Special Issue on Indigenous Health
In Partnership with the
Atlantic Indigenous Mentorship Network

Cover Art by Angelina Heer. Read more about this special issue inside.

About the Cover and Special Issue

Supporting Student-led Indigenous Health Research

The Atlantic Indigenous Mentorship Network (Atlantic-IMN) is a regional network that offers mentorship, learning opportunities, and financial support to Indigenous students and early career researchers pursuing Indigenous health research and health professional programs. It is a collaboration among universities, communities and community-based organizations, and Indigenous governments across Nova Scotia, Prince Edward Island, New Brunswick, and Newfoundland and Labrador. The Atlantic-IMN supports Indigenous-led health research in the Atlantic region.

The Atlantic-IMN proposed a collaboration with HPJ to create a special issue highlighting student-led Indigenous health research. Recognizing that this partnership presented opportunities beyond simply publishing articles, together we developed and facilitated a series of workshops and mentorship initiatives to engage, support, and involve Indigenous student researchers in the academic writing, peer review, and publishing process.

Thank you to Atlantic-IMN members and colleagues who contributed to the planning and facilitation of the mentorship initiatives integrated into the special issue on Indigenous health:

- Editorial Team: Tara Pride, Dr. Jenny Rand, Katie Gloade, Christie Stilwell, Dr. Cathy Fournier, and the peer review mentors and mentees
- Writing for Academic Publication Workshop – Drs. Debbie Martin and L. Jane McMillan
- Abstract Writing Workshop – Dr. Anita Benoit
- Infographic Workshop – Dr. Kaitlin Roke
- Drop-in Writing Support Sessions – Tara Pride, Katie Gloade, and Christie Stilwell
- Mentor Reviewer facilitation – Tara Pride and Christie Stilwell

About the Artist

Angelina Heer
University of New Brunswick

About the artist: My name is Angelina Heer. I was born in Northern British Columbia. I am a member of Sucker Creek First Nation in Alberta. I am currently living as a guest in Wolastokuk. I am a fourth-year graduate student in the MEd Counselling Program at the University of New Brunswick. My thesis work focuses on a wholistic perspective on the journey of healing for my Indigenous brothers and sisters who are reintegrating back into community after incarceration.

Cover photo: I made these seal skin earrings in a workshop that I attended at the Labrador Institute which is situated in Happy Valley-Goose Bay, the traditional territory of the Innu and Inuit. For me, these earrings represent the delicate beauty of my first experience in Labrador. I am grateful for the Atlantic Indigenous Mentorship Network to have provided this opportunity to connect with Innu and Inuit culture. My heart has forever been touched. I appreciate that I can carry this experience in my heart.

Welcome from the Editors

We are so pleased to welcome readers to the fifth issue of the *Healthy Populations Journal* (HPJ), a special edition focusing on Indigenous Health and Health Equity. HPJ is a multi-faculty, student led, open access, peer-reviewed journal housed at HPI at Dalhousie University. As part of our mission to support and disseminate research which advances knowledge on population health research and global health equity, we partnered with the Atlantic Indigenous Mentorship Network (Atlantic-IMN) to create a special issue to facilitate a sharing of student-led Indigenous research taking place across Turtle Island. HPJ also aims to provide a welcoming and accessible academic publishing experience for student authors by reducing barriers to publishing, sharing, and accessing research. To build capacity for peer-reviewed publishing and reviewing Indigenous health research, we employed a mentorship model with a series of interactive scholarly writing and peer reviewing workshops led by Indigenous health researchers and allies, and paired students with experienced mentors to collaboratively to review the manuscripts submitted to this special issue.

The cover of this issue features original sealskin jewelry made by Angelina Heer, an Indigenous graduate student member of the Atlantic-IMN. This piece was created during the 2022 Atlantic-IMN Indigenous Graduate Student Gathering which took place last October in Happy Valley - Goose Bay, Labrador. This crafting session was facilitated by Melita Paul, who shared her expertise of sealskin crafting with students at the gathering.

Research articles in this issue explore wide-ranging and timely topics related to Indigenous Health including Simon et al.'s paper on Indigeneity, positionality, and relationality embedded in research approaches; Reid and Pride's discussion on colliding identities and the occupational therapy profession; Sullivan and McIlduff's narrative of community-based research project; and Bujold et al.'s study on engaging Mi'kmaq children in Indigenous food sovereignty through intergenerational food stories. This issue also features two literature reviews: *Exploring Collaborative Approaches to Indigenous Science Outreach Programs on Turtle Island: A Scoping Review* (Purdy et al.); and *Performing at the Intersections: A Literature Review of Applied Theatre, Climate Change, and the Impacts on Mental Health Among Indigenous Youth* (O'Grady et al.).

This special issue also contains three timely commentaries: *Culture as Treatment: A Pathway toward Indigenous Health Equity* (Asher BlackDeer); *Reconciliation Through Co-Learning: A Dietetic Intern's Journey with the Two-Eyed Seeing Program* (Churchill et al.); and *Ethical considerations in population health research with vulnerable communities and the added value of community-engaged methodology* (Tuggle & Crews).

This special issue would not be possible without support from the Healthy Populations Institute, Atlantic Indigenous Mentorship Network, and guidance from the HPJ Editorial Board Members. We hope you enjoy reading Volume 3, Issue 1.

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Culture as Treatment: A Pathway Toward Indigenous Health Equity

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Abstract

In this paper, we report on the process by which health equity has historically been conceptualized from a western lens, continuing to leave behind Native Nations. We present how the historical context impacts the present-day disparities experiences by Indigenous communities in the US. We conclude with examples of Indigenous culture as treatment as a pathway towards achieving Indigenous health equity.

Keywords: Culture; Indigenous knowledge; Indigenous health equity

The movement for health equity recognizes that not all people have the same opportunity to achieve optimal health outcomes; this is especially true for Indigenous health equity, as access is influenced by structural barriers built and sustained by colonization. Prior to colonial contact, American Indian and Alaska Native communities were among the healthiest populations, living in harmony with the land and one another (Echo-Hawk, 2019). Settler colonialism disrupted these traditional lifeways and has resulted in some of the worst health disparities in the United States today. Colonization exploited Indigenous lands and resources in order for settlers to gain wealth and power while making Native communities dependent upon state resources. Tribal institutions were outlawed, belief systems and traditional practices were criminalized, and Native people were imprisoned for attending powwows, praying, and even participating in traditional ceremonies (Steinman, 2016). Native children were taken from their homes and placed in Christian boarding schools with the ultimate goal of assimilation into settler culture (Steinman, 2016). Immense abuse took place at these schools, and Native children had their hair cut and were not permitted to speak in their Native languages. While not an exhaustive representation of settler colonialism, these demonstrate a portion of the systemic issues brought about by colonization. Systemic issues such as genocide, removal from homelands and traditional community structures, racism, poverty, and poor education all give rise to a myriad of health disparities.

Despite being the original inhabitants of this land, the American Indian and Alaska Native population experience some of the worst health disparities in the entire nation (Epsey et al., 2014; Warne & Lajimodiere, 2015). Indigenous communities experience disproportionate death rates from largely preventable causes such as infant mortality, diabetes, heart disease, and unintentional injuries (Warne & Lajimodiere, 2015). Further, according to the Centers for Disease Control and Prevention, American

Indian and Alaska Native communities have the lowest life expectancy compared with other races and ethnicities within the United States (Arias et al., 2021). In addition to physical health disparities, Indigenous mental health is in a dire state as well. American Indian and Alaska Native communities have the highest rate of suicide among all ethnic groups in the United States (Indian Health Service, 2018), and Native youth have a suicide rate 1.5 times higher than the general population, facing a higher risk for depression and substance use (Asher BlackDeer & Patterson Silver Wolf, 2020; Listug-Lunde et al., 2013). Addressing Indigenous physical and mental health disparities is in alignment with the UN Sustainable Development Goals of achieving good health and well-being at all ages and reducing inequalities by supporting the marginalized and disadvantaged.

Several policies have been proposed and enacted to remedy these health disparities, yet all have fallen short. The Snyder Act of 1921 authorized funds for the "relief of distress and conservation of health" in order to employ physicians to work with Native Nations within the United States. These federal health benefits for Indigenous populations are derived from a political relationship based on tribal sovereignty, not a race-based preference. The most prominent federal health benefit is the Indian Health Service (IHS), which is a comprehensive health service delivery system for more than two million American Indian and Alaska Native communities, with 45 hospitals, more than 600 facilities, and funding for 33 urban American Indian health organizations (IHS, 2020). However, the IHS has been historically underfunded and is difficult to access, and those who rely solely on the IHS often lack access to preventive care and early treatment of chronic diseases. These federal policies and programs continue to fail Indigenous communities.

Despite the Healthy People 2020 program defining health equity as the "attainment of the highest level of health for all people," Echo-Hawk (2019) reminds us that not all communities have the same opportunities to achieve said optimal health outcomes. Very few improvements have been seen in Native health outcomes, as the movement for health equity continues to be based on Western cultural norms. Many mental health interventions are based on Western white ways of knowing, emphasizing distress and dysfunction (Asher BlackDeer & Patterson Silver Wolf, 2020). Indigenous health equity must be grounded in traditional culture and ways of knowing and being. Even in the global health sphere, Indigenous scholars have made the call to address the elephant in the room, addressing how Indigenous Nations, cultures, languages, and spiritualities are sidelined (Jensen & Lopez-Carmen, 2022). This fundamental shift in Indigenous health equity recognizes that the answers lie within our own cultures, and it is up to us to improve health and well-being for our future generations (Echo-Hawk, 2019).

Indigenous health equity is embodied through the notion that culture is treatment. Although some Western and non-Western health professionals do not see the significance of culture, several Indigenous scholars have brought forward this movement of Indigenous culture as the ultimate treatment, demonstrating both our tribal sovereignty and self-determination (Barker et al., 2017; Brady, 1995; Fiedeldey-Van Dijk et al., 2017; Gone, 2013; Pomerville & Gone, 2019). Asher BlackDeer and Patterson Silver Wolf (2020) found that several successful mental health interventions for American Indian youth had key features of foundational traditional beliefs and practices for healing and well-being, such as Our Life (Goodkind et al., 2012) and Qungasvik (Allen et al., 2018). Hirchak et al. (2022) centred Indigenous culture in the integration of extended family traditions, traditional healing practices, and ceremonies to inform an opioid use disorder intervention. Yamane and Helm (2022) conducted a systematic review on Indigenous culture as health, finding four key modalities: (a) Indigenous ways of knowing, (b) Indigenous cultural practices, (c) place-based/sacred sites, and (d) Indigenous spirituality.

Ultimately, Indigenous culture as treatment is an ideal path forward in

recognizing tribal sovereignty and self-determination and achieving Indigenous health equity. These practices recognize and uplift the knowledge we have carried across generations, allowing us to address health disparities on our own terms while affirming our connection to culture. Indigenous culture as treatment addresses not only physical and mental health disparities but also accounts for structural issues of inequality and policy injustices, medical discrimination, marginalization, and exclusion. By recognizing and making space for Indigenous culture as a treatment that is integral to the pathway to Indigenous health equity, we Native Nations are healing ourselves in community.

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Ethical Considerations in Population Health Research With Vulnerable Communities and the Added Value of Community-Engaged Methodology

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Abstract

Working among vulnerable communities poses unique ethical challenges when conducting biocultural research. When communities face dire poverty and social injustice, simply observing and documenting stressors and related health outcomes may be considered exploitative by vulnerable and already overburdened residents. As biocultural researchers, our responsibility is to work toward solutions addressing differential impacts of social injustice. Here, we highlight work amongst the Comcaac, an Indigenous group native to Sonora, Mexico. Today, they experience significant resource insecurity secondary to historical marginalization and structural violence. Employing ethnographic methods (participant observation, focus groups, unstructured and semi-structured interviews), we investigated social and ecological stressors likely affecting members' health. First, we determined visible themes encompassing resource insecurity (e.g., water, food, power, medicine etc.) and struggles with poverty, racism, and associated feelings of injustice. Through deep engagement, we also discerned community members' frustrations with what they see as exploitative research – obtaining information but failing to work actively toward solutions or remain invested in participants' well-being. To begin addressing their most severe issues, we first documented substantial needs within the community, then obtained outside donors and organized a weekly food bank delivery of fresh foods. Now, these are distributed weekly by community leaders in culturally appropriate and locally embedded ways. Thereby, we were able to address an immediate need in a manner that will have continuing impact even while not actively conducting fieldwork. To have real meaning for our research communities, as biocultural researchers we must create ethically based long-term relationships to develop meaningful scholarship.

Keywords: food insecurity, water insecurity, ethnography, stress

Working among vulnerable communities poses unique ethical challenges when conducting population health research. When communities face dire poverty and social injustice, simply observing and documenting stressors and related health outcomes may be considered exploitative by vulnerable and already overburdened residents. In this commentary, we posit that our responsibility in research goes beyond documentation and

includes working toward solutions addressing differential impacts of social injustice. Here, we highlight work among the Comcáac, an Indigenous group native to Sonora, Mexico. Formerly a widespread semi-nomadic society, today Comcáac experience significant resource insecurity resulting from historical marginalization and structural violence. The Comcáac historically subsisted on and successfully managed the limited natural resources of the harsh coastal desert and sea environment, and their lifestyle, cultural traditions, and social organization are deeply entwined with their ecological knowledge and traditional environmental governance (Martínez-Tagüeña & Rentería-Valencia, 2020). Yet, while the Comcáac have shown resilience and adaptability in the face of racism and environmental adversity, overall community health has worsened significantly over time. The health transition following forced sedentarization and associated insecurity has resulted in increasing prevalence of chronic diseases, including prediabetes, diabetes, and obesity, which is common in other Indigenous populations in cultural transition (Esparza-Romero et al., 2015; Monti, 2003; Ravussin et al., 1994; Robles-Ordaz et al., 2018; Villela & Palinkas, 2000).

To investigate social and ecological stressors likely affecting community members' health, we employed traditional ethnographic methods including participant observation, focus groups, and structured and unstructured interviews. While interviews and focus groups gave us many insights into environmental and health-related stressors, extensive participant observation by living and working in the community gave us deeper insights into how the process of research can be a stressor in itself. First, we determined visible themes encompassing resource insecurity (e.g., water, food, power, medicine). A community health promoter reflected on the relationship between declining health and food insecurity: "Before, there were no illnesses because we ate natural things, but now … we have to eat many processed foods, not fruits and vegetables. We

have to travel far to find these, and they are very expensive" (translated from Spanish).

We also documented themes surrounding struggles with poverty, racism, and associated feelings of injustice. Here, a young mother remembers her birthing experience in the capital of Sonora, where most women must travel to give birth: "When I had my baby in the hospital in Hermosillo, I felt that I was treated differently for being Indigenous, and I wasn't getting the same care as the Mexican women there" (translated from Spanish).

However, after we had spent time living in the village and becoming trusted members of close-knit community social dynamics, they shared deeper reflections on the process of research conducted in the community in general. Many members described frustrations with what they see as exploitative research: obtaining information but failing to work actively toward solutions or remain invested in participants' well-being. Here, a 57-year-old Elder of the community remembers many researchers who have come to their community in the past: "Sometimes they come and take our knowledge and we get nothing in return. What is the benefit to us? How will it [the research] solve problems?" (translated from Spanish).

To mitigate the additional stressor of research among marginalized and historically exploited populations, we propose that using community-engaged methods that are solution-oriented and place participants' needs and values first is essential. Based on our ethnographic findings, we identified food and water insecurity and a lack of basic medicine as being severe, emergency-level stressors affecting the health of the community. We decided further documentation without action would be exploitative. Thus, we, in co-operation with the community and outside donors, organized a weekly delivery of fresh foods from the Banco de Alimentos de Hermosillo. Community volunteers surveyed families to determine need, while the researchers wrote to the food bank with preliminary ethnographic results and recommendations. The researchers also reached out to local businesses and connections to locate sponsors to support the

delivery to a remote area. The weekly deliveries are distributed to families in need at a gathering by local leaders. When present, the researchers also aid in distribution in a supporting role by organizing produce and packing food boxes. Additionally, in consultation with local medical staff, we collaborated with outside donors to address a shortage of basic medicine. As yet, we have not identified a temporary solution for water insecurity; however, due to recent attention by research and community activists, over the coming year the Sonoran government plans to improve potable water access.

While not a permanent solution to food insecurity among the Comcáac, preliminary ethnographic reports suggest this intervention has helped alleviate some of the severest issues in the short term. Of a convenience sample of 31 respondents surveyed, 24 (77%) said the weekly food bank delivery has significantly improved their household's food situation, with many noting that the food security of their children has greatly improved. A young mother of four children comments here: "Sometimes we don't have anything to eat, but when the food bank comes, we can save food. The kids and the whole family can eat" (translated from Spanish). Another young mother notes an increased consumption of fruits and vegetables in their family's diet: "When the food bank comes, we get fruits and vegetables. They have them sometimes in the abarrotes [corner stores] here, but we can't afford them. They're very expensive" (translated from Spanish).

We propose here that, in communities with previous traumatic experience of exploitative research, a "position of supplication," an ethnographic approach to asymmetrical power differentials between researchers and vulnerable participants (England, 1994; Pachego-Vega & Parizeau, 2018) may not be sufficient. The organization of food bank deliveries illustrates our research team's investment in community-based solutions for current problems, while residents maintain local control over this resource, as weekly distributions are organized by community leaders in culturally appropriate and locally-embedded ways. Thereby, we were able to address an immediate need in a manner that will have continuing impact even when we are not actively conducting fieldwork. These efforts resulted in greater inclusion of our research team in local activities and improved engagement of the residents with the research process. Active involvement of the community in the food bank project helped facilitate trust and our ability to involve members in continuing research and increased our acceptance in the community. This ultimately resulted in more community interest in reciprocity and participation in ongoing population health research than anticipated. To have real meaning for our research communities, as population health researchers we must create ethically based long-term relationships to develop meaningful scholarship.

Ethics Review
This research was approved by the Ohio State University Office of Responsible Research Practices, Study ID #2021E0645.

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Commentary

Reconciliation Through Co-Learning: A Dietetic Intern's Journey With the Two-Eyed Seeing Program

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Abstract

The Two-Eyed Seeing Program is a Mount Saint Vincent University-based program that partners with Indigenous and non-Indigenous communities and programs to promote, decolonize, and indigenize science, technology, engineering, and mathematics (STEM) through summer camps for Indigenous youth. In the summer of 2022, Megan Churchill, a settler, was the dietetic intern with the Two-Eyed Seeing Program. The commentary shares her experiences throughout the dietetic internship placement, including meeting with Elder Dr. Albert Marshall. Throughout Megan's dietetic internship placement, she noticed that Indigenous Knowledge and values are rarely incorporated into university STEM education; therefore, this commentary advocates for Indigenous studies and knowledge to be made mandatory in university settings.

Keywords: Dietetic Internship; Two-Eyed Seeing; Knowledge Sharing

Two-Eyed Seeing (Etuaptmumk) is a guiding principle for co-learning, co-creation, and communication, offered by Elders and academics from Unama'ki (Cape Breton, Nova Scotia) to Western scientists and partnering Indigenous Knowledge Keepers. The Two-Eyed Seeing Program is housed at Mount Saint Vincent University (MSVU) and includes partnerships with several communities and community-based programs in Nova Scotia or Mi'kma'ki, including Mi'kmaw Kina'matnewey, the Atlantic Indigenous Mentorship Network, the Maritime Museum of the Atlantic, and the Departments of Education in Pictou Landing First Nation, Acadia First Nation, and Sipekne'katik First Nation. Rather than focusing on attainment gaps, the Two-Eyed Seeing Program focuses on community-based curriculum development, implementation, and evaluation. This includes community-based and community-led programming and active efforts to decolonize and indigenize STEM offerings in Mi'kma'ki. We co-develop, co-implement, and co-evaluate hands-on activities and events for Mi'kmaw youth across Mi'kma'ki, with the aim of supporting learning, through two eyes, for Indigenous and non-Indigenous learners. For more on our program, click here.

This commentary explores the first author's experiences as a community-based

dietetic intern with the Two-Eyed Seeing Program, placed there through the Internship Education Program at MSVU's Department of Applied Human Nutrition. Starting with little previous knowledge of Indigenous world views, perspectives, and values, Megan Churchill, a non-Indigenous learner from Kjipuktuk (Halifax), will share details of and reflections on her journey and aim to continue this journey of unlearning and learning (to see). The commentary also serves to advocate for mandatory Indigenous studies at the university and practicum level in STEM (and health studies).

Background

In the summer of 2022 I had the privilege of interning with the Two-Eyed Seeing Program through the Internship Education Program at MSVU's Department of Applied Human Nutrition. The Two-Eyed Seeing Program develops, implements, and evaluates summer camps and events, aiming to promote, decolonize, and indigenize STEM education for Mi'kmaw youth across Mi'kma'ki (MSVU, n.d.). Indigenous people are continuously under-represented in STEM university programs and related occupations in Mi'kma'ki and across Turtle Island (North America; Canadian Millennium Scholarship Foundation, 2005; Statistics Canada, 2018). Many Indigenous people want to complete a post-secondary education (STEM-related or not); unfortunately, it is not always possible due to systemic racism, complicated by intersecting social and economic challenges and social determinants of health (Canadian Millennium Scholarship Foundation, 2005; Statistics Canada, 2018). Therefore, the Two-Eyed Seeing Program is working toward equity, diversity, inclusion, and accessibility in education by developing, implementing, and evaluating STEM outreach programs, a need clearly outlined in the Truth and Reconciliation Commission's (TRC) Calls to Action and the United Nations Declaration on the Rights of Indigenous People articles (TRC, 2015; United Nations General Assembly, 2007).

Overview of Two-Eyed Seeing

The Two-Eyed Seeing Program is guided by the principle of Etuaptmumk (Two-Eyed Seeing). Two-Eyed Seeing is a guiding principle coined by Mi'kmaw Elders Albert Marshall and Murdena Marshall and academic Dr. Cheryl Bartlett. Two-Eyed Seeing involves considering the world from two perspectives: an Indigenous perspective and a Western scientific perspective (Bartlett et al., 2012; MSVU, n.d.). Through this process, relationship building, co-learning, knowledge creation, cultural humility, and respect can transpire (Bartlett et al., 2012; MSVU, n.d.).

Reflection of Experience

As a settler from Kjipuktuk with admittedly very little knowledge of Indigenous world views, perspectives, and values, I was thrilled to be chosen for this dietetic internship placement. Along with being excited, I was also very nervous, as I knew I had a lot of learning and un-learning to do, which was insight that I would gain from being guided by Two-Eyed Seeing. One of my most prominent learnings during the internship was about the importance of the land in relation to Indigenous Knowledge Systems and Two-Eyed Seeing. An important aspect of Indigenous epistemology is understanding that we gain knowledge from interactions with the land through our mind, body, and spirit (Roher et al., 2021). The following events showcase my learnings, the importance of the land, and how Indigenous Knowledge can be incorporated into curriculum.

