Pilot Program for Mi’kmaq Children.” You may indicate your consent to participate by signing the consent form or verbally at the beginning of the sharing circle.

Purpose and Description of the Research

As an Elder or Knowledge Holder in the Land2Lab program on Traditional Foods, you are invited to take part in leading a sharing circle at the end of the workshop session(s) you are involved with. The purpose of the sharing circle is for children participants share ideas about what is being learned during the workshops surrounding Traditional foods, how they feel about what is happening in the workshops and what they would like to see happen in other workshops and programs. Additional to this, we encourage you to share your personal stories and knowledge about Traditional Foods with children. This will help improve the workshops and make them more meaningful.

What Will be Required of Participants, Including the Time Commitment

You will be invited to a lead sharing circle with the children participants at the end of the workshops. The session will be audio-recorded and then transcribed into a written document. The researcher and research assistant will review the transcribed document to identify what is being learned, what can be improved and what other ideas are noted. You will also be invited to be involved in this analysis process to ensure that your perspectives are being shared accurately. All children participants’ names will be removed from the transcript. You will be able to indicate if you would like your name and/or quotes from the sharing circle attached to this study. The researcher and research assistant will only see the transcript. All transcripts will be stored on a password computer in encrypted files.

Participation is Voluntary; Right to Withdraw Without Negative Consequences

Your participation is completely voluntary. You may withdraw at any time during the leading of the sharing circle and analysis process. However, once the analysis is completed, you will no longer be able to retract your data and involvement in the study. You have the right to refuse to participate in the study. A decision to participate is not binding.

Permission of Other Bodies

This project has received approval from the Mi’kmaq Ethics Watch and Dalhousie Research Ethics Board.

With Respect to Potential Benefits and Potential Harms

Benefits

Benefits to participating in the sharing include the opportunity to give input that can help plan subsequent workshops and programs and encourage Mi'kmaq children to become involved in their Traditional Foodways by sharing your knowledge and stories.

Harms

Some of the sessions might elicit emotional reactions to the loss of or efforts to preserve Traditional food practices. There are no other known harms associated with participation in this research. However, there may be harms that we don't yet know about.

Confidentiality and Anonymity

Only the researchers, other attendees at the workshop, and research assistant will know that you participated in this study. All Elder and Knowledge Keeper participants' names will be removed from the transcripts unless they provide consent for having their names used.

Release of Data

- “I give permission for release of the data to the public domain within the confidentiality guidelines outlined above, including use of the data in written reports and in the context of academic conferences.”
- “I realize that my name will not appear in any report of this study unless I give explicit written permission.”
- “I understand that I shall not be identified as the source of any quotations unless I give explicit written permission.”

Miscellaneous

Audio-recordings will be destroyed following transcription. Transcripts will be kept for 5 years following completion of the final study report.

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Appendix L: Elders/Knowledge Keeper Oral Consent Form

I have received a copy of the Invitation to Participate for the research project titled **“Sharing Intergenerational Food Stories to Engage Children in Indigenous Food Sovereignty,”** have had an opportunity to read the information provided or it has been explained to me and have had all questions that I may have had answered. I agree to participate in this research project, understanding that I am doing so voluntarily, that confidentiality will be maintained, and that I have the right to withdraw from the study at any point using the means outlined in the Invitation to Participate.

Check boxes to provide consent:

- I give consent to having my name associated with this study
- I give consent to having my direct quotes used within this study
- I give consent to having my name associated with direct quotes within this study

Oral consent provided by:

Witnessed by:

Date:

Contact information:

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Appendix M: Group Interview/Sharing Circle Guide

Pre-ample: Before the sharing circle begins, the lead researcher and Dr. Ann Fox will seek informed consent from each participant by reviewing the informed consent form. The informed consent form will include the purpose and objectives of the research, what participants will be asked to do, possible benefits, risks and discomforts, how your information will be protected, withdrawing from the study, and how the results will be shared. The lead researcher will also take the time to briefly introduce herself as the researcher.

An Elder or Knowledge Keeper from within the Mainland will be facilitating the virtual/in-person sharing circles according to community protocol. The Elders/Knowledge keepers will be able to determine how they facilitate the sharing circles and how they introduce and discuss topics related to the Land2Lab project and associated study. Elders will be de-briefed about the purpose of the study so that they are able to facilitate the sharing circle in accordance with the purpose of the study. There will be discussion points, framed as questions, that the Elder/Knowledge keeper facilitating the sharing circle will be made aware of. Elders/Knowledge keepers will be encouraged to frame any of the discussion points as they see appropriate.

The following discussion points are as followed (aligning with the outcomes of the study:

- The Land2Lab projects bringing together land-based and online learning:
 - Can you tell me an example about something that you have learned during the Land2Lab project?
 - What did you like about the Land2Lab project?
 - Can you tell me an example of your favourite part, and/or your least favourite part?
 - Can you tell me how you would like to learn about food, the land, and health?
 - If you could imagine your perfect learning scenario, how would you describe it?
 - How would land-based and online learning fit into that?

- The Land2Lab project and understanding/becoming involved with Indigenous foodways:
 - If you were to tell your friends about what you have done during the Land2Lab project, how would you describe it?
 - Can you tell me one of the things that you think you will remember from the Land2lab project?
 - Can you tell me an example of something that you learned about food and the land during the project?
 - How do you think you will use this learning in the future, if at all?
- Etuaptmunk- Two-Eyed Seeing and learning about Indigenous food sovereignty:
 - Now that you have completed the Land2Lab project, which had both online and land-based activities, can you tell me about this experience?
 - Do you see the two as being useful together?

Throughout the sharing circle the lead investigator will be present and will be observing the sharing circle. At the end of the sharing circle if there are any main discussion points not addressed, she will pose one of the associated questions to the group. After this time, the Elder/Knowledge Keeper facilitating the sharing circle will have closing remarks and will end the sharing circle.