At the beginning of my placement, I had the honour of sitting down with Elder Dr. Albert Marshall to exchange knowledge over a cup of tea. He kindly welcomed me with open arms and an open heart. We spent time discussing the guiding principle of Two-Eyed Seeing and the importance of the land for the growth of food. More specifically, we spoke about a food web adapted from Cullen-Unsworth et al. (2010) and Latimer et al. (2018) by both the Two-Eyed Seeing Program, and MSVU's Breakfast and Beyond Program. The food web highlights the complexity of food and how it relates to the land.

The warm welcome was consistent during all my interactions with collaborators of the Two-Eyed Seeing Program, all of whom were exceptionally generous with their time, including Mi'kmaw Kina'matnewey, Pictou Landing First Nation, Acadia First Nation, and Sipekne'katik First Nation.

During my internship placement we held various events, including a boat-building event organized in collaboration with the Maritime Museum of the Atlantic. Youth from Sipekne'katik First Nation and Acadia First Nation built Bevin's skiff boats aboard the CSS Acadia at the Maritime Museum of the Atlantic over a four-day overnight camp (Maritime Museum of the Atlantic, n.d.). The boats were then brought to Kejimkujik National Park on National Indigenous Peoples Day to be launched in Kejimkujik Lake. The day was filled with drop-in cultural activities for attendees including petroglyph tours, plant identification, learning about bees, and a *luskinikn* (cultural Mi'kmaw bread) station where attendees could cook the bread over a fire. It was eye-opening to have an event at Kejimkujik National Park; we were able to learn about medicines, water, and the meaning behind foods such as luskinikn. Another event was held for National Indigenous History Month at MSVU in collaboration with the Breakfast and Beyond Program (Breakfast and Beyond Program, n.d.). This event was a food demonstration of blueberry cornmeal muffins and a discussion about traditional and cultural foods. During this event, I facilitated a space for co-learning and discussion about what food means to people, Mi'kmaw values associated with food, and relationships with food. Feedback for this event was very positive, and the attendees indicated they were grateful to have space and opportunity to speak about these topics. Feedback also included a request for the Two-Eyed Seeing Program to implement the event in-community, and therefore the team will be travelling to each of our three partnering communities to implement an adaptation of the event in-person for youth.

My final activity as a dietetic intern with the Two-Eyed Seeing Program was a presentation for community members, academics, and leadership team members. I presented a research project completed by myself and Mi'kmaw colleague Chelsey Purdy (past Two-Eyed Seeing Program Coordinator and member of Acadia First Nation), as well as a general overview of my dietetic internship placement. At the end of my presentation, we held a question period, where I was asked the following question: "How has your understanding of wellness, in terms of nutrition and health, changed since completing your dietetic internship placement with the Two-Eyed Seeing Program?" My answer was this: "During my nutrition undergraduate degree, it was taught that wellness is associated with food that you eat. For example, if you are eating fish, health and wellness comes from the nutrients that are in the fish, such as omega-3 fatty acids, protein, and vitamin D. However, I have learned that wellness is much more than the food you are eating. If we take the example of fish, the act of going to the lake or pond, catching the fish, filleting the fish, cooking the fish, and sharing the fish with the community is all part of wellness." The answer I gave was appreciated by all who attended the presentation and is best captured by an attendee's comment that they were "so happy to see the future of dietetics move in this direction." Now that I have completed my dietetic internship with the Two-Eyed Seeing Program, it is evident to me that nutrition and wellness is much more than the food and nutrients being consumed (Durie, 2004). However, nutrition degrees are very Westernized, and these perspectives are limited in teaching. I was in the fourth year of my nutrition degree, taking a medical nutrition therapy course, when I first heard a land acknowledgement incorporated into the course.

Indigenous Knowledge and Higher Education

To become a dietitian, dietetic students or trainees must attend an accredited university program, complete a dietetic internship, and complete and pass a licensing exam. The goal of each dietetic internship placement is to obtain a "C" or "competent" rating on each of the associated competencies. Partnership for Dietetic Education and Practice has announced

more Indigenous dietetic competencies as part of the new Integrated Competencies for Dietetic Education and Practice (ICDEP), which have since come into effect (Partnership for Dietetic Education and Practice, n.d., 2020). The aim of this change is for dietetic interns to gain knowledge of Indigenous Knowledge and values, although it is unlikely that interns would be engaging with Indigenous groups and communities to gain independence related to these new competencies. Previously, it was not a requirement that dietetic curriculum include Indigenous Knowledge and perspectives; therefore, non-Indigenous dietetic interns would have little to no formal experience with Indigenous Knowledge unless an internship was completed with an Indigenous group (and very few of these groups have existing dietetic internship placements available). Perhaps because of the under-representation of Indigenous people in STEM fields, STEM programs are not challenged enough by Indigenous students, leaders, and communities to include Indigenous Knowledge in the curriculum. Examples of the updated competencies include practice within the context of Canadian diversity and practice in a manner that promotes cultural safety (Partnership for Dietetic Education and Practice, 2020). The competencies are vague; however, this is a small step in the right direction to decolonize practices. Data is limited on Indigenous students' experience as dietetic interns. However, my supervisor Dr. Shannan Grant and her colleagues are currently working on a Canadian Dietetic Research Foundation–funded project to "decolonize the profession."

Universities need to begin incorporating Indigenous Knowledge and values into their curriculum. Recently, the University of Prince Edward Island announced that they are now requiring students to take an Indigenous Studies course in order to graduate (Doria-Brown, 2022). This is a great initiation that the university has put forth; I believe that more universities should follow suit, and I hope to see that they do. We are all treaty people, and we can all learn about our shared history on Turtle Island together, and as settlers, we can be conscious about learning about the land from Indigenous peoples and pay respect to their rights, knowledge, and values.

Conclusion

Based on my experience as a dietetic intern with the Two-Eyed Seeing Program, I believe that dietetic curriculum and internships should incorporate an aspect of Two-Eyed Seeing. To do this, department heads/leaders within dietetic governing bodies could work with local Indigenous leaders to build relationships and incorporate Indigenous Knowledge into dietetic education. This would work toward decolonizing dietetic practice and giving future dietitians the experience to work within Indigenous communities.

Now that my dietetic internship placement with the Two-Eyed Seeing Program has come to an end, I can hardly fathom the amount of knowledge I have gained over a four-month period. This is knowledge I would not have gained without the opportunity to complete a dietetic internship with the Two-Eyed Seeing Program. Collaborators, community members, and the leadership team spent countless hours exchanging knowledge with me, and I cannot thank them enough for their time. During my undergraduate degree, exposure to Mi'kmaw world views and values was very limited. However, through this internship I have learned that when you want to learn about Indigenous perspectives, world views, and values, if you reach out to an organization or community member with an open mind and open heart, people can be very willing to share knowledge. This knowledge and history cannot be lost, and as a group we need to work toward reconciliation and decolonizing our practices.

As I continue to complete my Master of Science degree, and my Dietetic Internship Program, I continue to read about and put into practise Two-Eye Seeing and Indigenous values. I am now working with the Two-Eyed Seeing Program as a part-time employee, and am working as a Writing Support Tutor with the MSVU Writing Centre in the Kina'masuti aqq Apognamasuti (Learning and Help) Indigenous

Student Centre on campus.

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Colliding Identities and the Act of Creating Spaces of Belonging in the Occupational Therapy Profession

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Abstract

Introduction. Despite numerous initiatives to recruit a more diverse health professional workforce, those entering the health professions from marginalized groups experience significant barriers to inclusion. The occupational therapy (OT) profession is no exception. The profession, despite language of inclusion, is heavily influenced by colonialism and ableism, and positions itself largely under a Western world view. Literature points to OT students and clinicians from marginalized groups experiencing discrimination and racism, alienation, and internal conflicts between their own sense of identity and that which is expected in the OT profession. Lack of belonging can be a major barrier to success and fulfillment for those wishing to enter the profession. **Objective.** To highlight the invisible work done by those from marginalized groups to create spaces of belonging in the OT profession, through telling personal stories. **Key Issues.** Feelings of personal and professional belonging deeply impact the ways diverse OT students and clinicians engage meaningfully with themselves and their communities. Given the profession is currently aiming to identify its largely uninterrogated Western underpinnings, we must listen and learn from and with those from marginalized groups to create systemic, meaningful change. **Implications.** Creating community and supports within the profession in the context of a marginalized identity takes a significant amount of time and robust mentorship. We must begin to highlight this additional "invisible" work to create systemic changes and solutions and ease the burden for diverse peoples entering the profession.

Keywords: Occupational therapy; Indigenous health; belonging; marginalization

The Inception of Occupational Therapy

The occupational therapy (OT) profession emerged in the early 1900s through the arts and crafts movement as well as the moral treatment movement (Prince Edward Island Occupational Therapy Society, n.d.). In its early development, the profession aimed to support individuals with a broad range of injuries and illnesses to engage in daily activities. After the First World War, veterans required structured activity and supports to transition back into their daily roles and responsibilities. In 1918, the University of Toronto launched the first OT training program in Canada, lasting six weeks in length, which educated numerous young women as occupational aides (Prince Edward Island Occupational Therapy Society, n.d.). Since then, the profession has become a core health profession focused on holistic health and well-being across the lifespan, with therapists in

private and public facilities working in areas of practice including but not limited to mental health, acute rehabilitation, and return to work (Canadian Association of Occupational Therapists [CAOT], n.d.).

OT is a health profession focused on supporting people and communities to engage in activities that they want or need to do, often in situations of injury, illness, or disability (CAOT, n.d.). Occupations are far more than simply "jobs," but rather are all the activities we do that take our time, energy, and focus. The profession has historically classified occupations as being part of self-care, productivity, and/or leisure, aiming to mitigate or remove barriers that impede someone's ability to fully engage in their daily activities (CAOT, n.d.). Increasingly, the profession emphasizes how what we do (occupation) connects to who we are and how we fit in the social world around us (Hitch & Pepin, 2021; Wilcock, 1998, 2007). The profession of OT is holistic in nature and grounded in client-centredness, emphasizes spirituality, and aims to challenge the biomedical model that has underpinned health professions and health professional education in Canada for decades (Egan & Restall, 2022). Yet, critiques of the profession have been continually emerging over recent decades (e.g., Grenier, 2020; Hammell, 2009, 2019; Hunter & Pride, 2021; White & Beagan, 2020; Valavaara, 2012), particularly surrounding equity, diversity, inclusion, and an overemphasis of Western ideologies and ways of knowing.

The OT profession in Canada was established in a context of colonialism, cultural imperialism, and white supremacy, and is therefore influenced primarily by a Western world view (Hammell, 2019; Hunter & Pride, 2021; White et al., 2021). The profession is infused with mainstream (Western) cultural assumptions and biases that often go unnoticed and unchallenged (Hammell, 2019; White & Beagan, 2020; White et al., 2021). Despite this, the profession is in the early stages of identifying Western underpinnings embedded in the profession and is beginning to critique its claims of universality. This work will ideally provide grounding to begin considering how other ways of knowing, being, and doing are equally as valuable to the profession of OT, and how utilizing multiple ways of seeing the world will benefit all—both clients and clinicians. These longstanding, uninterrogated influences on the profession have grave implications for those who are entering the profession from diverse communities and backgrounds. Although little research has been done to date on diverse student and practitioner experiences, a recent study by Beagan, Sibbald, et al. (2022) points to systemic racism and a lack of belonging for occupational therapists entering the profession from diverse backgrounds.

From the moment of entry into health profession education programs, learners from racial, ethnic, gender, 2SLGBTQ+, and other historically marginalized groups may experience this lack of belonging. Often this arises as "imposter syndrome," a feeling of self-doubt and sense of being a fraud (Rivera et al., 2021). Students and new graduates who experience imposter syndrome may be less likely to seek and apply for leadership positions in educational and academic roles later in their careers (Rivera et al., 2021). In comparison, learners and graduates from dominant privileged groups, who see themselves reflected in their textbooks, classrooms, and fieldwork placements, may be less likely to feel imposter syndrome and more likely to see leadership positions as attainable and realistic (Rivera et al., 2021). This may perpetuate the cycle, as those from under-represented groups then continue to see only people with identities very different from their own in leadership roles, intensifying the sense of being a fraud or imposter.

In OT, professional identity strengthens as students progress through the educational program and engage with the curriculum (Boehm et al., 2015). However, lack of minority representation in OT education programs and on admissions boards hinders potential diversity among students and lessens the likelihood of role models to assist students from non-traditional backgrounds navigating their OT career paths (Dawes, 2020; Lucas, 2017).

Ongoing under-representation at all levels undermines a sense of belonging for occupational therapists and students who are Indigenous, Black, people of colour, people with disabilities, or members of the 2SLGBTQ+ community, who grow accustomed to not seeing themselves reflected in many professions and educational institutions. Therefore, OT students who may not share the same cultural values, beliefs, identities, and privileges as their peers and educators are left at the margins and may experience incongruence between the expected professional identity trajectory and their own personal identity.

Diverse Student Experiences in OT: Illuminating a Systemic Issue

With ongoing calls to dismantle systemic racism, ableism, and other problematic systems of power, literature is now emerging on the experiences of diverse students and clinicians in the profession. For example, students entering the profession from working-class backgrounds experience class-based shame and stigma, and may attempt to "pass" as a higher class to belong (Beagan, 2006). Indigenous occupational therapists have described a lack of belonging and support for Indigenous ways of knowing, being, and doing within the profession (Valavaara, 2012; White et al., 2021). Although there is very little research on racialized OT student and therapist experiences, a paper by Beagan and Chacala (2012) from an Irish context points to experiences of discrimination and challenges for both colleagues and clients; a recent paper by Vazir et al. (2019) notes similar experiences among racialized Canadian physiotherapists. Experiences of 2SLGBTQ+ clinicians are also almost non-existent in the literature, but new research by Beagan, Bizzeth, et al. (2022) highlights the complex negotiations related to identity concealment and disclosure that LGBTQ+ health professionals undergo during their careers. Researchers are just beginning to illuminate experiences of systemic racism within the OT profession (e.g., Beagan, Sibbald, et al., 2022), pointing to the importance of peer support and community building for

diverse students and practitioners entering the profession. The purpose of this paper is to discuss how historical underpinnings have informed the concept of belonging within the OT profession, supported by reflections on the authors' personal journeys through OT education programs in Canada.

Taff and Blash (2017) suggest that "Diversity and inclusion are not simply elements of a greater professional vision; they are also antecedents for supporting occupational therapy's growth and visibility internationally" (p. 72). Although the authors recognize this is not a new idea, they emphasize a need for action plans that "support a more diverse workforce" (p. 72). This point cannot be overlooked, particularly with respect to the goal of increasing diversity within OT programs and subsequent entrance into the workforce. If recruitment, education, and organizational restructuring is increasingly integrating diversity initiatives into the frameworks used within the profession, then there must be support systems, resources, and decision-making processes in place that include the perspectives of marginalized students and clinicians. Without a solid foundation of people from historically marginalized populations "at the table" for decision-making, curriculum creation, and student support (such as fieldwork, academic accommodations, and mentorship opportunities), the profession runs the risk of continuing to perpetuate the white supremacy and ableism that have been pervasive to date (Grenier, 2020, 2021).

Occupational belonging

When it comes to research and education on occupational belonging, the focus remains primarily on clients, families, and communities. For instance, existing theories, models, and frameworks conceptualize belonging as something experienced (or not experienced) by the client(s) in relation to the environment and the occupation. In OT education, students are taught that occupational participation can facilitate a sense of doing, being, becoming, and belonging (Wilcock, 1998).

In other words, engaging in occupations can influence relationships between people, activities, environments, and sense of self-identity. However, in their review of how belonging is conceptualized in existing theoretical ways of knowing, Hitch and Pepin (2021) note that the concept of belonging is "under-developed in relation to doing and being" (p. 21) which results in less information being available on what exactly is meant by belonging. Further, while models do include belonging as a vital part of human occupational experiences, there is little to no discussion about belonging *within* the OT profession for students and occupational therapists.

There is well-established literature on how individuals may conceal or downplay their identities to fit into certain spaces. In the context of stigma management and personal safety, Goffman (1963) notes that individuals may engage in various strategies to fit in or belong in particular spaces. He notes that individuals may engage in "passing," whereby they aim to appear as a member of a dominant group, or "covering," whereby they downplay their stigmatized identity to better fit in. Passing provides invisibility of the marginalized identity, whereas covering is related to the "acceptability" of the identity—acknowledging its existence but where "its significance is downplayed" (Beagan, Bizzeth, et al., 2022, p. 2). These strategies are often deliberate and done to reduce personal harm related to particular identities one may hold that are placed on the margins within society (Yoshino, 2006). In the context of OT, these ideas are less defined; however, other studies emerging from nursing and medicine highlight the ways diverse students and practitioners engage in strategies of stigma management (e.g., Eliason, DeJoseph, et al., 2011; Eliason, Dibble, et al., 2011; Etowa et al., 2011; Mansh et al., 2015; Nunez-Smith et al., 2008; Riordan, 2004; Toman, 2019). Specific to OT, a recent paper by Beagan, Bizzeth, et al. (2022) highlights the negotiations LGBTQ+ individuals must undertake regarding identity concealment and disclosure to fit in and minimize harm.

In any socially marginalized group, some members hold the privilege of being able to conceal a marginalized identity, passing easily as members of the dominant group with minimal effort. White-seeming privilege is defined as the occurrence when "a person who identifies as something other than white is mistakenly seen as white and gains access to privilege through mistaken identification" (Downey, 2018, p. 2). It is important to note that this experience includes both erasure of an identity (e.g., Indigeneity, cultural values) and simultaneous advantageous positioning with access to new or different privileges that may be less available if the racialized identity were known or visible. Academic use of "passing" most often frames it as someone being assumed to be part of a dominant or other identity category that is different from how one self-identifies. For instance, light-skinned Indigenous people may be assumed white despite being Indigenous, consequently "passing" as a white person and gaining aspects of white privilege. With respect to the 2SLGBTQ+ community, the term passing is used to describe situations where heterosexual and/or cisgender identities are assumed, when in reality the person does not identify in those ways. Both situations described above occur when assumptions are made about identities and social position.

This paper builds on previous work in the OT profession highlighting its colonial (White & Beagan, 2020; White et al., 2021) and white supremacist (Grenier, 2020; Hunter & Pride, 2021) underpinnings, as well as the often negative experiences of marginalized OT students and practitioners in OT programs (Beagan, 2006; Beagan, Bizzeth, et al., 2022; Beagan & Chacala, 2012; Beagan, Sibbald, et al., 2022; Valavaara, 2012).

Building Community

Whalley Hammell (2021) describes how, in dominant OT models and frameworks, many occupations are discounted and excluded. These may include culturally significant occupations such as connecting with "ancestors and ancestral lands, gods and spirits, cultures and

nature ... occupations undertaken to contribute to the wellbeing and future of others, to enact reciprocity ... and occupations enacted as acts of resistance" (pp. 447–448). By dismissing or excluding these occupations from discourses surrounding meaningful occupations—and more specifically from OT education—students may not learn to value diverse ways in which people engage with their environments, communities, and selves. Additionally, students and emerging occupational therapists who value these occupations may feel they are outliers or that they do not belong, particularly because the categories of leisure, self-care, and productivity are limiting and perpetuate a Western perspective of occupation that has become normative (Hammell, 2019; White & Beagan, 2020; White et al., 2021).

It is important to note the amount of effort it takes for OT students and clinicians from marginalized groups to build community connections, an experience largely taken for granted by their peers who may readily accept and subscribe to the hegemonic environment. Rather than being able to count on peers and faculty sharing a similar world view or culturally grounded way of being and knowing, students from marginalized groups seek these experiences through pre-existing friendships and relationships within their own families and communities. There is frequent evaluation of the safety of the social space and, at times, selective disclosure, both of which take tremendous energy and attention to the social and physical environment (Beagan, Bizzeth, et al., 2022). Rather than having an automatic sense of belonging, marginalized OT students and clinicians are tasked with navigating personal and professional identity while working to attain a sense of belonging within the profession. To further demonstrate this, the authors now share their experiences as students from marginalized groups in the profession.

Our Stories of Identity, Belonging, and OT

Holly's Story

My journey to becoming an occupational therapist began in 2012 when I met with an instructor and told him all the ways the program I was in wasn't aligning with my values and world view. His response would change my life forever: "Have you heard of occupational therapy? What you are describing sounds more closely aligned to what occupational therapists do." I went home, did a little research into the profession, and that was it—I knew I wanted to become an occupational therapist. I'm very grateful to him for taking the time to listen and ultimately guide me in the OT direction. I transferred to university and started over to obtain an undergraduate degree in Kinesiology, and then started in an OT program in 2017. Once I was accepted into that program, I moved to a city much bigger than my small hometown. I didn't know many people there, and I realized I was in for a big adventure—I was away from my family for the first time in my life, starting a master's degree, and I quickly learned I could explore my identity in ways I never considered. So who was I now? I was excited about what the future held.

When I started school in August that year, there were social activities for us to start to get to know each other, and throughout the coming weeks and months we all started to find our place. Within the first few months I experienced an emergence of a new sense of self and an authentic expression of my identity, which involved a lot of unlearning. I felt relieved and started seeking out people who identified in similar ways. This period was my entry into the 2SLGBTQ+ community, and that identity has only strengthened as I have matured and done the internal identity work necessary to counter the homophobic and transphobic messaging I had internalized for my whole life up to that point, as so many of us do.

There was another part of my identity that I was navigating, which is the fact that I am Métis and was one of only two Indigenous students in my class at that time, as far as I am aware. Since my father is a white immigrant from Scotland, I benefit from white-seeming privilege, or white-passing, as people do not assume I am Indigenous based on my appearance. With this privilege comes the potential erasure of my Métis identity, which I

fear also risks erasing the stories of my ancestors who survived despite efforts of settlers and the Canadian government to ensure they did not. I have come to learn that my Métis family struggled with their own sense of belonging. My great-grandmother wore white face powder to appear lighter skinned and also changed her name and birth date in an attempt to conceal her Métis identity. There are likely many reasons she did this, ranging from fear of her children being apprehended to being ashamed of her Indigeneity. Since our family identity was largely hidden, I did not grow up knowing I was Métis, and thus I am still on the journey of learning my place of belonging. I walk the line of not feeling Indigenous enough while also noting how my world view does not align with dominant Western ideologies, so where do I belong? I began questioning whether I needed to create new spaces of belonging. In OT school I kept these stories close to my chest and did not disclose to most of my classmates, preceptors, and clients these things about myself. I recognize this in itself is a privilege because selective disclosure is not available to everyone. I no longer have the ability to choose when I disclose my gender identity and sexual orientation, as they are often assumed based on my self-expression and appearance.

I thoroughly enjoyed my time in the OT program. It was challenging at times, but I felt nurtured and supported in my professional development. On my second placement I went to a rural northern community for six weeks. During that time I had an exceptional preceptor who was incredibly supportive and enthusiastic about helping me develop my skills, knowledge, and confidence as an emerging occupational therapist. This was the first time I saw myself really being able to find my place in the profession, and it helped with my feelings of imposter syndrome or being a fraud. Being a student is a vulnerable experience, similar to how it feels entering into a new space and trying to learn how to belong. I was often asking: am I enough?

By my second year in the program I no longer put as much energy or focus into connecting with other students in the program, because I felt as though I kept coming up short. More and more I found that my relationships with my preceptors, clients, and the faculty were connections that felt better suited to supporting my professional development, whereas I relied on my existing friendships and my family for the emotional support I needed. I sought out new connections with others in the 2SLGBTQ+ community and focused on learning how to belong within that space. The more time I spent in those contexts, the more I realized that some queer spaces were problematic in that issues like exclusion, racism, and ableism existed there too. This is when I first really observed how being from one marginalized group does not mean other forms of exclusion and oppression do not take place. My interest in intersectionality flourished during this time and continues to be what motivates me to do the PhD work I am now doing.

I didn't make a lot of close friendships while in school, though I did make a handful of connections that I still really value. I have since reconnected with multiple former classmates whom I am closer with now than when I was in school. I think being out of the standardized and colonial environment of a classroom has enabled me to see these people differently, and to be seen differently. I could have made a stronger effort to connect with the Indigenous community on campus during school but I didn't have the energy to add this to my full-time schedule between exams, placements, and trying to navigate my emerging identities at the same time. This time around as I return to academia, I am approaching things differently. I am actively engaging in Indigenous-led and focused programs, workshops, and conferences. I have met some incredible people and look forward to continuing my journey toward what it can look and feel like to belong as an Indigenous person within academia and OT.

OT is a profession that operates on the premise that everyone should have a sense of belonging, and it is through enacting and engaging in our occupations that we can foster belonging. I hope the work I am doing both personally and professionally will contribute to that goal, particularly for those who have

historically experienced and presently still experience a sense of not belonging because of who they are.

Tara's Story

My journey into OT began in 2017 when I was finishing my undergraduate degree in Psychology. I knew there were virtually no job prospects with just an undergraduate psychology degree, so I decided to explore some graduate programs. I was always particularly interested in health and health care, but didn't want to enter nursing or medicine because of the long work hours. Also, as an Indigenous student, I knew quite a few folks who went into typical "biomedical" health care professions and often experienced racism, discrimination, and tensions between their ways of knowing, being, and doing and what was being asked of them in conventional Western health programs.

One of my good friends was planning to apply to OT, and the more I explored the profession, the more I found it resonated with the ways I viewed health, well-being, and health care generally. I was originally drawn to how many spaces and contexts occupational therapists could work in, and how broad the profession was. I applied to OT school, got in, and began the two-year journey toward becoming an occupational therapist. Being from the territory and having my family, friends, and partner here all influenced my choice to stay close to home for my graduate degree. I had a very solid support system here and went into OT school excited and optimistic about what my future held.

My experience in OT school was generally a good one. I had spent many years at that point grappling with my Indigenous identity in relation to colonialism and colonial violence in Canada. My father was adopted into a white family in the 1960s and had all his connections to community and family severed at that time. In relation to education broadly, I had been educated in Western systems for my entire life and was quite easily able to make myself "fit" into these spaces, at least on the outside.

Although I am a Mi'kmaw woman, I am able to "pass" as a white person, given my light skin tone. This meant that I had the *privilege* to choose when, to whom, and how I disclosed my identity, and I was also able to mitigate overt discrimination and racism often experienced by other Indigenous students. My outward appearance allowed me to, at least on the exterior, fit in. Another major piece of myself and my upbringing I was able to disclose (or not) was my working-class background. As a first-generation university student, I found graduate school a foreign space to be in, despite already having an undergraduate degree. None of my family were able to help, either. During my OT education, I spent a lot of my spare time in paid work, which made me feel like a bit of an outcast. Not a lot of other students in my program had part-time jobs, and we were discouraged from working outside of school because it would likely lower our grades. The decision not to work was not a privilege I had—and this meant that I missed out on a lot of get-togethers and school activities meant to foster support and belonging in our OT cohort.

It wasn't until I started to learn more about the profession in the first year that I started to realize some congruencies, as well as incongruencies, with my own upbringing, experiences, and identity. Although our profession is described as holistic and client-centred and aligns itself more with a biopsychosocial model of health, it is also elitist, colonial, and exclusionary in many ways as well. I found that a lot of what is taught in OT school is from a particular viewpoint or world view, and other diverse ways of seeing the world were excluded—never talked about. This made me question whether I belonged in this space and consequently led to imposter syndrome. It felt as though I would have to privilege my Western upbringing and sacrifice many of the teachings and ways of knowing that I've come to learn and understand and that resonate with me as an Indigenous person. I didn't really talk to anyone outside of my closest friends about this at the time, but looking back, I see how different my school experience was in comparison to that of many other students in my program.

At the end of my first year, I encountered a professor I got along with, and I shared my

interests in exploring OT through the lens of my Indigenous identity. She used her time, expertise, and resources to support me in exploring who I was, as a Mi'kmaw woman in an OT program, and for that I am forever grateful. It was through that connection that I feel my journey to belonging in the profession really began. I was sure I was one of very few Indigenous students in my cohort, if not the only one, and was eager to get to know more Indigenous occupational therapists to see if they experienced similar tensions and struggles.

In 2018, I connected with two Indigenous occupational therapists in other provinces who welcomed me with open arms (virtually). They met with me on their own time and not only listened to my experiences but validated them. These informal meetings, connections, and conversations continued outside of my formal OT training and work time, and my network of Indigenous occupational therapists began to grow as they supported me in meeting others from across the country. For the first time, I began to feel like I truly belonged in the space I was creating. It was these friendships and connections that fostered my interest and confidence enough to do a PhD exploring the experiences of Indigenous occupational therapists in Canada.

In 2021, six Indigenous occupational therapists committed to sharing our experiences at the annual Canadian Association of Occupational Therapists Conference. This was one of the few pieces of work "out there" in academia highlighting the experiences of Indigenous occupational therapists. Although all of us are busy, and consistent communication among us ebbs and flows, the importance of community never wanes. I know that there are other Indigenous occupational therapists out there who have similar experiences and an understanding of where I come from and what I'm going through. Since then, I've continued to build relationships with other Indigenous occupational therapists across the country and have created long-lasting relationships that have changed me as a person, as an occupational therapist, and as a scholar. It made me realize that belonging is not about the place, but about

the people—and I'm just now starting to see how I belong in and fit into this profession.

Many people talk about the great friends that they made in OT school, and I made a few good ones, too. But my most important relationships and my sense of belonging within the OT profession were formed outside of my OT program, on my own time. I spent many evenings and weekends on the phone or Zoom talking with other Indigenous occupational therapists. I am blessed to be continually making these important connections through my doctoral work, but a resounding statement I hear from Indigenous OT students and practitioners is how much work goes into creating community when you don't automatically belong or see yourself reflected in mainstream spaces (e.g., academia, health care). My story highlights the effort, and need, to create spaces where people can and do feel like they belong. Although my experience is but one of many, I hope that the work I'm doing will contribute to necessary changes in the profession so that Indigenous OT students and practitioners feel supported and valued in the profession.

Conclusion

This paper aims to highlight the invisible work that those from marginalized groups must undertake to create spaces of belonging in the OT profession. Despite language of inclusion in the profession, OT—like most health professions—remains mired in colonialism, heterosexism, ableism, and racism. Though often focusing on how to create spaces where clients feel valued and included, the profession continues to overlook the importance of belonging for clinicians and students. Learners from marginalized groups may enter but often remain not-fully-belonging in the profession. One major barrier to creating spaces of belonging for all is that the world views espoused in the profession and shared by classmates, professors, and preceptors often convey messages of not-belonging, even if unintentionally. Therefore, Indigenous entrants to the profession—and queer entrants, along

with others from marginalized groups—need to forge their own pathways to belonging, something granted readily to members of dominant privileged groups. The energy-intensive, emotional burden of creating spaces of belonging when one does not automatically feel like they belong may be recognized at the time, or upon reflection years later. Either way, this burden placed on learners and clinicians from marginalized groups must be acknowledged, recognized, and addressed. Peer support and community-building is important to survive, thrive, and continue to improve the inclusivity of the OT profession.

Key Takeaways

● The OT profession is currently in a state of flux, with clinicians beginning to identify and interrogate the narrow Western ideals and underpinnings while emphasizing the changes needed to support diverse peoples.
● Feelings of personal and professional belonging (or not) inherently impact the ways OT students and clinicians are able to engage with themselves, clients, and their communities in authentic and meaningful ways.
● Creating community and supports within the OT profession in the context of a marginalized identity takes time, space, and often mentorship. This additional "invisible" work must be recognized, and systemic changes and solutions must be put in place to ease the burden for diverse peoples entering the profession.

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Research Article

Embodied in Indigenous Research: How Indigeneity, Positionality, and Relationality Contribute to Research Approaches and Understanding

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Abstract

Objectives: As the presence of Indigenous Peoples, worldviews, perspectives, and teachings continue to grow within academia, the institutional narrative regarding Indigenous approaches to knowing, doing, and being evolves and expands. We would like to contribute to this shifting narrative. **Introduction**: We are a diverse group of trainees invited into an Indigenous-led research project, entitled *IndWisdom*, that is exploring the context-mechanism-outcome relationships of Indigenous research. By conducting two parallel study components—an Indigenous-informed realist review and

case studies—the larger *IndWisdom* project aims to advance Indigenous Peoples' sovereignty and rights related to how Indigenous Knowledges are centred in research. Through the process of this research, we have come to the understanding that Indigenous Knowledges and Indigenous Knowledge Systems are contextualized and dynamic in nature and are embodied and interconnected in all aspects of one's lived experience, language, traditions, and culture. **Methods:** As a collective, the trainees were supported to participate in a sharing circle to introduce ourselves and reflect on how our positionality and understanding of who we are impacts our approach to engaging with research. **Results:** While we span different nationhoods and time zones, we share how we have fostered virtual spaces that respect each other's perspectives and approaches as well as honour our own Indigenous worldviews and allied identities. **Discussion:** In the same way that our realist review involves recording and analyzing context-mechanism-outcome details of other peoples' studies, our paper provides the context of who we are as co-authors, our mechanisms (approaches) of engaging with each other and the *IndWisdom* study content, and outcomes from our ways of knowing and doing research.

Keywords: Indigenous, research, typology/methodology, lived experience, Indigenous research methodologies, ways of knowing

Ethics

This manuscript is exempt from an ethics review, as only co-authors were part of the discussion. Ethical protocols were developed and respected by each co-author throughout this process, including an appropriate opening and closing of the circle and the establishment of a safe space. All co-authors agreed to take turns speaking, to not interrupt one another, and to allow a space for vulnerability and reflection. All co-authors agreed to maintain the confidentiality of information shared in the circle, and all information shared in this manuscript was agreed upon.

Background Context: *IndWisdom* Project

There has been substantial growth in the development and contribution of Indigenous-led research leading to increased understanding of Indigenous Peoples, Indigenous Knowledges, and Indigenous Knowledge Systems. We are an interdisciplinary research team of Indigenous and allied scholars committed to protecting the inherent rights of Indigenous Peoples, including the safekeeping of Indigenous Knowledges, which have historically been extracted, exploited and misrepresented in academia. We are contributing to the advancement of Indigenous Peoples' sovereignty and rights related to how Indigenous Knowledges are centred in research by conducting two parallel study components: (a) an Indigenous-informed realist review to explore literature, and (b) case studies involving discussion groups and interviews, both of which are in the beginning

stages (more details about our team and project can be found on our website: https://sites.google.com/view/indwisdom/home).

Our project *IndWisdom* proposed the following living definition for Indigenous Knowledges: Indigenous Knowledges are living, contextualized and rooted in language, culture, tradition, and land, which are dynamic, diverse, and interconnected systems that contain ancestral, communal, holistic, and spiritual knowledges that encompass every aspect of living existence, past, present, and future.

This definition was developed by our team after reviewing and reflecting on diverse sources with emphasis on the works of senior Indigenous scholars on this project (Battiste, 2005; Brascoupé, 2002; Brascoupé & Endemann, 1999; Brascoupé & Mann, 2001; Hart, 2010; Kimmerer, 2013; Ocholla, 2007; Semali & Kincheloe, 1999; Shultz et al., 2009; Weber-Pillwax, 1999; Wemigwans, 2018; Witt & Hookimaw-Witt, 2003). We have come together to amplify the good work conducted by and for Indigenous Peoples and share that knowledge to a wider audience. Our collective voices highlight the myriad of ways that Indigenous Peoples are conducting and engaging with research that advances the well-being of all Peoples.

Emerging from the *IndWisdom* Project

Each of the *IndWisdom* trainees were invited to participate in the *IndWisdom* project by mentors and supervisors, co-authors and co-investigators on the project, whom we have crossed paths with along our academic journeys in graduate school.

Trainees

Diane Simon (she/her) is Mi'kmaw, and her paternal bloodlines are Gitxsan. She is a registered member of Fort Folly First Nation, a trained midwife, and holds a master's in public health. Diane currently resides in Tkaronto/Toronto. **Jaiden Herkimer** (she/her) is a member of the Mississaugas of the Credit First Nation. She is a cisgender woman with mixed Anishinaabe and settler ancestry. She

lives within the bounds of the Between the Lakes Treaty (No. 3) on the Treaty Lands and Territory of the Mississaugas of the Credit First Nation and the traditional territory of the Haudenosaunee and Attawandaron Peoples. **Nicole Burns** (she/her) is a white settler born on the lands of the Pequot, Mohegan, and Eastern Nehântick Nations. She now resides on the traditional territory of the Attawandaron, Anishnaabeg, and Haudenosaunee Peoples and is a PhD student at the Balsillie School of International Affairs. **Nikki Rose Hunter-Porter** (she/her) is of the Secwépemc First Nations and is a member of St'uxwtéws within the interior of British Columbia. Currently residing in the unceded, occupied, and traditional territory of Tk'emlúps te Secwépemc, Kamloops, she is a registered nurse and Master of Nursing student at Thompson Rivers University. **Noé Préfontaine** (they/them) is a queer, disabled, Two-Spirited Métis person from the Red River Valley, known colonially as Winnipeg, where their ancestors have lived for many generations. They are a Master of Social Work student at McGill University. **Samantha Roan** (she/her) is an Anishnaabekwe and nehiyaw iskwew. She is from Big Grassy River First Nation. She is a mom of three and a first-generation PhD student at Trent University. She currently lives and works on the traditional territories of the Haudenosaunee, Neutral, and Anishnaabe. **Tina Lanceleve**, of Cree/Métis ancestry, was raised in Elizabeth Métis Settlement but has family ties in Driftpile Cree Nation, Treaty 8 territory. She is an educator, having taught grade 3 and 8, and is now committed to Indigenous health research.

Mentors

Anita C. Benoit is Mi'kmaw and French Acadian with family in Esgenoopetitj First Nation and Brantville, New Brunswick. She is an Assistant Professor in the Department of Health and Society at the University of Toronto Scarborough. **Josie Auger**, PhD, is a nehiyaw iskwew of Bigstone Cree Nation in Treaty 8. Currently, she is an Associate Professor at Athabasca University in the Centre of Interdisciplinary Studies. **Melody Morton Ninomiya**'s (she/her) upbringing and heritage

are a blend of Japanese and Swiss-German Mennonite. She lives with her family and works as a faculty member in Health Sciences at Laurier University on the traditional and unceded territory of the Haudenosaunee, Anishinaabe, and Attawandaron Peoples. **Mona Lisa Bourque Bearskin** is a member of amiskosâkahikan nêhiyaw peyakôskân, ostêsimâwoyasiwêwin nikotwâsik Beaver Lake Cree Nation, Treaty No. 6 and is an Associate Professor and Canadian Institute of Indigenous Health Research (CIHR) Indigenous Health Nursing Research Chair working as an uninvited guest on the traditional unceded territories of Tk'emlúps te Secwépemc where Thompson River University's School of Nursing is located.

Introduction

As part of the *IndWisdom* project, we gather weekly in a virtual circle and are led through our responsibilities for completing a realist review of Indigenous research studies, which we are still in the process of conducting. Our realist review followed an iterative process to select Indigenous research studies guided by Indigenous ways of knowing, being, and doing and using Indigenous research methodologies as an overarching framework (Weber-Pillwax, 1999). The inclusion criteria for selecting studies were evidence of Indigenous Peoples leading, advising, and/or governing the research, as well as a description of Indigenous Knowledges as a component to the research process and/or findings and how the research benefited Indigenous Peoples. The specific protocol for the realist review is detailed in a subsequent manuscript (Hunter-Porter et al., 2023). In this process, we strive to engage with each other in a safe and respectful manner to create and foster space to share our various journeys to and through academia and ground our relationship with one another. Our work began by critically reviewing selected articles that were chosen by senior members of the *IndWisdom* team to identify and interpret the context, mechanisms, and outcomes (C-M-O) of each study. We then created visual interpretations of each C-M-O pathway (see

Figures 1–3 for examples). By exploring the C-M-O pathways, we began to recognize how our positionality informs and impacts our understandings and approaches to engaging with research and our communities.

Objectives and Method

With the support and encouragement of our mentors, we conducted a virtual sharing circle for us, as trainees, to explore who we are and how this might impact our roles and understandings of research. We wanted to honour and share our lived experiences, histories, and backgrounds, as well as their influence on our understandings and interpretations of the larger realist review study. Together, we developed two questions for our sharing circle, facilitated by a mentor: (a) "Who are you?", followed by (b) "How does your experience and understanding of Indigenous research play a part in the *IndWisdom* research project?"

We structured our virtual sharing circle in ceremony to honour our ways of knowing and to ensure we could share in a safe space and manner that reflected our values and respect for one another. We agreed not to share anything outside of the circle without collective agreement. Our responses to the two questions were recorded and transcribed. Quotes were organized using qualitative thematic analysis. Each trainee reviewed their respective quotes to ensure the meaning and context of what was being shared in this paper was being authentically captured and interpreted.

Results

As a group, we decided to share the major themes in a collective voice and have chosen not to attribute quotes to specific individuals. We organized our major themes by our group's context, mechanisms, and outcomes.

Context

We have come to know each other intimately, as we have shared many emotions, stories, and experiences from our lives. Being

Figure 1

C-M-O Pathway of a Study by Ljubicic et al. (2018)

~ CONTEXT ~

↳ community members identified the importance of documenting Inuit knowledge in order to be taken more seriously by researchers & gov't managers

~ involvement of Inuit & considerations of Inuit knowledge paramount in undertaking any research or wildlife management initiatives in Inuit Nunangat.

~ colonial policies contributed to devastating inter-generational legacies for many Inuit families.

~ Indigenous ways of knowing/being intergenerational/ever-evolving & grounded

~ reciprocal relationship with people/land/water/ice/all living beings

~ concerns about past research practices/effect of changing lifestyles/physical/mental well-being of community/potential future imposition of hunting quotas.

~ ignored by gov't & researchers

~ FUNDING ~
SSHRC
CARLETON UNIV.
UNIV. OF AB
INUIT HERITAGE TRUST
N.S.T.P

~ material
~ sharing
~ Tuktuit
~ movements
~ habitat/health
~ seasonal rounds ~
~ cultural identity, continuity
~ respect
~ well-being
~ values
~ skills
~ relationships

~ MECHANISMS ~

~ CBPR
~ IRMS
~ 3 R's
respect/reciprocity
relationality

~ advocating IK systems
~ communities as collaborators & partners in research
~ reciprocal sharing of knowledge
~ working together for the common good
~ community engagement in early meetings
~ working together throughout all stages of research
~ value & rely on Inuit knowledge ~ jointly seeking funding/investing locally ~ develop appropriate wildlife monitoring techniques ~ Engaging Elders/Youth in research
~ sharing results at all stages ~ 3 days of discussion ~
~ three Elder-Youth land camps, 39 interviews, 5 verification workshops ~ history/Inuktitut lang/terminology/mapping seasons

~ OUTCOMES ~

~ research seeks to contribute to ongoing efforts to encourage greater attentiveness to Inuit knowledge in policy and decision-making

~ defining information needs

~ develop closer working relationships

~ learn from local experts

~ support local leadership in research & mgmt. efforts

~ driving force for researchers to engage in & improve, ethical & respectful research relationships with Inuit communities

~ identify gaps & future needs must consider community priorities

~ developing & implementing credible research

~ developing a solid information base for Nunavut's caribou population

~ more opportunities to meet/share knowledge within & between regions of Nunavut

~ document/synthesize Uqsuqtuurmiut knowledge of tuktuit to make it more publicly accessible to younger generations, researchers & wildlife managers.

Lanceleve, 2022

able to mimic traditional ways of interacting and connecting with one another created a sense of community among us that helped combat the isolation and disconnect that COVID-19 lockdowns have perpetuated. The depth of our connections has been essential for us to reclaim and recentre our own critical consciousness.

Entering Academia

It often feels that our positions as trainees within academic institutions are the embodiment of Etuaptmumk, the "gift of multiple perspectives" (Bartlett et al., 2012; Roher et al., 2021). We each carry history, knowledge, perspectives, and lived experiences as Indigenous and allied Peoples as we strive to learn about formal institutional understandings and approaches. As learners, we are made to find a balance or compromise between approaches to learning and being. We are continually trying to find a comfortable space between who we are, what we already know, and everything we are trying to learn and understand:

> Academia was never a safe space in my mind. I think, always going into it, was knowing it was a different way of thinking and being.
> It is so much harder for us because it's not a system set up for us. It has that very Western lens and we're constantly going up against it and needing to justify who we are or what we know.

Our intentions in gaining new knowledge and greater understanding of systems are a means to eventually assist our communities' healing and growth. We balance our responsibilities of holding our identities and values close to us while also trying to learn Western ideas:

> I move through the majority of my days as a First Nations woman with a purpose of "I need to survive today." And within the context of Indigenous research, I want to talk about relationality and reciprocity within my experiences of stepping in and standing within these academic and research spaces.

We often feel the unfair pressure to represent all Indigenous Peoples in the spaces we are in, especially if we are the lone Indigenous person present. A common experience among us is the responsibility of holding space for nationhood and challenging notions of pan-Indigeneity:

> As a First Nations woman, it was rare that I found myself in spaces and places that I felt heard and seen. This is not the same "seen" as I felt many times being the only Indigenous person in the room within academia or my nursing roles.

For many of us, we are the first within our families to achieve these academic accomplishments. We understand the challenges and barriers to get to where we are but also want to help make this journey easier for the people who come after us:

> I'm the first person to graduate, and then I'm the first person to go into a master's program. So, when I walked into the master's program and, like, graduate studies, I didn't know anybody that looked like me, in this kind of area. I didn't know if there were very many of us out there, much less in positions [of leadership].

We are Part of the Research

Our introductions to one another went beyond our names and where we are from and extended into who we think we are and everything that contributed to that understanding. The intersections of our identities are mixed with intergenerational traumas and healing, and carry the continued presence, impositions, and effects of colonialism. Our paths have differing levels of connection and disconnection between us and our Indigeneity. These understandings are constantly evolving as we grow and learn:

> Yeah, and I'd say a lot of my knowledge comes from my family. I primarily grew up with a very Westernized worldview, I would say, but my Indigeneity has always been there. And it's become really increasingly present as I've gotten older.

As learners, we recognize how our families and communities strongly influence who we are and the work we are trying to accomplish. Many of us were challenged to articulate who we are in relation to our understandings of Indigenous research, as our identities often extend beyond

us as individuals, and are inclusive of everything around us, including our ancestors, our histories, and our connections to the land:

> *I share about my family because I really think it's important for my family to be in the space with me. I don't move into spaces without my family. I always invite them with me. There are always spaces for my ancestors and my loved ones to come alongside me.*

Our backgrounds and histories shape our identities and perspectives, which influence how we approach and understand research. In recognizing who we are and all the experiences that make up who we have become, we begin the process of learning and unlearning, healing, and changing: "You're always learning, you're always growing, you're always evolving."

Figure 2
C-M-O Pathway of a Study by Healey et al. (2016)

Préfontaine, 2022

Influence of Teachings

Humility is an important lesson and responsibility that each of us carry, especially as learners hoping to gain understanding and skills from our teachers and each other. By engaging with this project, we hope to bring a humility that is grounded in the necessity of working as a collective:

> *I wouldn't say that I bring anything special to this project by any means. But I will say that I bring everything that I have, everything that I know, all of my passion and willingness to work alongside all of you and use whatever skills I have to the best of my ability.*

There is the idea that we learn to become experts in a subject or topic and that learning

must be a formal experience, although many of us grew up being told to listen to our Elders: "So every chance I get, in community, or wherever, when the Elders are speaking, I listen … to me a

huge part of communication is listening. That's why you have two ears, right?"

Figure 3

C-M-O Pathway of a Study by Fast et al. (2021)

Roan, 2022

Mechanisms

We have learned that the *how* and *why* we go about research is equally as important as the end result(s). We recognize that the way we interact with one another and community(ies) will also make a difference in the research. We aim to conduct research "in a good way," in keeping with the knowledge and traditions that have been passed on to us by our families, mentors, and Elders. We understand that research is not objective; as researchers, we each carry and share our ideologies, knowledges, and perspectives as we conduct each phase: "I very much feel that my liberation is tied to the liberation of others; so that's something that I'm very passionate about that fuels me in my personal life, and my career, and everything else."

Connecting to the Process

Maintaining our connections to our identity and community helps to ground many of our experiences within academia:

> *Being a Two-Spirited person who identifies somewhere along the gender binary, I always feel in the middle somewhere, expressing myself one way or another. I don't know exactly what that all means, but I do know that I sit in the middle of something and that is where it feels right.*

Mentorship and community-building not only instill a genuine sense of belonging, but they also facilitate personal learning and growth in areas that are intertwined with research concepts, content, and skills: "Hearing everybody's experiences and what they're bringing, and unpacking, and how it's going to affect Indigenous research is incredible."

Stepping into the circle of "research," we are cognizant of the legacies of mistreatment and exploitation between research and Indigenous Peoples. We recognize the importance of needing to balance those concerns and wanting to improve relations and rebuild trust with our Indigenous communities:

> *The vast world of research is very daunting, scary, and overwhelming. Research within our communities has been, and sometimes continues to be, a harmful experience. I felt as a First Nations woman, I didn't trust research. I often connect research with a sense of loss. What more are they going to take from us? To either use against us, or to steal from us for their own gain? We have already lost so much as Peoples. We already feel so much intergenerational pain. I had a really hard time stepping into this unknown world, but I chose to be courageous. I chose to trust.*

For many of us, our time within academia is limited and temporary. Engaging in research from an institutional lens also feels confined and limited. We carry the responsibility to ensure cultural care and safety for our communities moving forward; however, the legacy of "helicopter" or "drive-by" research in Indigenous communities is intimidating and takes an emotional toll on us and the community(ies) we represent:

> *Western research is inherently an extractive process that benefits from [Indigenous] wisdoms, but does nothing in terms of reciprocity, and does nothing in terms of contributing to a conversation. There's already a predetermined outcome, which is not long-term reciprocity.*

We want the work we are involved with to be conducted "in a good way" and to be demonstrative of Indigenous excellence. We want to model what it means to work well with Indigenous nations, organizations, and communities and set an example for future research:

> *I was like "Oh, we're gonna change so much stuff" and like we're bringing all of this good stuff to Indigenous excellence and to what can be done, how to do things right and "in a good way."*
>
> *I would say very specifically that with this project I feel like, I know research as Ceremony. More like seeing the product, seeing the protocol and the genuine relationships, and the level of care and thought and intention, and just relationship building as seeing it—really*

experiencing it rather than hearing about it. It is a different type of knowing.

Outcomes

We have come to this research from various backgrounds and have different reasons why we have joined this project. However, we share the common goal of working toward creating safe spaces in academia for Indigenous Peoples and Indigenous Knowledges.

Indigenizing Academy

We hope to create new platforms for Indigenous voices in research and academia and within our communities and nations. We feel that this can help shift the imbalance of power between Indigenous and Western ideologies and systems:

> *The exciting thing about this project is that I think it has the opportunity to help reframe Indigenous ways of knowing and doing.*
> *We have this opportunity, where we have all these credentials, where we have all these voices to make that difference. We can speak the language of academia.*

We recognize that learning and growing is a process and can take time. As we better understand "the system" in which we live and work, we strive to make contributions that will have an impact and help advance the work that was started by those who came before us:

> *I come from a policy background where, you know, even our ancestors had that foresight to make treaties, and I see that it's like policy. And how knowing it, and understanding it, and living it and how important that is. And so, I see that as in terms of the work that this is, and that we're able to do that with this project. It's so exciting to be able to be a part of that.*

It Takes a Community

Working as a collective has reinforced the importance and strength of collaborating. We each bring a different perspective to the group, and the learning space we have fostered allows us to support one another as well as learn and grow from one another:

> *This collective growth as a team made me realize that research, wisdom seeking,*

knowledge seeking, whatever we want to call it, is healing. I developed a passion to continue this healing. This is what we need as Peoples. We need to be connected, we need to hear the language, we need to hear the stories, and we need to learn from each other. We are just as part of the research as anything else. The uniqueness of who we are, the gifts we bring, and the stories we tell are all a part of the research process and journey.

We recognize and appreciate the opportunity presented to us by our mentors who invited us into this space and have created a way for us to learn about Indigenous ways of doing research in a way that reflects who we are, where we come from, and the values we carry. As a result of colonial legacies, our collective reflects a diversity of knowledge and connections to our Indigenous and allied identities and understandings. We respect everyone's openness to share and learn from one another, despite our vulnerabilities:

> *I think I've also done a lot of reconnecting to my Indigeneity over the past five years. So being able to talk and connect with other Indigenous people and reconnect has been instrumental in my understanding of Indigenous methodologies. Because to me, Indigenous research should be about the people, and for the benefit of Indigenous people.*
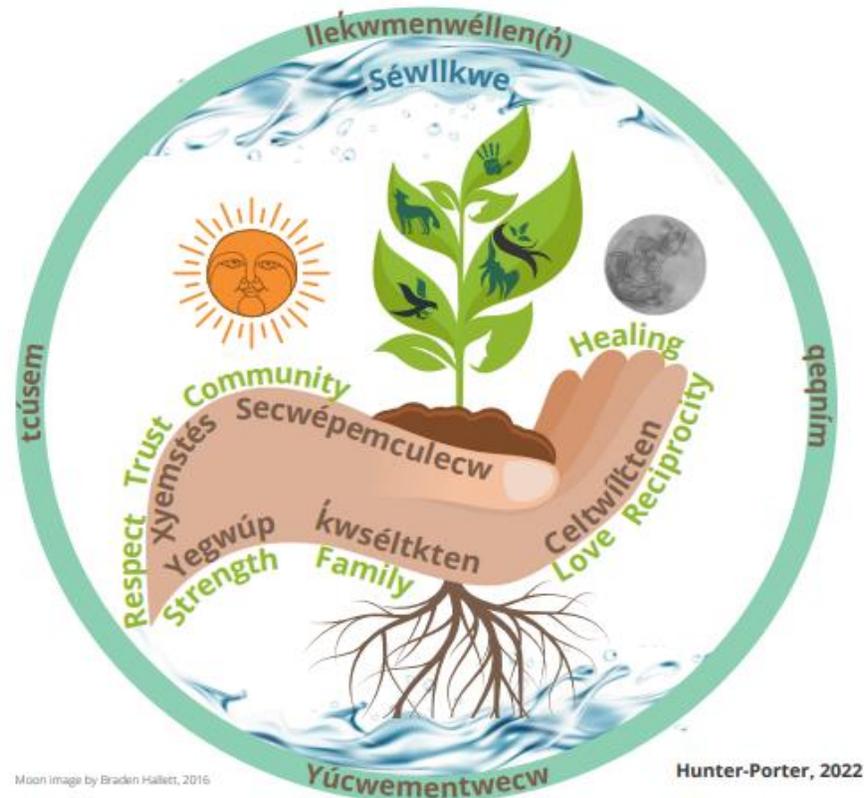
As individuals, and as a collective, we have visions of liberation for Indigenous Peoples, and we aim to achieve that through our work:

> *I visualize this as growing a beautiful garden. We enter into the space with the spirit of reciprocity, each of us learning and taking the time to carefully plant the seeds. We water and add nourishment to our garden. We try to not be scared of those weeds that tend to pop up out of nowhere. We tend to them in a patient and caring way, as they are living as well. Sometimes our plants don't grow as fast as we want them to, but they grow in the way they know they should. There may be days that go by, and we don't see the*

sunshine, but there are other days the sun feels like it is shining brighter than it ever has before. Our plants are all a part of the same soil, the Secwépemc, the land. They are always connecting and learning about each other and helping each other grow.

Figure 4
Our Process as a Garden

Discussion and Conclusion

The historical dynamics between formal education and Indigenous Peoples is fraught with complexity and trauma; this legacy can be traced back to the Doctrine of Discovery, residential schools, and many more hidden policies (Wilk et al., 2017). Academic institutions have not been safe or inclusive spaces for Indigenous learners and continue to perpetuate harm (Battiste, 2013). To this day, knowledge and power exist within hierarchies, with Western philosophies dominating the narrative and perpetuating an imbalance of knowledge systems (Battiste, 2013; Minthorn & Nelson, 2018). We have experienced and witnessed this in our own lives and learning journeys, and we understand that creating and taking up space in academia and disrupting the status quo is one way to contribute to health and wellness of Indigenous Peoples.

Reconciliation, equity, and inclusion require more than superficial gestures and appropriation of Indigenous language and terminology by institutions; it requires lasting changes that result in the benefit and advancement of Indigenous health and well-being (Smylie et al., 2022). It begins with establishing relational reciprocity and accountability to the Indigenous Peoples we

work with and are ultimately responsible to (Bourque Bearskin et al., 2016). Change has been slow, but we believe that the collective efforts of all of us can transform the institutions and systems that exist around us to become better, safer, and inclusive of the diversity of perspectives and approaches we have to offer. This project has shown us that we can create space to include our Indigeneity in academic processes, and we can redefine how we interpret and relate to research. Taking an approach that is Indigenous-led and grounded in the collective, we come together with a common intention to learn, grow, hold space, and lend to the ongoing contributions in reframing the narratives about Indigenous Peoples, Indigenous Knowledges, and Indigenous Knowledge Systems. We do this by embodying Indigenous Knowledges in our research.

We remain humbled by the wisdom, knowledge, and experience of our mentors and those who have come before us and are appreciative of the opportunity to come together to critically develop our ways of knowing, being, and doing. To close our sharing circle, we were asked to share a single word about how we were feeling. In closing this article, we also share those words as our intention to advance the work we are a part of and the many roles and spaces we occupy.

Grace.
Transformational.
Medicine.
Grateful.
Evolving.
Connected.
Séwllkwe ["water"]

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Research Article

Sharing Intergenerational Food Stories on the Land and Online to Engage Mi'kmaw Children in Indigenous Food Sovereignty

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Abstract

Introduction: Within Indigenous cultures, stories about food and health have been shared on the land because the land, air, water, and ice are where food naturally grows and exists. Yet, Indigenous children are increasingly using online technologies to gather knowledge and share stories with their communities. Objectives: Through analyzing a storytelling session led by a Mi'kmaw Knowledge Keeper, this paper explores how land-based learning can come together with online technology to engage children in Indigenous food sovereignty. **Methods:** This study is situated within an intergenerational Mi'kmaw foods project called the Land2Lab Project and is guided by Two-Eyed Seeing and decolonial theory. We used narrative inquiry to explore a Knowledge Keeper's storytelling session that was conducted with 14 Mi'kmaw children. **Results:** Through this study we learned that we can prioritize Mi'kmaw knowledge both on the land and online. Yet, spending time on the land intergenerationally learning about Mi'kmaw foodways is imperative to maintaining Mi'kmaw food knowledge and engaging children in Indigenous food sovereignty. **Conclusion/Discussion:** 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.

Keywords: Indigenous Food Sovereignty; Intergenerational Storytelling; Land-based Learning; Online Technology; Two-Eyed Seeing; Mi'kmaw Knowledge

Introduction

Within Indigenous cultures, stories about food and health have been formed and shared on the land because the land, air, water, and ice are where food naturally grows and exists. Yet, there is a growing body of research indicating that Indigenous children are becoming more adept at using online technologies to engage with their communities and learn about their cultural stories and knowledges (Rice et al., 2016). As a research community, we cannot ignore the significant role of online technology in young people's lives, and we must acknowledge it is a tool that many Indigenous children are using to gather

information and share the stories of their lives. The reality is that Indigenous children in Canada are engaging with their culture both on the land and online, and little research to date explores the relationship between online technology and land-based learning. Thus, this paper shares the findings of a study focused on land-based learning and online technology and how these two approaches can theoretically come together to engage Mi'kmaw children in Indigenous food sovereignty through Two-Eyed Seeing.

Literature Review

Indigenous Food Sovereignty

Indigenous food sovereignty (IFS) is the process of learning, reclaiming, and practising knowledge about Indigenous foodways, which are health-enabling cultural food practices and accompanying stories formed from being in relationship with Mother Nature that are passed down through generations (Counihan et al., 2018). Dawn Morrison (2011), founder of the Working Group on Indigenous Food Sovereignty, has identified four main principles that guide Indigenous communities who are striving to achieve IFS. These principles are as follows: (a) Sacred Sovereignty, (b) Participation, (c) Self-Determination, and (d) Legislation and Policy. Morrison (2011) indicates that sacred sovereignty identifies food as a gift from the Creator, meaning that Indigenous rights to food are sacred and cannot be constrained or recalled by colonial laws, policies, or institutions. Secondly, participation is central to IFS because it requires the day-to-day practice of individuals, families, communities, and nations nurturing healthy relationships with the land, plants, and animals that provide Indigenous communities with food. Self-determination refers to the freedom for Indigenous communities to respond to their own needs regarding healthy foods and their ability to make decisions around the amount and quality of food that is hunted, fished, gathered, grown, eaten, and shared. Lastly, IFS attempts to reconcile Indigenous food and cultural values with colonial laws, policies, and mainstream economic activities. It provides a restorative framework for a coordinated, cross-sectoral approach to policy reform in forestry, fisheries, rangeland, environmental conservation, health, and agriculture, as well as in rural and community development (Morrison, 2011).

Land-Based Learning

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 in their culture (Bagelman et al, 2016; Bartmes & Shukla, 2020; Kenny et al., 2018). This is because the land is where Indigenous Knowledges, stories, and culture have been developed across generations (Battiste, 2013). 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 et al., 2021). Although physically being on the land is an important component of land-based learning, land-based learning goes much deeper than just partaking in outdoor activities (Streit & Mason, 2017). Land-based learning emphasizes Indigeneity and the relationships that Indigenous Peoples have with Mother Nature (Styres et al., 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 (Bowra et al., 2021).

Online Technology

Although we acknowledge that there are exceptions related to equitable access, generally this generation of children, both Indigenous and non-Indigenous, represent the first generation to have spent their entire lives surrounded by computers, cellphones, and all the other technology that we use today (Radoll, 2014). Within this study, online technologies are broadly understood as any technological platform or device that children utilize to share, engage with, and gather information that is

connected to the internet. Over 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, connect, and think about knowledge and learning (Prensky, 2001).

Indigenous children, 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 the 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 he found that Inuit students illustrated the importance of Facebook groups in their daily lives. One student noted, for example, "[through Facebook] I learn more about old ways and how things were done before" (p. 233). 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 & Berglund, 2021; Castleton, 2018).

Objective

Land-based learning and online technologies could be envisioned as distinct and separate, when perhaps they are not. There is no research to date exploring the relationship between online technology and land-based education as a way to engage children in IFS. Thus, by bringing together both Indigenous and Western ways of knowing through Two-Eyed Seeing, this study is based on the following research question: How can online technology and land-based learning come together to engage Mi'kmaw children in Indigenous food sovereignty?

Methodology

The data presented in this paper was collected as part of Bujold's master's thesis. Her thesis provides a more comprehensive overview of this study, including perspectives from child participants, which are not highlighted in this paper (Bujold, 2022). This study was guided by Etuaptmumk (which can be translated into Two-Eyed Seeing) and decolonial theory. Etuaptmumk is a Mi'kmaw word that represents the gift 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 (Marshall et al., 2015). Understanding and practising 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 (Institute for Integrative Science and Health, 2017).

Decolonial theory informs an approach to research that aims to explore and engage in decolonization. Although definitions of how decolonization is enacted within communities may differ, there are key features that characterize the process. These include decolonization being an empowering approach to restore Indigenous Knowledges and ways of knowing through self-determination (Alfred & Corntassel, 2005; Smith, 1999), cultural preservation (Lane et al., 2002), and respect for a holistic worldview (McKenzie & Morrissette, 2003). Decolonization also calls for the

restructuring of government systems to reconcile the harm caused by past and current federal government policies designed for assimilation. Within this conceptualization, decolonial theory is grounded in Indigenous empowerment and a belief that situations can be transformed by trusting in one's own peoples' knowledge, values, and abilities (Wilson, 2004).

Both Two-Eyed Seeing and decolonial theory seek to restore balance in narrative and world view by considering Indigenous Knowledges as equally valid as Western knowledges (Marshall et al., 2015; Smith, 1999). This research positions Mi'kmaw knowledge systems and stories about the land and food as central to participating in IFS and achieving holistic health, and necessary for shifting the narrative about Indigenous Peoples' health in research. For this reason, a narrative inquiry methodology was used for study.

Narrative inquiry is a process of gathering information through storytelling and the analysis of story (McCormack, 2004). Field notes, interviews, focus groups, autobiographies, and orally told stories are all methods of narrative inquiry (McCormack, 2004). Storytelling is a powerful and essential component of Indigenous research and should be respected as a way of sharing lived experiences, exploring personal beliefs and values, and discovering place-based wisdom (Cunsolo Willox et al., 2013). Indigenous storytelling enables the passing down of cultural and ecological knowledges that help maintain a sense of community among humans and ecosystems and instill spiritual values and Indigenous ways of being among storytellers and listeners (Archibald, 2008).

The Land2Lab Project

This study was situated within an intergenerational Mi'kmaw foods project called the Land2Lab Project. In 2019, community leaders from the Paqtnkek Mi'kmaw Nation and St. Francis Xavier University (StFX) developed the Land2Lab Project through a community-based participatory research approach (CBPR). The aim of the Land2Lab Project is to engage Mi'kmaw children in their community-held

knowledges and foodways. More information about the Land2Lab Project can be found elsewhere (Bujold, 2022; Bujold et al., 2021), and future publications will highlight the Land2Lab Project methods and outcomes. While related to the larger CBPR project, this study was distinct from the Land2Lab Project in that it considered how land-based learning and online technology can come together to engage Mi'kmaw children in IFS.

Study Participants and Recruitment

This study received ethical approval from Dalhousie REB and Mi'kmaw Ethics Watch. All participants involved in this study were provided with invitations to participate and provided written or oral consent. The Knowledge Keeper and child participants involved in this study were recruited through a collaboration between the Land2Lab Project and Connecting Math to Our Lives and Communities Summer Camp for Mi'kmaw children. Through partnering with the Land2Lab Project and the Math camp, this study was able to engage 14 Mi'kmaw children between the ages of six and 16 from three Mi'kmaw communities (Paqtnkek First Nation, Pictou Landing First Nation, and We'koqma'q First Nation) in a storytelling session led by Clifford Paul, a Mi'kmaw Knowledge Keeper and Moose Management Coordinator at the Unama'ki Institute of Natural Resources.

Study Setting

Data for this study was collected during a day-long workshop held at StFX University, located in Antigonish, Nova Scotia, which was hosted by the Land2Lab Project and Connecting Math to Our Lives and Communities Camp.

Methods

Below we describe two narrative inquiry approaches that were used within this study: a storytelling session led by Clifford Paul and a collection of field notes written while implementing this study that help inform the research question. Perspectives of child participants were also gathered during a researcher-led Q&A session during the

workshop at StFX, and these are presented in Bujold's (2022) master's thesis.

Storytelling Session

Clifford Paul led a 40-minute storytelling session about IFS at the end of the day-long workshop at StFX. During this session, Paul shared stories about IFS and illustrated through his own experiences how connecting to food, land, and community is the way toward leading a good life as a Mi'kmaw person. Paul's storytelling session was intended to share, inspire, and engage children in their community-held knowledges. It seemed to us that Paul was able to effortlessly engage the children and capture their attention through storytelling. The central role of storytelling in preserving Indigenous Knowledges and culture was evident during this session. This is why Paul's storytelling session is highlighted in this paper.

Field Notes

In February 2020, Bujold began writing field notes of her experiences with the Land2Lab Project and of practising Two-Eyed Seeing while implementing this study. The storytelling session is prioritized within the results; however, the field notes provide context surrounding land-based learning and online technologies and how the two approaches can come together to engage children in IFS.

Data Analysis

The storytelling session was audio-recorded and transcribed. The resulting transcript was de-identified. Analysis of the transcript from the storytelling session, along with the field notes, was followed by 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 narrative inquiry required full immersion in the transcript and field notes to get a sense of the stories being shared by Paul, along with our understanding of how land-based learning and online technology came together during the Land2Lab Project (O'Kane & Pamphilon, 2016). The second step in the analytical process was story preparation

(McCormack, 2004). The stories shared by Paul were arranged and considered in several different ways to determine how to address the research question while still upholding the stories that he shared with the group. The third step in the analysis was story creation (McCormack, 2004). This involved creating an interpretive story of Paul's stories alongside the field notes. The two lessons learned, which are presented in the results, were constructed by expanding on Paul's stories as much as possible so that meaning was not lost. The second lesson learned in particular is supplemented by the field notes.

Results

Two lessons learned from this study are presented here: (a) We Have to Create Food Stories on the Land Together and (b) We Can Prioritize Mi'kmaw Knowledge on the Land and Online.

We Have to Create Food Stories on the Land Together

Clifford Paul'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 his story so that children can see themselves and Mi'kmaw culture as strong, healthy, and—ultimately—the best way to live. Through engaging children in storytelling, Paul encourages them to go out on the land with their communities to build their own repertoire of community-held knowledge:

> *Mi'kmaw 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 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 sweetgrass. 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?

In this part of his story, Paul makes the relationships between learning on the land together with family and community and sharing stories of community-held knowledge clear. He urges the group to connect with individuals who have community-held knowledge so that the children can continue learning about Mi'kmaw 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 toward a common goal of balance in health is a fundamental aspect of practising Mi'kmaw foodways and engaging in IFS.

Paul further demonstrates the importance of this intergenerational teaching when he shares a story of a time when he was talking to a Mi'kmaw 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 community-held knowledge is enabled through intergenerational land-based activities. When we bring together multiple generations, the knowledge that is shared spans 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 through the

relationships developed and strengthened while on the land. Creating food stories on the land with all relations is intricately connected to Mi'kmaw community health.

We Can Prioritize Mi'kmaw Knowledge on the Land and Online

Teaching Mi'kmaw children how to bring balance to their life and health through their culture is a key element of IFS. Paul shares with the children his perspectives on how to achieve health by prioritizing being on the land and developing their own repertoire of community-held 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 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?*

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

We acknowledge that online technologies like social media and gaming have become an issue of contempt within many households (Procentese et al., 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, 2016; Pontes, 2017). Paul speaks to this

above, highlighting 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 and young adults—have acquired, surrounding the amount of time spent sitting in front of a screen and type of content consumed, is time taken away from other important learning activities. If we are not mindful, overuse of social media has been shown to contribute to deterioration of psychological health by increasing levels of depression, anxiety, and stress (Pontes, 2017). To prevent this, Paul encourages children to get outside to spiritually connect with their ancestors and environment, and to imagine themselves doing the same things their ancestors would have done hundreds of years ago.

Paul 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 necessary for learning Mi'kmaw foodways and for story formation, which benefits health in a myriad of ways (Auger et al., 2016; Bartmes & Shukla, 2020; Battiste, 2000). Having an online presence, however, can also potentially benefit children in forming their stories if used alongside land-based experiences in a way that upholds and centres Indigenous Knowledge Systems (Bujold et al., 2021).

Discussion

Building on the results, this discussion emphasizes storytelling as a necessary way to engage children in IFS on the land and online. We also discuss how land-based food experiences can support adults in engaging children in IFS and indicate that online

technology can assist us in this knowledge sharing.

Sharing Intergenerational Food Stories

Food is the link to our relationship with 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 that have been stifled by Western civilization—our deep-seated connection to Mother Nature. Through this process we can *all* 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 from Indigenous communities how to listen to what these relations can teach us, and how we can contribute to, and be in balanced relation with, the cycles and rhythms that exist in nature.

When we do this, we must also share our experiences and the knowledge we have gained with children in order for these stories to continue on. 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 and repertoire of community-held knowledges. Through our stories we can nourish children's minds and encourage them to get on the land. Furthermore, we can share intergenerational food stories that we formed from the land through online platforms and uphold knowledge within communities. It is our collective responsibility in reconciliation to listen to, engage with, and uphold Indigenous world views and narratives, and to share stories that have been silenced due to Canada's colonial history.

Indigenizing Technology

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, we see technology as a tool, and how this tool is used will determine how beneficial it will be in supporting land-based learning and engagement in IFS. Using technology with a Western world view 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 and experience the natural world. Through Two-Eyed Seeing, 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.

We have come to believe that the experience of being on the land, and the feeling of being in nature, cannot be formed from spending time online. Yet, online technologies in many ways have become a tool of activism and resistance toward colonization, whereby 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 with a Two-Eyed Seeing perspective that upholds and prioritizes Indigenous world views and stories may help ensure that Indigenous children are able to preserve the knowledges that Elders pass on to them, as well as providing the means to share and pass on their culture with future generations. The Mi'kmaq have always found their strength in their connection to the land and how they acquire food as community, and as Clifford Paul stated, these stories and relationships cannot end.

Conclusion

Food stories on the land need to be shared intergenerationally, as these stories are key to engaging children in IFS and connecting them to Mi'kmaw culture. The integration of land-based and online pedagogies acknowledges that both the land and technology

are important aspects of children's identity and, together, can enable them to explore their community-held knowledges (Bujold et al., 2021; Rice et al., 2016). This study leads us to indicate that we can share intergenerational food stories and Mi'kmaw knowledge online, as it is the storyteller that matters in terms of how they share their stories and how they have engaged in IFS themselves. Sharing food stories and experiences rooted in Western knowledges and pedagogy, however, should be approached with caution when engaging Mi'kmaw youth in IFS, as Western perspectives alone do not recognize or uphold the knowledge or relationships that Indigenous communities have with the natural environment and its foods.

Stories about Mi'kmaw foodways 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 Paul alludes, 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. Through prioritizing Mi'kmaw knowledge systems, intergenerational storytelling about IFS can engage Mi'kmaw children both on the land and online, supporting the protection of Mi'kmaw knowledge systems, foodways, and the health of future generations.

Acknowledgements

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The Long Story of an Indigenous Health Research Project

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Abstract

Indigenous health inequities represent a significant challenge for health research and programming. The research seeking to address these inequities also faces significant challenges. To guide researchers through these challenges, several resources exist. That said, the real world of Indigenous research is complex and contains much that, as experience suggests, is not accounted for by the existing resources. Therefore, this article tells the full and honest story of conducting research within largely Western systems and the barriers they present to Indigenous community-based health research that respects self-determination, OCAP, CARE and FAIR principles, and culture. When relevant to discussion, examples are provided from a recently completed COVID-19 vaccine promotion research project. In telling this story, many questions are posed, some of these are tentatively answered, and many are left for contemplation and future work. When answers are provided, they often stem from personal experience, and so, conclusions should be approached cautiously. Regardless, prioritizing respectful and authentic relationships appears to be a universal compass that can guide researchers to *the good way*. Still, more consistent and honest reporting of barriers, failures, and opportunities may be needed to truly reflect the challenging realities of ethical Indigenous research.

Keywords: Health equity; Indigenous health research

Self-Location (Acknowledgements)

This article is written, at times, from my own experience as a non-Indigenous person working in the broad realm of Indigenous health research. At other times, the perspectives of Indigenous colleagues are presented. Throughout most of my education, I learned very little about Indigenous Peoples, colonization, or Indigenous health. Before learning of the contemporary state of Indigenous health and the tremendous injustice and lost potential that emerge from inequalities of social determinants, an interest in health

equity and global health had emerged for me. During my undergraduate education, one lecture concluded with a brief comment on boil water advisories in Canada. These two or three brief sentences, only just making their way into the lecture before the class ended, spurred me to look further, truly hoping that they were an exaggeration. The search for more context was eye-opening, making it clear that the same issues driving me toward global health also exist in the country that I call home. As I continued to learn of the inequities in my own backyard, pursuing a career in global health felt increasingly hypocritical. With new

understanding, I immediately followed my undergraduate degree with a Master of Public Health, specializing in Indigenous Peoples' Health.

During my master's degree studies, considerable time and energy was spent searching for answers to how, as a non-Indigenous person, I could support Indigenous health research. I believed that I wanted to help, but felt there was too much I was not—and never would be—able to comment on. When describing this to a mentor and asking what it is that I could contribute, I was given advice that inspired this article. Specifically, I was told that all I could do was write and work from who I am. Therefore, this article discusses the challenges and opportunities that come from my non-Indigenous perspective. I have spent more than 20 years in a Western education system that provides rewards, through grades and scholarships, for adopting Western ways of knowing and doing. This undoubtably influences what is written in this article, and the reader should proceed with that understanding.

I must take this time to thank all those who have supported me throughout my education and career. There was so much I did not know or understand when I began down this road. My learning has relied on patience and guidance from many Indigenous and non-Indigenous teachers, within and outside academia. I have much left to do to reciprocate the valuable knowledge that has been shared with me. I hope that this article holds benefits that can begin to repay that debt. For inexperienced, non-Indigenous researchers, I hope this article can provide understanding around the nature of ethically engaged and community-driven research with Indigenous communities. Perhaps with this understanding, interest in conducting research of a similar nature will emerge. Beyond that, we (the authors) believe that barriers are not lifted until they are named—and we hope this article can initiate conversations about some of the barriers to conducting ethical research with Indigenous communities.

Introduction

This article's intention is to shed light on the complexity and requirement for flexibility that remain present within the rarely linear reality of Indigenous community-based health research. This endeavor will be pursued by discussing the full story of Indigenous community-based research and providing examples of some challenges and opportunities that one may encounter. Specific examples will be given from a recently completed Indigenous community-based vaccine promotion project (see Sullivan et al., 2023), when relevant to the discussion. At other times, academic literature and lessons learned from experience will be presented. The story of research will be discussed in three phases: Relationships, Proposal Writing, and Research and Reporting. As this story unfolds, questions will be discussed—for example, what are the effects of the lag between proposal writing and REB approval? Or what does operational funding mean to relationship building? Before delving into these questions or the complexities of Indigenous community-based health research, this article will briefly discuss some of the history that influences current guidelines, and what these guidelines have to say about ethical research with Indigenous Peoples.

In close harmony with the land, the Indigenous Peoples of Turtle Island (North America) accumulated considerable flexible, fluid, and adaptive wisdom (Battiste & Henderson, 2000; Kimmerer, 2014; Little Bear, 2009). The survival of early European settlers relied heavily on the generous and open sharing of this wisdom (Lemke, 2016). Today, Indigenous Elders and Knowledge Keepers are sharing wisdom on climate solutions, Indigenous agricultural advancements help feed the world, and many are kept healthy with a variety of well-known medicines discovered by Indigenous Peoples (Ansari & Inamdar, 2010; Cameron et al., 2021; Lemke, 2016). Still, Indigenous discoveries and knowledges have been largely appropriated throughout colonization, leaving many of us unaware of the tremendous scientific and philosophical

contributions Indigenous Peoples have made (Lemke, 2016).

While the advances made by Indigenous Peoples may not fit within the Western definition of "research," the underlying process of observing, hypothesizing, gathering knowledge, and drawing conclusions certainly does. Unfortunately, the dismissal of Indigenous Knowledges as research appears to extend into much of the research that has occurred on Indigenous Peoples. Despite Indigenous Peoples having "been researched to death," many of the inequalities this research should have lessened still remain today (Goodman et al., 2018, p. 1; Public Health Agency of Canada, 2018). There are many reasons for the failure to address colonially rooted inequalities—with helicopter research being among the most discussed (Ferreira & Gendron, 2011).

Helicopter research occurs when researchers enter Indigenous communities, conduct research, and then leave, never to be heard from again (Ferreira & Gendron, 2011). Absent from this approach are the voices of the Indigenous Peoples the research is concerned with. This marginalization of Indigenous voices parallels the treatment of traditional Indigenous Knowledges that, while emerging from a clearly "scientific" process, are typically only recognized by Western academia once appropriated by Western approaches. Helicopter research is entirely one-sided, excluding local knowledge and benefiting researchers while rarely, if ever, benefiting communities (Ferreira & Gendron, 2011). In fact, this misguided practice can misinterpret the Indigenous communities' lived realities and perpetuate negative stereotypes about Indigenous Peoples that have been used to justify systemic racism (First Nations Information Governance Centre [FNIGC], 2019). Negative stereotypes may be an expected outcome when research focuses on documenting deficits or needs rather than strengths or solutions (Chambers, 1983).

More than 30 years ago, Kirkness and Barnhardt (1991) called for changes to how higher education interacts with Indigenous students. From their work, the five R's of Indigenous research eventually emerged to include respect, relevance, reciprocity, responsibility, and relationships (Kirkness & Barnhardt, 1991; Wilson, 2008). Still, more than three decades later, the challenges detailed by Kirkness and Barnhardt remain, as evident by the expansion of research discussing what changes are needed to close inequalities in health, education, and employment for Indigenous Peoples (Absolon, 2011; Canadian Institutes of Health Research [CIHR] et al., 2018; Carroll et al., 2020). Needless to say, progress has been slow and is ongoing. Today, there are numerous evolving guidelines, statements, and training courses directing researchers on ethical conduct regarding Indigenous Peoples. Among these resources, the 2018 *Tri-Council Policy Statement 2* (TCPS-2)*, Ethical Conduct for Research Involving Humans* remains highly relevant to Indigenous research in Canada (CIHR et al., 2018). With an entire chapter and 22 articles dedicated specifically to ethical research with Indigenous Peoples, this resource remains a fairly comprehensive guide to the unique considerations that come with this work (CIHR et al., 2018).

With the caveat of "when / if appropriate," the TCPS-2 stresses that research with Indigenous Peoples must engage those Peoples, including their leaders, throughout research—from establishing recruitment criteria to analyzing data and mobilizing knowledge (CIHR et al., 2018, articles 9.1, 9.3, & 9.17). The nature of engagement can vary depending on the research, but should be determined jointly by researchers and the involved community/communities (CIHR et al., 2018, article 9.2). Still, it is recommended that researchers and communities consider applying a collaborative and participatory approach (CIHR et al., 2018, article 9.12). Additionally, research should benefit the participating community, and research contexts should determine whether this benefit be through hiring and training locally, enhancing the skills (capacity) of community personnel, or via some other avenue (CIHR et al., 2018, articles 9.13 & 9.14). Finally, the TCPS-2 highlights Indigenous-specific considerations to the treatment of data

or materials gathered, including their potential secondary use (CIHR et al., 2018, articles 9.18–9.20).

All these elements, and many more that were omitted for brevity's sake, are to be accounted for with a research agreement that is secured with community leadership, through community processes (CIHR et al., 2018, article 9.5). This agreement should be specific in detailing the terms and undertakings of both the researcher and the community (CIHR et al., 2018, article 9.11).

Research involving Indigenous Peoples in Canada has been primarily conducted by non-Indigenous Peoples (CIHR et al., 2018). Through practices such as helicopter research, the result has been research that can do more harm than good (Ferreira & Gendron, 2011; FNIGC, 2019). Therefore, the guidance offered by resources such as the TCPS-2 is much needed, and it should be no surprise that the TCPS-2 is just one of many resources available to guide researchers toward work that is meaningful and ethical for both universities and Indigenous communities (Global Indigenous Data Alliance [GIDA], 2019; Gower, 2012; McIlduff et al., 2020; Riddell et al., 2017). That said, these resources are guidelines, not instruction manuals, implying that justified deviations are possible. The TCPS-2 makes clear that it provides guidance only, and revisions will be required as research is implemented (CIHR et al., 2018). Further, Indigenous research methodologies are not static (Walter & Andersen, 2013, Chapters 3–5), and as they continue to evolve, it is essential that the institutions, funders, regulations, and guidelines they operate within evolve as well.

In this complex and ever-changing environment, satisfying obligations to community, university, and funders can present a significant challenge—especially when these obligations are in conflict. The creativity and flexibility needed to navigate conflicting demands remains an area where, in my experience, guidelines are insufficient. Further, informal conversations with experienced researchers confirms that my own experience is not particularly unique. Therefore, this article seeks to tell the honest story of research as it engages with largely Western systems and seeks to overcome the barriers they present to Indigenous community-based health research that respects self-determination, sovereignty, and culture.

The full and complex picture of Indigenous health research includes many perspectives, such as those of Indigenous and non-Indigenous researchers, Indigenous community members, university administrators, and funders. At this time, it would be unfeasible for the authors to present all these perspectives, for many reasons. Everyone likely has different experiences with this kind of work. For university administrators and funders, their experience is likely very different from that of researchers in the field. Perhaps a separate article written from the perspective of funders and administrators would be better suited than inclusion in this discussion. For the research team, fulfilling obligations to community and maintaining ethical relationships is always top priority. These obligations prevented the inclusion of perspectives from much of the research team. For partnered Indigenous community members, their time is prioritized for community obligations, which are many and prevent detailed inclusion of their perspectives here. For these reasons, this article paints a partial picture of Indigenous health research that occasionally focuses on a very personal, Western, experience-based perspective. Readers who have not done so are urged to read the earlier Self-Location section before proceeding further.

Phase One: Relationships

There are many explanations for why relationships are crucial for ethical research with Indigenous Peoples. Oster and Lightning (2022) provide excellent discussion, including the following:

> *Given the history of mistrust, exploitation and even unethical research practices with Indigenous populations, collaborative research partnerships necessitate good relationships. For our long-standing community-based*

participatory research partnership, trust in our relationships has been foundational. (p. 56)

Oster and Lightning (2022) provide detailed, valuable, and compelling discussion. This section, however, will primarily present the rationale that comes most naturally to the lead author as an individual, non-Indigenous, Western thinker. This is not at all to say that other arguments are less valid. Instead, the following rationale may serve to demonstrate some of the multiple pathways through which different world views can come to similar conclusions. Following this rationale will be a more detailed discussion of some considerations for building the authentic relationships with Indigenous communities that are needed for ethical community-based Indigenous health research.

The fact that health inequities introduced in the early days of colonization continue to exist today is evidence enough that what has been common research practice for decades has not been particularly effective (Ferreira & Gendron, 2011; Goodman et al., 2018, Public Health Agency of Canada, 2018). What has been relatively common, however, is helicopter research that silences Indigenous voices and limits self-determination (Ferreira & Gendron, 2011). Putting it mildly, this is troubling given that self-determination is considered by many as among the most important social determinants of Indigenous health (Greenwood et al., 2018; Nesdole et al., 2014; Reading & Wien, 2009) and is internationally recognized as a right of Indigenous Peoples (United Nations, 2007). Today, the importance of self-determination is reflected in ethical guidelines calling on research to involve Indigenous Peoples, as much and as early as possible, in any research that may affect their lives (CIHR et al., 2018; FNIGC, 2019; GIDA, 2019).

Self-determined, Indigenous-led solutions have a wide base of academic support (Fehring et al., 2019; Hart et al., 2021; Kipp et al., 2019; Muhunthan et al., 2017). Furthermore, cultural continuity is an important Indigenous determinant of health (Auger, 2016), yet "the intergenerational effects of colonization continue to impact the culture, which undermines the sense of self-determination" (Oster et al., 2014, p. 1). As a result, it is possible, and has been observed by the author, that individuals with cultural expertise may already be stretched thin by community commitments. There are historical examples of unethical research done *on* Indigenous communities, such as nutritional studies on Indigenous communities and residential schools (Mosby, 2013). Given this history, researchers cannot expect to simply enter a community and have their demands for guidance met. Therefore, a requirement that is inherent to conducting ethical, self-determined research *with* Indigenous communities is the formation of strong, trusting, reciprocal, and authentic relationships between researchers and potential co-researchers or participants (Kirkness & Barnhardt, 1991; Wilson, 2008).

1.1 Introduction to Relationship Building—The "R's"

Given that trusting and ethical relationships should be a prerequisite to research with Indigenous communities, the story of ethical Indigenous research begins with relationship building. For the relationships that allowed the vaccine project used as examples throughout this paper to occur, efforts to build trust began long before proposal writing. In fact, the lab has been conducting research *with* this community for several years and has built trusting relationships through previous work. To uphold this trust, new lab hires are mentored in cultural safety, and lab leadership only introduces potential collaborators to community if they will uphold the respectful nature of existing relationships. Often, potential collaborators and new hires will shadow lab leadership within communities so the lab's experienced staff have the opportunity to provide mentorship on culturally safe practices within those communities. Potential collaborators will also be provided with template research and partnership agreements to support their understanding of what the lab's partnering communities have come to expect.

Having community members trust that the lab will adhere to this practice ultimately expedites the formation of relationships between community members and new members of the lab's team and collaborators.

Relationships are built personally between individuals and families—rejecting guidelines of universality. Still, both academic literature and our experience at this lab highlight several seemingly ubiquitous aspects of relationship building.

Research with Indigenous communities must follow the five R's, meaning that it must be done in relationship and be respectful, reciprocal, relevant, and responsible (McGregor et al., 2018). By following the R's, the research team at the lab forms authentic relationships with Indigenous partners. Transparency and open discussion are used both throughout and before any conducted research, in an intentional effort to build trust and organic collaboration. To ensure authenticity, relationships extend far beyond the boundaries that typically define the researcher-participant relationship. In practice, this often means that researchers provide in-kind services whenever possible and requested. At the lab, this has included, but is not limited to, cooking and serving food at community events, supporting cultural events, and putting community's interests above those of funders or universities.

1.2 An Ethical Space

Researchers at the lab engage in cultural practices and acknowledge multiple ways of knowing, being, and doing. Engaging in cultural activities can range from smaller tasks, such as providing tobacco to an Elder for opening and closing meetings in prayer, to more time-consuming activities such as attending, upon invitation, Ceremony. When engaging in cultural practices, researchers directly experience multiple ways of being and doing. Because the doing is purposeful, it denotes a way of knowing that may be novel to non-Indigenous researchers like myself. These purposeful and authentic actions contribute to the creation of a safe and ethical space where multiple ways of knowing, being, and doing coexist on equal ground. This space is especially important for researchers who have emerged from a Western education system and, as a result, are influenced by Western ways of knowing and doing.

Western and Indigenous world views evolved to be different and unique in response to their distinct histories, traditions, and realities (Ermine, 2007). A safe and ethical space exists when two societies with different world views are positioned to engage each other, and it is believed that such engagement creates new directions for thought (Ermine, 2007)—something that the failure of academic research to bridge the research-to-practice gap, especially with Indigenous communities, suggests is needed.

Without creating a space for multiple ways of knowing, being, and doing to equally coexist, one may risk continuing colonial research practices where Western science extracts, misinterprets, and claims ownership over Indigenous Knowledges (Ferreira & Gendron, 2011). As Indigenous and Western world views are unique (Ermine, 2007), a space for multiple world views is required for the inclusion of Indigenous ways of knowing, being, and doing. It is within this ethical space that an iterative and equal synthesis of community expertise, Indigenous Knowledges, and Western research occurs.

This crucial ethical space is supported by the lab's mentorship model, which rejects the hierarchical relationships typically seen within research (Karnieli-Miller et al., 2009). This model recognizes that everyone has something valuable to bring to the table, regardless of age, experience, training, or any other factor. In employing a mentorship model and respecting and recognizing community expertise, the lab is admitting the need for co-learning, mutual capacity building, and organic reciprocity.

1.3 Respect

Researchers undoubtably bring valuable skills to the table; however, as evident from history (helicopter research), these skills can be misdirected and are limited by lack of shared lived experiences. The antidote to misdirection is accurate direction. In the context of

community-driven research, Indigenous or otherwise, accurate direction is found in community expertise (del Pino et al., 2016), because, after all, "you don't know what you don't know" (Absolon, 2011, p. 10). If we assess the value of contributions by the scarcity of individuals possessing the necessary expertise, community experts are far more valuable than researchers. As a result, a hierarchical researcher-participant relationship is entirely inappropriate when conducting community-based research.

When recognizing that the community member you are engaging with may be one of only a few individuals with their local cultural knowledge, respect or even reverence is an appropriate and rational response. Among the R's, respect is particularly relevant, given the others may organically follow its presence. For example, if you respect the community, it is imperative that you ensure research is reciprocal, relevant, and responsible. The effort of ensuring these R's are present varies and is dependent on the colonial systems you work within, as well as the understanding of colleagues and leadership of the R's and the necessity of sovereignty.

The typical label of "participant" suggests a passive role in research and reflects a hierarchical power dynamic within the researcher-participant relationship (Karnieli-Miller et al., 2009) that, as has been argued, is completely inappropriate. Recognizing this, the lab refers to participants as "co-researchers," and that terminology will continue throughout the remainder of this paper.

1.4 Cultural Safety

Ultimately, research at the lab strives to be conducted *in a good way*, meaning that research respects and benefits the community, while relationship building is intentional, strength-based, and acknowledges the lived experiences and expertise of co-researchers (AHA Centre, 2018). The formation of these relationships relies on staff who are self-reflexive in their pursuit of cultural safety (Gopal et al., 2022) while simultaneously holding one another accountable in their own efforts toward

cultural safety. The lab's research projects are strengthened by the relationship-dependent union of academic competencies and co-researcher expertise and contributions relating to cultural safety and cultural appropriateness, as well as the local context. This union would not be possible without researchers and co-researchers being mutually respectful and accountable.

Beyond the limits of academia, I have heard the process of approaching cultural safety described as walking down a road, only to realize how much further is left to walk. I have had many experiences where I felt I could finally see the distance I had left to walk, only to later realize that there is so much further to go. Therefore, discussion into what cultural safety looks like will be brief. Cultural safety involves one's reflection on power imbalance among relationships and is determined by the Indigenous person being engaged—and it is believed that the aspects of engagement described to this point contribute to cultural safety and can help prevent harm (Curtis et al., 2019).

1.5 Relationships and Operational Funds

Building the trusting relationships needed for meaningful engagement and self-determination can take significant time—perhaps many days, but potentially years. To bring trust and authenticity into these relationships, researchers at the lab go far beyond typically-funded research activities. Further, these relationships likely need to be in place before research begins, meaning that the potentially lengthy task of building these relationships typically precedes even the research funding applications process. Therefore, a lab seeking to engage in ethical research with Indigenous Peoples relies on an operating grant with enough size and flexibility to support this relationship work. In the absence of such operational funds, a lab may require its researchers to perform an unsustainable amount of unfunded and unpaid work. This represents a significant barrier to ethical research with Indigenous Peoples. For the operating grants that do exist, experience

suggests they are typically too narrow in scope to support the diverse priorities of communities. Having to refuse supporting a community priority because "that's not what we are funded for" does not exactly communicate authenticity in relationship building. Without operating grants that are sufficiently flexible and funded, the field may be missing the potential of any future work that emerges from strong, trusting, and authentic researcher-community relationships.

1.6 Summary

Ethical research with Indigenous populations must promote self-determination, and this requires it to be conducted with, not on, Indigenous Peoples. As a result, relationship-building and maintenance are the first steps in any research work. In building relationships, pursue authenticity. At the lab, this is achieved through open and transparent discussion and the R's (respect, reciprocity, relevance, and responsibility). To support relationships, researchers, especially those who are Western, must acknowledge and appreciate multiple ways of knowing, being, and doing without hierarchy. Furthermore, self-reflexive researchers can help promote cultural safety and support relationship building. That said, relationships exist between individuals, making them resistant to any universal guideline, especially given the heterogeneity of Indigenous Peoples. Next, the ways in which relationships are most present within research at the lab will be discussed.

1.7 Relationships in Action—The Community-Chosen Advisory Committee

Self-determination requires engagement, which requires relationships. That said, the degree to which a project is truly self-determined by a community and the degree to which a project is feasible may be correlated in a negative manner. On one extreme, you could complete community-wide surveys every time a research decision is required. The other extreme is represented by the widely criticized practice of helicopter research (Carroll et al., 2020). It seems that the highest degree of self-

determination is almost always beyond the limits of feasibility. Given that many Indigenous health inequities interact and can compound (Reading & Wien, 2009), inaction from those who are positioned to support a solution may also be inappropriate. Often, some degree of self-determination is sacrificed to ensure projects are feasible, funded, and implemented. In the lab's experience, the most feasible research approach allowing community direction that is meaningful and accepted by community is to support the formation of community-chosen advisory committees (ACs).

ACs are the primary avenue through which the voices of co-researchers are highlighted and brought into the lab's research. Once established, AC members ideally become active directors of research design, implementation, and mobilization. ACs are paramount to all research undertaken by the lab, and this is no accident. Providing a huge benefit to feasibility, ACs can act as a proxy of community-wide surveys and serve in an ethics-exempt advisory role. This allows for research decisions to receive community input without excessive delays or engagement-related budget increases (although AC members are compensated for their time spent advising the lab). However, there is diversity within Indigenous communities, just as there is diversity between communities. There will almost certainly be voices and perspectives within a community that are not accounted for in any given AC.

Unless an Indigenous community has access to funding and the capacity to navigate academia and complete their own research, the lab's experience is that establishing ACs is a good approach to ensuring community direction is meaningful and feasible. In particular, if capacity-building is included in a research project, ACs can serve as an intermediate step in the road to full Indigenous self-determination in academia. While the TCPS-2 does not require research to include capacity-building, it does stress that communities must benefit, and one avenue through which this benefit can come is through the additional building of skills (CIHR et al., 2018).

Establishing an AC requires answering the important question of which community members are most capable of reflecting the community's voice. Apart from researchers working in their own communities, one should not expect to walk into a community health centre and be immediately directed toward AC-eligible community members. ACs typically include local Elders, Knowledge Keepers, community research assistants (CRAs), and people with lived experience. If you do not have a community's trust, they likely will hesitate to connect you with these individuals.

When the researcher has trusting relationships formed within a community, the question of who qualifies for an AC appointment can be raised. The community, typically leadership such as Chief and Council or Health Services Directors, needs to be asked who qualifies for an AC appointment. The AC helps bring their community's voice into research, and having anyone beyond the community determine who can represent their voice is a clear violation of their internationally recognized right to self-determination (United Nations, 2007). Therefore, it is the community who nominates individuals to guide research through their membership on an AC. Membership for the AC may also occur more organically as existing AC members identify the need for additional community members to be consistently involved in the decision-making processes.

As mentioned, the lab's experience is that establishing ACs is a good approach to ensuring community direction is meaningful and feasible. Community acceptance of this approach is inferred from the community partner's continued interest in conducting research alongside the lab. Further, and in adherence with TCPS-2 articles 9.3 and 9.11, community leaders are engaged and formally enter a research agreement with the lab before every research project. Project-specific research agreements are accompanied by partnership agreements between the lab and all its partnering communities.

Research agreements allow for both the community partner and the lab to collaboratively establish the roles of each party with each new research project they take on together. Partnership agreements are overall agreements establishing how the lab and community partner will work together in response to community-determined needs, ensuring self-determination and sovereignty of the community partner at all levels of work done between the lab and the community partner.

Prior to the vaccine project, the lab had already established an AC within the partnered community, and it is this AC that brought their community's voice into this research, actively directed the lab on key decisions, and promoted their community's self-determination. This AC continues to guide the research throughout knowledge mobilization, and the included vaccine project examples in this paper are only being made public after their feedback, approval, and encouragement. In the vaccine project, funds were reserved for capacity building in the form of hiring and mentoring a new CRA to support the community's existing CRA. Through AC guidance, this budget item was adapted to support two younger, part-time CRAs as the AC identified a need to increase the engagement of younger members of the community. The research agreement for the vaccine project outlined the project clearly, with special focus on the roles of the researcher, roles of the AC and community, and collaborative roles. Data ownership and reporting requirements were clearly outlined, and the agreement was presented to, and signed by, the community's Chief before research commenced.

Phase Two: Proposal Writing

As has been argued, relationships are a prerequisite to ethical research with Indigenous Peoples. It is hypothetically possible that a proposal could be written before relationships are formed; however, relationship building is not formulaic, and it would be near impossible to develop a proposal that accounts for relationship building with any acceptable degree of accuracy in terms of activities, timelines, or funds required. This is a barrier to ethical research with Indigenous Peoples, as the

task of relationship building likely cannot be addressed by securing research funds and instead needs to be achieved before research funds can be applied for, particularly to allow for self-determination in this space.

At the lab, this barrier was overcome as partnering communities were engaged through mutual trusted contacts or through word of mouth, with other communities becoming interested in the type of work their friends' or family's communities were engaged in. Previously established relationships and reputation through word of mouth are both essential when establishing partnerships with Indigenous communities.

In the absence of previously established relationships, perhaps sufficiently flexible operational funding can alleviate the mentioned barrier to ethical research with Indigenous communities. Regardless, the assumption that you have existing relationships with an Indigenous community does not mean the complexity of Indigenous health research is simplified. In this phase, some considerations relating to barriers, opportunities, and lessons from proposal writing that seeks to uphold self-determination will be shared.

2.1 Funding Frenzy and Degrees of Engagement

Academia is fast paced and highly competitive. Within this space, success and survival depend on, quite literally, competing with peers for access to funding. In academia, competition exists for funding, prestige, and career advancement. Whether or not the benefits outweigh the costs of competition is certainly beyond the scope of this paper.

Competition does infer hierarchy, and this comes into conflict with the lab's non-hierarchical mentorship model. The lab can work to change the realities of academia but certainly cannot control them. That said, the lab has quite a bit of autonomy in how it operates and, as much as possible, applies for funding, publishes, and operates as a cohesive unit. Success at the lab is shared and largely measured by positive community impact, not necessarily fund application acceptance or publications. While both of the latter are important, the positive community impact is essential to ethical research with Indigenous communities.

Regardless of how the lab operates, competition is a reality of academia—with academic worth tied to productivity. As Brené Brown explains, "when worthiness is a function of productivity, we lose the ability to pump the brakes: The idea of doing something that doesn't add to the bottom line provokes stress and anxiety" (Brown, 2018, p. 128). When the bottom line is research, letting an opportunity for funding slip by is not exactly encouraged. After all, for the individual lab, it would be better to secure funding and alter a proposal or, at worst, return funding, than to lose out on those future options. The competitive academic environment compels researchers to apply for anything they may be able to secure and, if so fortunate, figure out remaining details later.

As funding proposals reflect intended research, then the highest degree of self-determination is realized when communities are engaged throughout proposal writing: from priority identification, throughout research methods and methodologies, and all the way to knowledge mobilization plans. Fortunately, there are funders who go beyond recognizing this to offering concrete financial support. The Saskatchewan Health Research Foundation (SHRF) offers the START Award, which "supports engagement activities aimed at building research teams and the collaborative development of research questions and approaches" (SHRF, 2022, p. 5). My personal experience of this award was overwhelmingly positive, as the program called for proposals detailing how Indigenous communities would be engaged in the writing of collaborative research proposals. At the lab, we were approved for a proposal describing how we would engage two of our partnering communities. With that funding, we were able to engage those communities and develop an Indigenous self-determined research proposal, which has since been approved and is currently being implemented.

I am certainly no expert on the many

funding organizations and opportunities that exist. That said, I have been made aware of another organization with a similar program. The Michael Smith Health Research BC organization describes their Convening and Collaborating Program as follows: "Co-developing research by engaging with stakeholders helps ensure the research is relevant, and can increase the likelihood of leveraging the award into additional funding from national and international sources" (Michael Smith Health Research BC, n.d., para 2).

When it comes to self-determination in research, I believe that SHRF and Michael Smith Health Research BC are providing strong examples of how funders can offer their support. Unfortunately, my experience is that the programs offered by these two organizations are not the academic norm. Without programs like these, it is not uncommon for proposal deadlines to arrive before a proposal can be written that is truly collaborative, from priority identification to knowledge mobilization plans. The community members you engage are community members first, with many community priorities at times taking precedence to research. These non-research priorities must be honoured for the relationship to be authentic and respectful.

As mentioned, inaction can be inappropriate—especially when an opportunity for funding that could benefit the community is presented. At times, it may be necessary that a proposal is written with little more than the community's priority, consent, and knowledge of their preferred research methods. This is not ideal, but also not necessarily a reason to abandon a potential project. The following section will describe how the lab responds to this challenge and will conclude with examples from the vaccine project.

2.2 Dynamic Communities, Dynamic Priorities

In the event that upcoming deadlines and barriers to engagement prevent a fully collaborative proposal, the dynamic nature of communities becomes an important consideration. This dynamic nature means that an issue identified as a priority during one month, week, or even day may not remain so in the next. There are a variety of causes for a community's shifting priorities, including the priority being sufficiently addressed without external support or perhaps the emolergence of other priorities of higher importance. Resources permitted, communities will be implementing a solution to whatever priority a proposal seeks to address.

The presence of a problem, and that problem being a community priority, does warrant investigating potential solutions. However, any such investigation must include any community-driven solutions that are currently being implemented or are planned for the future. In testing hypothesized solutions, conversations must occur to determine what the community has been doing or intends to do, as these interventions are self-determined, community-based solutions, and there is ample evidence of their effectiveness (Fehring et al., 2019; Hart et al., 2021; Kipp et al., 2019; Muhunthan et al., 2017). If academic pressures prevent such conversations from occurring, a proposal must have built-in flexibility to shift its investigation to any community-driven solutions, once identified.

In summary, the demands of academia occasionally mean that researchers must choose between inaction and the development of proposals with less-than-ideal levels of community engagement. If a truly collaborative proposal cannot be developed, flexibility is required to respond to community direction when later engagement occurs.

2.3 Proposal Writing—Lessons From Experience

When full engagement is limited, proposals should be developed with the flexibility required to adjust to the community's preference when later engagement occurs. While researchers at the lab are accustomed to the need for flexibility, funders and universities may not be. Therefore, to minimize disruptions to research, it is in one's best interests to reduce the need for flexibility to the greatest degree possible, without infringing on Indigenous

communities' right to self-determination.

For the vaccine project, competing researcher and community commitments meant the proposal was developed without full collaboration. While the proposal was structured to allow significant flexibility, previous experience with the proposed community partners reduced the amount of flexibility required. From this experience, methods and methodologies that have been preferred in the past were proposed, reducing the risk that major methodological alterations would be required when further engagement occurred. However, not everyone has years of experience with a given community. In the absence of this experience, academic literature can certainly be consulted and, perhaps, the experience of this lab can provide support. Therefore, before discussing the vaccine project, proposal writing lessons from academic literature and the lab's experience will be shared. That said, anything proposed that is not the direct result of engagement and collaboration should be done so with caution. Further, no two communities are exactly the same, and what is typically preferred by the lab's community partners may differ significantly from the preferences of other communities.

2.3.1 Methodology

Through its focus on involving community members as much as possible in any research affecting their lives, community-based participatory research (CBPR) has been considered a valid means to promote self-determination (Castleden et al., 2008; Dudgeon et al., 2017). CBPR frameworks equalize power imbalances within research, build trust between researchers and communities, and foster a sense of ownership over research (Castleden et al., 2008). Building trust is especially imperative considering the dishonesty that characterizes the historical experiences of Indigenous Peoples with the academic research community. Consequently, CBPR is generally considered a strong methodological footing for working with Indigenous Peoples and is often the methodology employed by the lab.

2.3.2 Methods

When selecting methods, the lab's experience is that qualitative approaches are generally preferred. Among the many options, sharing circles have been well received, proposed by the lab in the absence of sufficient engagement, and typically proposed by the community when engaged. Sharing circles are similar to focus groups, as researchers and community members gather information through group discussion (Berg, 2001). While protocols may vary between communities, sharing circles consistently differ from focus groups in the sacred meaning they hold for many Indigenous cultures (Lavallée, 2009). Generally, sharing circles are used as a healing method where information, spirituality, and emotionality are shared in an environment that is respectful, supportive, and free of judgment (Restoule, 2004). Through trusting and authentic researcher-community relationships, community-specific protocols can, and should, be gathered and followed. At the lab, methods are chosen to respect, support, and work toward healing with co-researchers to the greatest extent achievable. The healing nature of the circle, its atmosphere of respect and support, and the preference of partnering communities make it the most frequently selected method.

A tremendous value of sharing circles is that, according to partnering communities' protocols, the facilitator's role is passive. Academic failures to promote Indigenous health and equity may suggest that academic interpretations of what is happening within Indigenous communities—and what solutions are needed—have been inaccurate and ineffective (FNIGC, 2019). If this is the case, it follows that methods chosen that reduce the influence of researchers could increase the relevance of results. Sharing circles are a great method to address this possibility.

Generally, qualitative methods have been seen by Indigenous researchers as more appropriate for use with Indigenous communities than quantitative alternatives (Walter & Andersen, 2013, Chapters 3–5). In part, this is due to the observation that qualitative methods typically align more closely with community interests and agendas than quantitative methods (Walter & Andersen,

2013, Chapters 3–5). The lab's experience does not stray from this literature, with its work generally being guided by communities to gather more qualitative data than quantitative. Still, quantitative data holds tremendous value too. Statistics are the language of the state and, in being such, are well equipped to inspire transformational change (Walter & Andersen, 2013, Chapters 3–5). Walter and Andersen provide far more detailed and valuable discussion than will be included here, and curious readers are urged to review their work. The authors explain that quantitative statistics that are Indigenous-led, from the questions asked to the analysis performed, are likely to provide answers to questions that others never thought to ask. This could work to balance the current statistical landscape where non-Indigenous-led statistical analyses of Indigenous-specific data are inaccurately accepted as exhaustive descriptions of who Indigenous Peoples are (Walter & Andersen, 2013, Chapters 3–5).

2.3.3 Data Analysis

How data or knowledge is collected is certainly relevant for research with Indigenous communities; however, so too is how data is analyzed (Castleden et al., 2008). We all carry biases, and these biases are often influenced by our experience and training, yet are also resistant to training (Ballard, 2019). In 2019, it was found that 80% of Canadian universities have, or are developing, some form of strategic plan relating to reconciliation and the success of Indigenous students (Universities Canada, n.d.). That said, my experience is that Canadian education can, and should, still be considered largely Western. Therefore, there are likely Western biases that are common in researchers trained through academia.

At the lab, researcher bias in data analysis has been addressed by utilizing the Nanâtawihowin Âcimowina Kika-Môsahkinikêhk Papiskîci-Itascikêwin Astâcikowina (NAKPA) procedure. NAKPA, Cree for "Medicine/Healing Stories Picked, Sorted, Stored," is an Indigenous qualitative analysis approach adapted from the Collective Consensual Data Analytic Procedure (CCDAP; Starblanket et al., 2019). The CCDAP was developed to address the lack of community involvement in data analysis, and holds the additional benefit of reducing the risk of bias that any single person could bring into analysis (Bartlett et al., 2007).

NAKPA relies on group consensus and community input to organize data into themes (Starblanket et al., 2019). Following NAKPA protocol, researchers and co-researchers collaboratively organize anonymized sharing circle responses thematically by question. Following this, each theme is given a name and considered a minor theme. Once this process has occurred for each question, the resulting minor themes are, again, combined thematically through panel consensus, resulting in major themes (Starblanket et al., 2019). It takes little experience with the NAKPA procedure to see clearly the potential pervasiveness of researcher bias in qualitative analysis sans panel format. Important considerations for the NAKPA process will be revisited in Phase 3.3, Making Sense.

Regarding quantitative analysis, the lab's relatively limited experience with collection also extends to analysis, although any interpretations from quantitative analysis that the lab performs is always run by the appropriate AC to ensure accuracy and relevance. That said, Walter and Anderson's (2013) words remain relevant—Indigenous-led analysis is likely to prove valuable in balancing the statistical landscape with Indigenous-led answers to questions Western researchers may never think to ask.

2.3.4 Data Ownership

Once data is analyzed, the question of how it is stored requires consideration. Regarding storage, the literature is clear: the data belongs to the community, and it is they who determine how it is treated (CIHR et al., 2018; FNIGC, 2019; GIDA, 2019). Regardless of how the community determines the data should be treated, the data will always belong to them. It is, therefore, the community who must be consulted on any potential change to the agreed-upon treatment, whether this be changing storage location or protocol or considering

subsequent use of the data (CIHR et al., 2018).

The lab's team is knowledgeable and trained in the First Nations principles of OCAP (ownership, control, access, and possession), the TCPS-2 articles, and the CARE (collective benefit, authority to control, responsibility, and ethics) and FAIR (findable, accessible, interoperable, and reusable) principles (CIHR et al., 2018; FNIGC, 2019; GIDA, 2019). These principles have been developed to help guide researchers in overcoming the damaging practices of the past and promoting self-determination among Indigenous Peoples in research processes and data stewardship (Castellano, 2004). In Indigenous community-driven research, there is much that is beyond the control of researchers. That said, familiarizing yourself with these guidelines is something one can control and is certainly a requirement when working with Indigenous communities.

2.3.5 Knowledge Mobilization

Given that the knowledge (data) informing any learnings belongs to the community, how these learnings are shared also needs to be determined by the community (CIHR et al., 2018). Again, there may be many degrees of community involvement in knowledge mobilization. Because research agreements outline the expectations of researchers and community members, communities are aware of final reporting or publications requirements. Depending on the knowledge being mobilized, the community may have little interest in involving themselves in the process, but the lab recommends, at the very least, receiving approval from community members before mobilizing any knowledge. However, when preferred by the community, more active community involvement brings new interpretations and discussion to any published work, along with often innovative ways of mobilizing the knowledge beyond academia. When Indigenous community partners are actively involved in knowledge mobilization, which often occurs throughout the project when ethical and collaborative work is being done (Hutchinson et al., 2023), innovative and effective ways of sharing are inevitable outcomes. Previously, community partners have

guided the lab to develop government briefs, storybooks, information pamphlets, resources to support culturally safe services, and more.

2.3.6 General Insights

Beyond methodologies, methods, data analysis, data storage, or knowledge mobilization, the lab has found there are certain practices that are generally beneficial when writing proposals in the absence of full engagement. For example, any methods recommended to funders are done so with caution. In nearly every funding proposal, the lab integrates some variation of the following: "While overly detailed methods and methodologies ultimately infringe upon Indigenous Peoples' right to self-determination, previous experience suggests that the following will be preferred. That said, methods must be responsive to community direction." The inclusion of these two sentences is a concrete and easy-to-implement example of integrating flexibility into a research proposal.

Research must benefit community (CIHR et al., 2018). At the lab, this benefit often comes through addressing a community priority and, ideally, implementing a community solution. That said, some community-identified priorities may provide less tangible community benefit than others. Still, integrating capacity building into all research proposals provides concrete community benefit. As mentioned, establishing ACs is a good approach to ensure meaningful community direction. Some communities have capacity and experience navigating funding and implementation of programs and projects, but for those who do not, building this capacity is often a priority. Building community capacity to navigate funding bodies, research implementation, and academia moves various fields toward self-determination. At the lab, proposals will near-universally include funding for CRAs, and the vaccine project followed this trend. CRAs mentor researchers on cultural and community factors, while researchers mentor CRAs in the world of research. The benefits of this mutual capacity building are numerous and justify its integration into nearly any research.

2.4 Proposal Writing and the Vaccine Project

For the vaccine project, a last-minute proposal was developed with the knowledge that two partnering communities had expressed COVID-19 vaccination as a challenge and priority. That said, barriers such as those described in Phase 2.1 prevented a truly collaborative proposal from being submitted. Rather, knowledge of community priorities, awareness of funder preference, and experience working with both communities drove the proposal's development. Flexibility was built into the proposal to allow for community guidance when further engagement did occur; however, this section will highlight an easily avoidable and costly mistake that stemmed from an insufficiently flexible proposal.

The vaccine project had three related aims: bring an Indigenous voice into the conversation around COVID-19 vaccines, understand Indigenous vaccine hesitancy and confidence within partnered communities, and identify effective strategies for promoting Indigenous vaccine confidence. To pursue these objectives, the project intended to pilot social media interventions (posts) in the two communities, comparing different messaging techniques. The project hoped to gain a better understanding of how historical and contemporary forces influence the landscape of Indigenous vaccine hesitancy. After an informal literature review, the messaging techniques employed by conspiracy theories and behavioural insights were selected for piloting. The proposal planned for one community to receive behavioural insights, while the other would receive the conspiracy theory arm to allow for comparison. However, the choice of which community received which strategy was not defined. We had planned to present both options to both communities and, if they requested to receive the same strategy, we would adapt the approach as required.

The first draft of each post would be developed from literature pertaining to the different techniques as well as academic- and AC-identified sources of COVID-19 vaccine hesitancy. Next, ACs for each community would be engaged to provide feedback and edits. Edits would be taken to the lab and addressed, and then new posts would be presented, with this process continuing until all posts received AC approval. It was in engaging the AC that the research hoped relevant historical and cultural factors would be reflected in the posts. That said, AC feedback was not to be limited to cultural or historical factors, as this would infer that those factors are the only ones where AC knowledge holds value. After piloting the posts, researchers were to gather social media analytics, compare techniques, and conclude the project with a sharing circle.

As Hutchinson et al. (2023) explain, combining researcher skills with community expertise requires continuous and multidirectional knowledge mobilization throughout the research process. For the vaccine project proposal, the lab's universal inclusion of multidirectional knowledge mobilization through authentic relationship-based research was employed. Further, it was predicted that co-researchers and CRAs, through their community presence, would mobilize relevant knowledge to their community. This sharing of information from trusted members of the community can help bridge the research-to-practice gap (Hutchinson et al., 2023). Additionally, the vaccine project proposal dictated that any knowledge mobilization activities would require the approval and, if interested, involvement of the community.

As you can see from this description of the project's proposal, flexibility was allowed in relation to which messaging techniques each community received, as well as the form and content of piloted posts. Furthermore, sharing circles and NAKPA analysis were proposed, given that this is often preferred by the communities. While this project did propose some quantitative data collection and analysis, social media analytics referred to the performance of the different piloted posts. Therefore, the proposed quantitative approach could not be seen as a description of Indigenous Peoples, their communities, or their lived or living experiences. However, as will become clear, deviations from this proposal were

required.

The vaccine project was identified as a priority in the summer of 2021 through routine engagement and relationship work in two communities; however, the project was not approved until several months following this engagement. For one of these communities, the vaccination priority identified in the summer was no longer a top priority when funding was approved. As mentioned, communities are dynamic and so are their priorities. Despite this setback, the other engaged community remained interested in the project and, most specifically, in bringing Indigenous voices into the controversial space surrounding COVID-19 vaccines (Priebe et al., 2022; Verd et al., 2022). As a result, the lab scrambled to convert a project conceived for two communities into work that could feasibly be completed within one. This change required no shortage of flexibility from researchers, university, community, and funders.

In moving a two-community project into a single community effort, some sacrifices to the initial plan were made. The number of posts representing each messaging strategy (conspiracy theories and behavioural insights) needed to be reduced. Further, increased engagement was required to approve social media posts, as now a single AC was required to familiarize themselves with the strategies relating to conspiracy theories as well as those employed by behavioural insights. A research agreement was drafted and signed reflecting these changes, as well as detailed descriptions of the responsibilities of community, the AC, and researchers, along with shared responsibilities.

At the lab, researchers are accustomed to the near-constant need for flexibility, and the community members we work with are often equally, or more, accustomed to this requirement. Funders and universities, however, are more accustomed to detailed timelines and work plans. For this project, the University of Saskatchewan—specifically their Behavioural Research Ethics Board—and the fund administrators at Global Impact deserve to be recognized and commended for their support and flexibility through these changes.

While the project was able to proceed with some changes, there was one entirely avoidable error in the initial proposal that could not be overcome. A major aim of the project was to identify effective strategies for promoting Indigenous vaccine confidence. To do this, the project looked to the literature for promising, if somewhat subjectively determined, messaging strategies (potential solutions). The intention was to pilot these strategies to see which were most effective.

Academic literature is well established on heightened vaccine hesitancy among Indigenous Peoples due to experiences of racism and unethical research (Mosby & Swidrovich, 2021). Therefore, this project was conceived with the assumption that vaccine hesitancy would be, and remain, high within the partnered communities. While this idea was supported by conversations with community members who indicated that achieving high vaccination rates was a community challenge and priority, the proposal incorrectly assumed that this priority would remain present months after proposal writing. Subconsciously, this error included the deficit-based assumption that vaccine hesitancy would not be overcome without external intervention.

The research, especially the sharing circle, provided valuable understanding to the nature of Indigenous vaccine hesitancy and how it can be overcome. That said, this understanding could have been much stronger. The proposal recognized the importance of community's involvement in solutions, and community feedback was a significant influence on the piloted posts initial drafts and final forms; however, insufficient attention was given to the solutions conceived and implemented entirely by community members. The proposal, unfortunately and avoidably, lacked the flexibility to shift from investigating the academically "promising" solutions to investigating the community-driven and -implemented solutions. The piloting of external solutions is only an appropriate way to understand what can be done to support vaccine confidence if what is currently being done is not effective. If what is currently in place is effective,

our pursuit of understanding should shift to understanding what Indigenous communities are currently doing to successfully promote vaccine confidence.

Throughout the project, conversations with community members repeatedly made clear the success of the local Pandemic Response Team. Embarrassingly, the consultation of literature that determined which solutions were "promising" had overlooked the golden rule of Indigenous health: self-determination is best (Greenwood et al., 2018; Nesdole et al., 2014; Reading & Wien, 2009). By piloting interventions that included community feedback only as a component, we unintentionally inferred that the knowledge reflected in community feedback was insufficient to stand on its own and to stand worthy of investigation or piloting. If the project's testing of potential solutions had included a closer look at the community's efforts, we would better understand how to replicate their success.

2.5 Proposal Writing Conclusions

Truly collaborative research proposals are highly valuable, but not particularly common or supported. While this certainly risks research moving toward helicopter approaches, there are actions researchers can take to hold space for self-determination within minimally engaged proposals. Generally, limited engagement during proposal writing means more flexibility will be required for the proposal writing or research implementation. This flexibility is required by all those involved in research. Proposals should be as flexible as communities are dynamic. Proposals looking to investigate potential solutions to a community-identified priority must be sufficiently flexible to avoid the unintentional, deficit-based, and costly mistake of the vaccine project. Self-determined solutions are effective (Greenwood et al., 2018; Nesdole et al., 2014; Reading & Wien, 2009), and proposals need to reflect this by, at the very least, investigating community-driven solutions alongside external solutions. Even if the researcher is unaware of any solution the community is implementing, a proposal should still be written to allow investigational focus to shift over to anything the community may end up deciding to implement.

In the lab's experience, the requirement for flexibility can be reduced by consulting relevant literature and previous experience. Also from the lab's experience, CBPR approaches, qualitative methods such as sharing circles, and panel data analysis are preferred research approaches. It has been briefly argued here that approaches that limit the influence of researcher bias may hold significant value. Further, there may be much to gain from quantitative measures, as long as they are Indigenous-led. As research concludes, data must be treated according to community guidance—and this guidance remains imperative as knowledge is mobilized, especially in how the data is shared externally or academically. By integrating research capacity building and cultural capacity mentoring into proposals, community research capacity increases while researchers' cultural capacity also increases.

Phase Three: Research and Reporting

With relationships formed and a truly collaborative—or sufficiently flexible—funding proposal approved, research can finally begin. However, researching in a good way with Indigenous Peoples is complex. Some of these complexities have been discussed previously, such as the dynamic nature of communities or the pressures of Western/colonial academia. Still, complexities remain as research is implemented, and these will be the focus of Phase Three: Research and Reporting. This phase will provide general discussions of REB writing (3.1), data collection (3.2), data analysis (3.3), and knowledge mobilization (3.4). Specific examples from the vaccine project will follow each general discussion.

3.1 Ethics Application Writing

Research Ethics Board (REB) application writing is generally straightforward; however, there are certain complexities and opportunities that are unique to research with Indigenous

Peoples. Indigenous research methods and methodologies may differ considerably from the Western approaches that are likely more familiar to an institution's REB. This can lead to research delays as lab members are required to provide lengthy explanations for the inclusion, or exclusion, of certain elements of their REB applications. For example, institutions may have clear rules for data storage that conflict with Indigenous data ownership. As researchers spend time justifying their REB application, the dynamic nature of communities remains, potentially limiting the responsiveness of the planned research. Few proposals are written to budget for unexpected delays in REB writing and approval. Therefore, as researchers attend to the concerns of the REB, operational funds are used that are needed to maintain relationship authenticity and build new relationships.

Barriers do exist at the REB stage of research; however, these barriers may present opportunities. As mentioned, including capacity building within research proposals is a good approach to moving a community closer to true self-determined research. These increases in community research capacity, however, may require accompanying increases in academia's cultural understanding and safety. Discussions with REB members provide researchers who have front line experience the opportunity to share their experiences and knowledge. This dialogue can ultimately serve to increase the cultural understanding of administrators who may otherwise not have the opportunity. Every new administrator who understands the importance of tobacco offerings as an Indigenous protocol or sharing circles is a benefit to the field.

3.1.1 REB Writing and the Vaccine Project

In the vaccine project, a drawn-out REB process provided the opportunity to engage an REB member in lengthy discussion about some of the lab's commonly employed methods. The lead author's experience was that the individual engaged was eager to understand the role of the AC and the nuances of a sharing circle. What ensued was mutual knowledge-sharing, where the author gained a deeper understanding of what is required for the REB while the REB

member gained a deeper understanding of the realities of research with Indigenous Peoples.

The vaccine project included funding for a CRA that was intended to increase the community's research capacity. In addressing REB concerns, there was also a small but important increase in the cultural understanding within the university's REB. This opportunity for mutual knowledge sharing is only possible when both parties are willing and open to have a conversation outside of their acknowledged sphere of understanding—humility and transparency here are imperative.

3.2 Gathering Knowledge

When researching with Indigenous Peoples, knowledge is gathered in many ways and at many times. Of course, there is knowledge gathered when implementing research methods, such as sharing circles. Occasionally, research methods will have community-specific protocols. When these exist, they must be followed. For example, the vaccine project engaged a CRA to gather community-specific sharing circle protocol. In implementing methods, seek guidance from community on protocols and continue to ensure you are respecting the relationships underpinning the research. Formal research methods are fairly straightforward and will not be the focus of this section. Instead, the knowledge that is shared while engaging community will be discussed.

Indigenous research is engagement heavy, and this engagement is purposeful. Generally, engagement occurs to promote self-determination, to ensure the voice of co-researchers is present and meaningfully reflected in research and that space is created for mutual knowledge mobilization throughout the research process (Hutchinson et al., 2023). This suggests that engagement brings some knowledge or understanding to research that was not present beforehand. Therefore, phone calls, informal interviews, and ethics-exempt advisory meetings with Indigenous co-researchers all represent valuable, and necessary, opportunities to gather and share knowledge. A separate publication on the vaccine project presents outcomes of AC

engagement and informal community interviews alongside sharing circle results and social media analytics in the results and discussion sections.

Regarding informal interviews, barriers to engagement may force a rather expansive definition of "informal." One can never be certain when valuable sharing will occur. This is especially true when so much of the research process is dedicated to authentic relationship building. Therefore, information that ultimately proves invaluable to research may be shared in the most unlikely circumstances—for example, following highly competitive games of minigolf, go-kart races, or when eating a meal together or walking/driving together to a destination.

Within any opportunity to engage community, relationships come first. In these exchanges, community members and researchers may joke, catch up through chatting, cry, pray, and support each other. While this is always indirectly important to the research, as it maintains relationships, much of these interactions are informal and not directly relevant to research results. Of course, researchers have the community's consent to take notes and gather knowledge shared during engagement. Further, any data sharing is always done so with community involvement and consent. That said, researchers may still need to draw some line in the sand of what "data" they attend to and consider. In making these decisions, the risk of introducing researcher bias is high. From the perspective of a non-Indigenous academic, what qualifies as data worth gathering is an important question—and one I grapple with frequently.

3.2.1 Defining Knowledge

No amount of cultural safety training will ever leave me truly understanding the experiences of Indigenous Peoples. Further, Indigenous and Western world views and ways of knowing are distinct (Ermine, 2007). In determining what is and is not data, these differences are imperative. If I use my own, largely Western-influenced assessments of importance, I am subjugating everything else that has been shared to Western definitions of importance—an idea that is clearly colonial.

Therefore, in considering the vast knowledge that is shared throughout the engagement needed for Indigenous research, self-reflexive researchers are a requirement.

As a non-Indigenous person, my experience with Indigenous Peoples, their Knowledges, and, thankfully, no shortage of their patience has repeatedly shown me how cautiously I should approach my initial reactions to information that does not align with my world view. Given that we understand ideas through our world view, I still do require some kind of Western explanation to truly understand what is shared with me. In the absence of these explanations, however, respect is present, and ideas are accepted on the basis that an inability for Western science to produce an explanation does not mean one does not exist or that the ideas are invaluable. Now I lean heavily on the saying, "you don't know what you don't know" (Absolon, 2011, p. 10). Of course, I feel confident that I truly do know that comments on the quality (or lack) of my mustache are not directly relevant to vaccine promotion. On the other hand, there are clear examples of comments that are directly relevant to the research—for example, what a co-researcher is hearing from their community about vaccine concerns. That said, a grey area exists, and I imagine that the width of this area, while decreasing with experience, may never disappear. Within my grey area, there are also comments that I strongly believe are relevant but do not quite understand.

The grey area exists because I am not fully capable of understanding all that is shared with me or how it may be relevant to the research project at hand. Clearly clarification is needed. Ideally, this clarification arises by simply asking for further explanation during the engagement where the comments were offered. However, admitting you do not understand or are not following the conversation can be difficult, and interrupting a rapidly expanding conversation can be inappropriate and awkward. Sometimes, grey area comments must sit in a temporary space for future reflection and exploration. At the next appropriate opportunity, guidance can be sought on the

meaning of these comments from community members, co-workers, and mentors. Other times, the importance of a teaching or comment changes over time as more teachings are offered.

With researchers receiving community guidance, input, and approval throughout the project, it is assumed that the community will ensure relevant grey area comments are reflected in research. That said, this grey area is very real and relevant for me as a non-Indigenous researcher. Given its presence risks bringing bias and colonial practices into research, it was brought into this section and out of the wide grey area of importance informing this paper.

3.2.2 Gathering Knowledge—the Vaccine Project

I have little doubt that, throughout all the vaccine project's engagement, there was some knowledge that I failed to understand the importance of. Still, a separate publication concerning the project's results has been approved by the AC guiding the project. Here is one example of a comment that was offered, the importance of which grew considerably with time. While we were collaboratively developing the social media interventions with the AC, a co-researcher commented that anything we say must be respectful. It was easy to accept this, given that we are always guided by community and respect is one of the R's required for research with Indigenous Peoples. As more literature was read and sharing circle results emerged, however, the importance of respectful messaging grew. It is important to note that the co-researcher who shared this knowledge, from their world view, may still define the importance of respect differently here. As mentioned, being Western, my own understanding emerges from Western explanations. However, the importance of respect in this research context, as I understand it, is that people have legitimate concerns around vaccines, and the online anti-vaccine community has been shown to recruit undecided individuals far quicker than the pro-vaccine community (Johnson et al., 2020). In part, this is because anti-vaccine online groups (clusters) are more dispersed throughout online spaces and provide a larger number of sites for engagement than pro-vaccine communities (Johnson et al., 2020). The result is that anti-vaccine clusters entangle themselves within the network of the vaccine hesitant in a manner that pro-vaccine clusters do not (Johnson et al., 2020). Therefore, if we fail to respect an individual's concerns around vaccines, the anti-vaccine community is present and ready to give people they respect they require.

Most knowledge informing the project was gathered while implementing research methods and during AC meetings. That said, there were instances in which far more informal engagement was needed to gather the knowledge and perspectives the project required. For example, one of the project's co-researchers was approached after a game of mini-putt for insights for final reporting. In this example, activities that help maintain the authentic relationships required for research also provided opportunities to gather knowledge. Engaging co-researchers at games such as mini-putt is far from the norm at the lab, as most engagement occurs during regularly scheduled AC meetings. However, when researching a broad topic like vaccination, it is quite possible that perspectives will be needed that do not exist within a previously formed AC. By continuing to rely on AC guidance to determine if additional perspectives are needed and, if necessary, in identifying those people with needed perspectives, research continues to respect AC knowledge and adhere to the TCPS-2 (CIHR et al., 2018, article 9.15).

In the vaccine project, one of the social media posts included a vaccination-promoting meme. While there are certainly Elders who are familiar with the meme format, the Elders on this project's AC were not, as was made abundantly clear by the awkward silence that followed attempts to get feedback. Thankfully, the AC interrupted my embarrassment by quickly making it clear that a younger perspective was needed. After the AC identified community youth who could be engaged, and then provided an introduction, research was able to proceed with the perspectives it required.

3.2.3 Gathering Knowledge Conclusions

Gathering knowledge, in the engagement-heavy reality of Indigenous research, extends far beyond that which occurs when performing typical data collection methods. Crucial data is gathered in the engagement that precedes research, occurs throughout it, and follows later analysis. Non-Indigenous researchers need to practise caution while weeding through all that is shared during authentic engagement. Further, just as community is engaged initially to identify who should be involved throughout a project, those identified may also recommend additional individuals to be engaged.

3.3 Making Sense

In the previous section, the treatment of knowledge (data) gathered during engagement was discussed. Here, experiences and observations will be shared relating to making sense of data gathered through formal data collection methods. During my time at the lab there has been limited use of quantitative data, making my experience with quantitative analysis with community members limited. Still, the general approach of including community members as much as preferred and possible remains relevant. Beyond that, the author is in no position to provide discussion. This subsection will focus on qualitative data, given that it is often the data preferred by the communities we work alongside.

As mentioned, the lab has relied almost exclusively on the NAKPA analysis procedure for qualitative data. The NAKPA process was described previously (2.3.3), but its reliance on community input, a panel format, and consensus should be reiterated. Firstly, community input is required by ethical guidelines. Further, as will be argued, the differences between Western and Indigenous world views can cause problems when qualitative data stemming from one world view is analyzed solely from the other. In Phase 2.3.3, it was mentioned that little experience is needed with the NAKPA procedure to see the potential pervasiveness of researcher bias in qualitative analysis without a panel format. This

idea will be expanded upon through discussing the experiences of the vaccine project.

3.3.1 Making Sense in the Vaccine Project

During the vaccine project's sharing circle, there were several complex quotes offered. While sorting these quotes with the NAKPA procedure, I was amazed at how many different ways any given quote could be sorted. After the first reading, I often had what I thought was a clear idea of where a quote should be thematically placed. As co-workers and community members offered their perspectives, however, it became clear that the analysis would look very different without the panel. Further, even between people with similar academic backgrounds, there are many ways to interpret qualitative data.

There was a wide diversity of opinions presented over the course of applying the NAKPA procedure to the vaccination project data. This appears to suggest that, depending on the composition of one's panel, the results of the following analysis could look very different. One purpose of the methodologies employed by the lab is to respectfully bring the voice of community into research. Given that the voice of the analyzers is certainly present when analyzing qualitative data, community inclusion in this process remains crucial.

Ultimately, the panel format introduced by CCDAP and NAKPA reduces the influence of any single person's biases over analysis. However, the composition of one's panel appears to also affect its results, meaning the panel cannot completely eliminate bias. Indigenous societies evolve—and as they do, it is reasonable for Indigenous methodologies to follow suit (Walter & Andersen, 2013, Chapters 3–5). Perhaps future evolutions of methods will be able to eliminate bias; however, given the current reality, it may be beneficial for those who participate in NAKPA analysis to provide self-location posts, similar in purpose and content to the one found at the start of this article. There are many benefits to qualitative data, and many benefits to analyzing it with NAKPA, but there may remain opportunities for improvement.

3.4 Sharing

After gathering knowledge and, with community's guidance, making sense of it, we are ready to begin considering how we will share the findings of our research. Given that the data informing these findings belongs to the community, how we interpret the data and report our interpretations requires community oversight, approval, and recognition (CIHR et al., 2018).

The question of how we share is inevitably influenced by academic pressures (Anderson & Cidro, 2019). Still, one should want to share in a manner that allows the greatest transmission of knowledge. If academic pressures limit sharing, creativity may be required. The Uncle Paul and Auntie Doris principle suggests that results should be meaningful to the Uncles and Aunties of a community and communicated understandably (Kovach, 2018). Indigenous scholars have described storytelling as a highly effective and accessible manner to convey meaning (Cidro, 2012). However, some may view storytelling as an oversimplification of data for the purpose of accessibility (Cidro, 2012).

The three-act structure is widely observable in the stories we read and watch (Field, 2005). The three acts are the set-up, the confrontation, and the resolution (Field, 2005). The academic contributions of a journal article are the resolutions to the confrontation presented by a previous gap in knowledge. The set-up is found in the introduction and background sections. Therefore, traditional Western academic knowledge translation contains elements of storytelling. The difference between academic knowledge translation and Western storytelling, therefore, is not necessarily in their underlying structural elements.

As I consider this section, I realize the hypocrisy of stressing accessible sharing while writing in a manner that is, subjectively, inaccessible to many. That said, the intended audience is relevant in determining how we share. This article's audience is not necessarily the Uncles or Aunties of any given community, unless they happen to work in academia…

Regardless of how sharing occurs, the question of whether publishing is appropriate is also relevant. As mentioned, the lab is driven by community—and the lab's experience is that the community's priorities rarely lie with academic publishing. When one project is completed, a new priority often becomes the community's focus. This presents a barrier to community participation in the writing of research articles. Furthermore, it can significantly limit the number of publications produced by principal investigators doing this kind of work. Therefore, the recognition that publishing quantity may not correlate with the quantity or quality of research done with Indigenous communities is imperative, especially for career advancement. When career advancement, and the influence that comes with the territory, relies largely on publications, those who do ethical work with Indigenous communities may be doing this important work at the sacrifice of their career's long-term trajectory within academia. Furthermore, with limited publications, securing the operating grants needed to support ethical research with Indigenous Peoples may be significantly affected. If the purpose of research with Indigenous Peoples is to provide meaningful and desired community benefit, publications do not appear a suitable manner to determine advancement in the field.

3.4.1 Sharing the Vaccine Project

This article has focused much on frequently experienced but rarely discussed challenges and barriers that are unique to ethical Indigenous health research. The vaccine project provided many examples of the rarely linear reality of Indigenous research. However, rarely linear does not mean never linear. When no threat to confidentiality was present, results were presented to the AC and confirmed over the course of research. Permission to prepare a publication was granted, and the early drafts were well received. Multiple community members were included as authors in the publication, and two in particular were heavily involved. This involvement brought new observations, confirmed interpretations, and added depth and relevance to the work. It can be difficult to include community members in the

lengthy process of publishing a research article, as described in *3.4*. That said, when community involvement can occur, the work truly benefits.

Conclusion

Much exists to guide researchers toward ethical, self-determined research with Indigenous Peoples. Despite the tremendous value of these resources, researchers are still faced with barriers that guidelines don't fully address. Waiting until all barriers are lifted is not appropriate, and so, this article shares experience-derived approaches that can mitigate some risks. Describing anything as universally relevant to Indigenous Peoples risks pan-Indigenizing; however, prioritizing respectful and authentic relationships appears to be a universal compass that can guide researchers to a good way of doing research. Still, more consistent and honest reporting of barriers, failures, opportunities, and innovative community-led solutions may be needed to truly reflect the challenging realities of responsive, self-determined and ethical Indigenous research within colonial systems that do not always support the flexibility required. It is by sharing these experiences and barriers that colonial systems can be challenged by those who are working to straddle two world views and ways of knowing and doing while still meeting expectations in both. These systems require dynamic, understanding, and flexible processes in order to be responsive to the dynamic and complex requirements of ethical, responsive, and self-determined research, in order for their commitment to truth and reconciliation to be fully realized.

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Performing at the Intersections: A Literature Review of Applied Theatre, Climate Change, and Their Impacts on Mental Health Among Indigenous Youth

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Abstract

Introduction: Theatre is infrequently used as a method to research experiences of climate change and its mental health impacts among Indigenous youth. It is unclear, however, what the central qualities are that render theatre an appropriate or inappropriate medium to investigate the intersections of these three topics. **Objectives:** The primary objective of this literature review is to identify the strengths and challenges of using applied theatre as a method when discussing the effects of climate change and mental health among Indigenous youth. **Methods:** This review was guided by a narrative approach. Literature was identified using digital databases including PubMed, Elsevier, WorldCat, JSTOR, Project MUSE, ERIC, and Google Scholar. Articles were selected depending on their relevance and contributions to the discussion of the central topics. Inclusion was contingent on publication in a peer-reviewed journal and whether the articles discussed applied theatre, climate change, and mental health. A total of 17 articles were included in the final review, which were further analyzed to identify overlapping themes. It is worth noting that this narrative review is not a comprehensive review of research on Indigenous youth, mental health, and/or climate change. Rather, it is a focused investigation of the role of theatre in addressing the intersections of these subjects. **Results:** This literature review found that there are significant linkages between climate change and mental health. Three central strengths emerged from a review of existing projects that used applied theatre to discuss climate change or mental health with Indigenous youth. The exploratory nature of theatre, its flexible temporality, and its capacity-building qualities are all overarching themes that render theatre pertinent to discussing climate change and its consequent mental health impacts among Indigenous youth. **Conclusion:** The emergent findings are important when considering applied theatre as a medium to facilitate discussions. There are certain challenges that also arose, such as a lack of youth interest and a need to conduct theatre activities over longer periods of time.

Keywords: Indigenous youth, mental wellness, climate change, applied theatre, arts-based approaches

Introduction

The effects of climate change in the Northwest Territories and other circumpolar contexts have been well documented. The Northwest Territories, one of three territories within what is now known as Canada, is warming three times faster than the global average, resulting in geographic, environmental, and social changes (Bush & Lemmen, 2019; Environment and Natural Resources, n.d.). Permafrost, a frozen layer of soil beneath the surface in arctic climates, is thawing at rates never seen before in history, releasing methane and other atmospheric gases back into the atmosphere and further accelerating global warming (Philips et al., n.d.). Ice conditions have changed throughout the seasons and have become unpredictable, creating safety risks for those who depend on the ice for travel and the transport of goods (Rall & LaFortune, 2020). The combination of these environmental and geographic changes is also causing changes in the availability of traditional foods such as caribou and migratory birds (Rall & LaFortune, 2020). Moreover, beyond these ecological, infrastructural, and economic impacts, climate change also has tangible effects on the mental and physical well-being of people (Kipp et al., 2019).

Climate change has many impacts on the mental health of individuals, including anxiety and depression, depending on the direct or indirect exposure to climate-related events (Palinkas & Wong, 2020). However, Indigenous Peoples in circumpolar contexts may be disproportionately impacted due to their proximity to the environment. Likewise, climate-related mental health concerns exacerbate the existing effects of settler colonialism, which continue to negatively impact the overall health of Indigenous Peoples and their communities (Whyte, 2017). A systematic literature review by Vecchio et al. (2022) evaluated the role of climate change on mental health among Indigenous Peoples. After reviewing 23 articles, many from circumpolar contexts, the authors found that the climate crisis exacerbated existing health and social issues, such as housing, food security, addiction, and mental health crises. Relocation due to environmental degradation or climate disasters also contributed to poorer mental health outcomes in many studies (Chen et al., 2011; McMichael & Powell, 2021; McNamara et al., 2010). Moreover, climate-induced disruptions in access to land translated into poorer mental health outcomes and increased concerns by community members over well-being (Vecchio et al., 2022). The impacts of climate change on mental health are further supported by accounts of youth from Nunatsiavut, who have reported "fear about life-changing circumstances, and concerns about how community members were using negative ways of coping," when asked about their perspectives on climate change (Lebel et al., 2022, p. 326). Indirect impacts of weather events, broad changes, and the societal effects that accompany climatic change can generate feelings of displacement, loss, distress, and hopelessness, as well as more serious mental illnesses among youth (Lebel et al., 2022; Vecchio et al., 2022).

A recent study to examine climate change and mental health among Indigenous youth was conducted in a community in the Northwest Territories. Indigenous youth, in collaboration with an Indigenous playwright, workshopped a drama performance that explored the experiences of Indigenous youth with climate change and the impacts on their mental health. The project was informed by a community Elder who had suggested the use of drama as an effective medium for discussion and analysis, based on his own personal experiences with the power of theatre.

Theatre has a long history as a medium to address social conditions and our human responses to these conditions. Broadly speaking, applied theatre is an umbrella term for practices that use the process of dramaturgy and performance as a medium to explore concerns, challenges, issues, and potential solutions in a community (Baldwin, 2008). It has been most famously interpreted and developed by Augusto Boal in his classic text, *Theatre of the Oppressed*, in which performance arts and community empowerment are intertwined in enacting

socio-political change (Boal, 2008). Applied theatre differs from works of traditional theatre in that there is no moral lesson or preconceived teaching for the audience to receive. Rather, applied theatre is a process in which audience members, participants, and community members can question the status quo through the performance of one's own challenges. Likewise, the process of performance removes oneself from one's own narrative, allowing for reflection on empathy with the self and others (Baldwin, 2008). In Boal's practice of applied theatre, the audience is also an essential component of performance. Spectators become "spect-actors" and are encouraged to engage with on-scene dilemmas or situations (Boal, 2008, p. xxi). This component of applied theatre allows all members of a community to participate, creating opportunities for dialogue, listening, and group learning that may not exist in day-to-day life (Baldwin, 2008).

Review Questions

This literature review is guided by the following question: What are the strengths and challenges of using applied theatre to facilitate discussions on the intersections of climate change and mental health among Indigenous youth?

To answer this question, this paper assessed examples of applied theatre being used by Indigenous youth to discuss either mental health, climate change, or the intersection of these topics. Further, the literature was analyzed to identify best practices as well as challenges that may arise from using applied theatre as a medium to discuss the intersection of climate change and mental health among Indigenous youth.

Methods

This literature review utilized a narrative approach to identify and analyze published literature that discusses the intersections between applied theatre, climate change, and Indigenous youth mental health (Baumeister & Leary, 1997). A narrative approach is primarily focused on conceptualizing and analyzing a specific body of literature, depending on the topic of inquiry or discussion (Baumeister & Leary, 1997). This approach is useful for subject matter that has not been thoroughly investigated, such as is the case in this paper. This paper is by no means a thorough review of all research done on climate change and its mental health impacts on Indigenous Peoples. Rather, it synthesizes pertinent research on mental health and climate change to create a narrative as to how applied theatre may be used with Indigenous youth to investigate these topics.

To apply this narrative approach, the first author initially searched for relevant literature in several databases including PubMed, Elsevier, WorldCat, JSTOR, Project MUSE, and Google Scholar. The review question was further broken down to three concepts to facilitate a more effective search: (a) Indigenous Applied Theatre, (b) Indigenous Youth Mental Health, and (c) Climate Change. Synonyms and keywords were compiled based on these three concepts, which were then used to conduct the searches. For the purposes of the literature search, mental health was broadly defined as perceived emotional, psychological, and social well-being. Youth was also understood to include individuals from adolescence to those in their 20s and 30s. The reference lists of several key papers were also assessed for further resources that could be utilized in informing the literature review.

Inclusion criteria was limited to peer reviewed works published between 1985 and 2022 and pertinent to applied theatre, climate change, its impacts on mental health, and/or the manifestations of these impacts on Indigenous youth. After the initial search, the first author screened all titles and abstracts, which was then followed by a more thorough full-text review of articles that were flagged as most pertinent to the search topics. Articles selected for full-text review were then assessed for relevancy to the three central topics of this review. Articles were included if they included in-depth discussions on either the use of applied theatre with Indigenous youth or the complex interactions between climate change and mental health

among Indigenous youth. Several overlapping themes emerged across the 17 articles that were included in this review, which are discussed in the following sections.

Findings

This review aimed to provide a narrative review of the potential strengths and challenges of using applied theatre to facilitate discussions about climate change and mental health among Indigenous youth. In total, 17 articles were included in the final pool of results. Upon analysis of the final articles included in this review, three strengths emerged from the literature. Most notably, theatre has an exploratory nature that enables youth to interact with challenging, and often emotional, themes. Further, theatre inherently provides flexible temporalities, which allow youth to engage with issues both in the past and the future in a fluid manner that would otherwise be difficult to embody outside of the practice of theatre. Finally, theatre provides a space of community for capacity building rooted in cultural strengths and identity. In addition to these strengths, there are also challenges to using theatre, most importantly the need for trust and relationships between and among participants and facilitators. Likewise, cultural safety is essential when conducting a theatre activity with Indigenous youth.

Strengths of Applied Theatre

Exploratory Nature of Theatre

The first strength of using applied theatre as a medium for discussing the intersection of climate change and mental health is the exploratory nature of applied theatre and its ability to create safe spaces to explore complex issues. Participants can explore scenarios and ways of being and acknowledge emotions or challenges in an environment that is similar to real life, yet still creative and safe (Baldwin, 2008). In *The Rainbow of Desire* (1995), Augusto Boal describes this tension between lived and performed identities as "the

state of belonging completely and simultaneously to two different autonomous worlds: the image of reality and the reality of the image" (p. 43). He further elaborates on this theme by introducing "analogical induction," which can be described as the recognition of the self in others (Goulet et al., 2009, p. 110).

Theatre, by its very nature, allows participants to explore feelings, identities, and situations that may feel overwhelming in ordinary life; the topic of climate change can be one such example of this. Youth exposure to climate change is generally limited to classrooms or news sources where information is focused on the consequences of climate change such as forest fires, landslides, floods, and loss of biodiversity (Monroe et al., 2019). Although this information is useful in understanding the effects of climate change, it can be challenging for youth to view this information as empowering or hopeful and can contribute to feelings of apathy or hopelessness instead (Ojala, 2012). Theatre-based engagement with climate change may allow youth to explore the issue in a safe space, without having to actively live its consequences or the despair that is commonly associated with its consequences (Monroe et al., 2019).

Applied theatre practices also offer Indigenous youth the space to explore their own experiences without their voices being co-opted by typical deficit-based narratives. In "Youth Participatory Action Research and Applied Theatre Engagement: Supporting Indigenous Youth Survivance and Resurgence," Diane Conrad (2020) draws upon three different projects involving theatre and Indigenous youth to demonstrate the potential of the medium in "inspiring processes for survivance and resurgence" (p. 258). In all three settings, theatre provided Indigenous youth the space to showcase their identities beyond the labels ascribed to them by society, such as "at-risk," "incarcerated," or "street-involved." In one project involving Indigenous youth perceived as "street involved," Conrad (2020) notes that the

youth saw themselves as artists, educators, and activists, which are roles they previously felt prohibited from embodying. The author cites theatre-worker and scholar Jill Carter in summarizing how the three theatre projects may provide the youth "a new way of seeing and recreating themselves as sovereign human beings" (Carter, 2016, as cited in Conrad, 2020, p. 264).

Similarly, the exploratory nature of theatre has been noted as having the potential to serve as a healing medium for mental health, climate change, or other distressing topics among Indigenous youth. George Cajete (1994) in *Look to the Mountain: An Ecology of Indigenous Education* describes the artistic potential within Indigenous Peoples as "an integral part of learning, being, and becoming complete" (p. 140). Furthermore, he elaborates that youth particularly struggle in finding their way in today's world and that art, in all its forms, assists in "developing [a] vision that guides them toward fulfillment of themselves as complete human beings" (p. 147). Bessel van der Kolk (2014), author of *The Body Keeps the Score*, highlights the importance of theatre in allowing individuals with traumatic experiences to recentre themselves in their bodies through performance, which can allow participants to "explore alternative ways of engaging with life" (p. 339).

As the above examples have demonstrated, the exploratory nature of applied theatre is beneficial when discussing complex issues, because it allows both the participants and audience members (or in this case, the "spect-actors") to engage in the topics without directly experiencing lived consequences. Particularly for Indigenous youth, the impacts of climate change on their mental health can be a difficult topic to explore. Climate change implies alterations in ways of life and adaptation to new realities, further exacerbating existing issues such as availability and quality of housing, food security, and access to traditional lands and activities (Vecchio et al., 2022). Exploring these issues without the burden of living them is an integral strength of theatre as a medium for discussion.

Temporalities of Theatre

Another strength for using applied theatre that emerged from the literature with regard to climate change and mental health is theatre's flexible temporality. A performance is always in the present, even if it is representing the past or future. Therefore, participants can perform the symptoms of the present while imagining more positive futures. The act of performance creates an "alternative space where potential becomes possibility" (Goulet et al., 2009, p. 107). One of the most compelling examples of the benefit of theatre's flexible temporality is demonstrated in *Salmon is Everything: Community-Based Theatre in the Klamath Watershed* (May, 2018). Following an ecological disaster in which approximately 30,000 salmon died prematurely in one of the largest watersheds in the Pacific Northwest, the book documents the development of a theatre project that allowed community members, especially young people, to share their lived experiences with the crisis. The play is centred on Julie, a young Indigenous woman, and her family as they deal with socio-economic and cultural damage caused by the loss of the fish. Julie meets Tim, a young non-Indigenous rancher, and together they imagine all the living and non-living beings that constitute the watershed as a family of many peoples all dedicated to saving the salmon.

The theatre work is most compelling in its ability to demonstrate the nuances of actors and the complexities of everyday life through performance. No actor or character is reduced to a stereotype or archetype intended to teach a moral or lesson to the audience: there "are no heroes or villains here, just complex characters … working doggedly across difference, race (and racism), anger, fear, vulnerability, empathy, and love in order to better understand and relate to one another" (May, 2018, p. 179). As the book documents, community members, both youth

and adults, as well as the non-Indigenous farmers and ranchers dependent on the salmon, co-created the work by reflecting on the shared loss of the salmon and using this loss to produce a work of art that dreams of a more hopeful future. *Salmon is Everything* is one example of how theatre's flexible temporality creates space for dialogue about climate change and can allow multiple perspectives and knowledge systems to be heard and shared, culminating in a more dynamic understanding of an issue and how it affects individuals or communities differently. This contrasts with traditional climate crisis communication methods, where the conditions of the present are narrated as binding for the future, creating a sense of hopelessness among youth (Bentz, 2020). Theatre's ability to perform multiple time periods at once allows the past to inform the conditions of the present, while imagining more hopeful futures.

Following the first performance in 2018, the play has been performed many times, and each performance comprises specific moments in time before the death of the salmon, during, and the aftermath of the die-off (May, 2018). Theatre allows moments in times like these to be performed perpetually in the present, allowing lessons and aspirations from the past to continually inform the present. Moreover, a performance such as *Salmon is Everything* becomes a tool for the community to re-enact and learn in the face of future challenges related to environmental changes and its effects on people.

Kyle Whyte (2017) in "Indigenous Climate Change Studies: Indigenizing Futures, Decolonizing the Anthropocene" discusses the importance of connecting the past, present, and future with regard to Indigenous climate change studies and its implications for performance. He argues that "reflecting on why our ancestors would have perceived the present as dystopian provides guidance on how to live under post-apocalyptic conditions … Indigenous climate justice activism is also about performing these ancestrally inspired visions" (p. 160). The

flexible temporality of theatre is an advantage that allows youth to perform the challenges and lives of previous generations and have their strengths provide inspiration for the present or future.

Capacity Building

The third and final strength that emerged from the literature is the capacity building brought about with theatre. Participants in applied theatre projects report increased confidence and skills that may enable them to better address the manifestations of climate change and mental health issues in their lives. One study by Snow et al. (2003) qualitatively investigated the therapeutic nature of theatre among 20 participants with developmental disabilities. In survey questions following the three-month data collection period, participants expressed an overwhelming sense of achievement, confidence, and happiness that they did not feel prior to their theatre experience. Researchers also found that therapeutic benefits of theatre included enhanced communication skills, increased sense of responsibility, increased socialization, a reduced sense of stigmatization, and an expanded sense of self (Snow et al., 2003).

Theatre also allows youth to critically analyze situations or behaviours and rehearse new actions without real-life consequences (Goulet et al., 2009). One study from Ansloos and Wager (2020) used community theatre to create dialogue among Indigenous youth with experiences of homelessness. The study involved 15 participants who committed to weekly attendance and rehearsals of a performance, which took place over the span of three years. In interviews following the project, several themes were highlighted. For many youths, theatre was a novel and frightening experience. However, participation gave many youths a sense of pride in themselves and their accomplishments, as well as a belief in their potential despite the challenges they may have experienced in their own personal lives (Ansloos & Wager, 2020). Likewise, exploring

past experiences of homelessness and performing futures of housing stability gave youth the capacity for hope. As Ansloos and Wager (2020) describe, the capacity to be hopeful "was not unhinged from the pragmatic struggles or concerns of youth, but instead was linked to making life in the immediate material and physical sense more livable and survivable; and the future more attainable, resilient, ambitious, and possible" (p. 59). Theatre also gave many participants a space to create identities independent of lived challenges and to forge new communities with other youth. By meeting other youth with similar lived experiences, youth could draw upon the strength of the relationships they had built during the theatre project as motivation and a source of perseverance, which ultimately served as the building blocks for activism (Ansloos & Wager, 2020). This is further supported by two studies exploring the linkages between climate change and mental health among Indigenous youth in circumpolar contexts, wherein youth reported that feeling connected to other youth was essential in maintaining motivation in climate advocacy and dealing with other stressors in everyday life (MacKay et al., 2020; Petrasek MacDonald et al., 2015; Petrasek MacDonald, Ford, et al., 2013; Petrasek MacDonald, Harper, et al., 2013). Theatre has potential to be the medium for connection among youth and, consequently, build both individual- and community-level capacity. Likewise, a research project by Goulet et al. (2009) used theatre workshops to provide an opportunity for Indigenous youth in one region of Saskatchewan to discuss healthy decision-making and their health. In this project, entitled *Developing Healthy Decision-Making With Aboriginal Youth Through Drama*, youth participated in theatre games where they could move around spaces and do activities that built trust and communication among the participants. Participants were also asked to portray a "frozen image" that exemplified some of their lived experiences (Goulet et al., 2009, p.

108). Although a simple activity, embodying lived experiences provided youth with the capacity to share experiences and communicate in creative manners. Participants could build skills and a network of similar youth in ways that were fun and full of laughter.

Beyond communication skills and connecting youth, *Developing Healthy Decision-Making With Aboriginal Youth Through Drama* also exemplified the role of theatre in highlighting community strengths. Through sharing images and performances, youth demonstrated their "social systems with deep bonds among peers, family members, relatives, and community members" (Goulet et al., 2009, p. 111). Theatre provided the youth with space to reflect on their strengths and reframe identity and community as an opportunity to overcome the health challenges they identified.

Challenges in Using Applied Theatre

The literature also emphasizes several challenges associated with using theatre to examine complex issues. In *Developing Healthy Decision-Making With Aboriginal Youth Through Drama*, Goulet et al. (2009) found that it was difficult to maintain commitment from the youth over a short period of time. Youth felt that they did not have a stake in the process and were less likely to engage (Goulet et al., 2009). Full engagement requires a certain amount of trust in the aims of the project, in the facilitators, and in other participants (Hradsky & Forgasz, 2022). This trust may not be easily gained within the span of only one or two rehearsals or workshops. Additionally, it may be hard to garner the interest of youth participants, especially given that climate change or mental health may not be the largest visible priority in their lives (Vecchio et al., 2022). Generating interest in climate change as an issue that directly affects participants should also be a part of potential future theatre workshops. Overall, building a safe space where all participants feel comfortable and valued when sharing

experiences or beliefs on these complex issues may also be difficult in the short term.

Conclusion

The literature demonstrates that there are a variety of projects that use theatre to examine mental health *or* climate change; however, there is limited work that explicitly engages the intersection of these topics. The works of theatre involving either climate change or environmental issues often touch upon the social effects of environmental destruction, which include mental health challenges. However, there is a major gap in the way that applied theatre may be used to address the synthesis of these topics, nor are there many works that evaluate the impact of using applied theatre in this way. Both this literature review and the pilot project in the Northwest Territories, as mentioned in the introduction, hope to address this gap. First, the exploratory nature of applied theatre creates an imaginative space that permits youth to discuss themes or ideas that they may normally not have the opportunity to. With respect to the climate crisis, the exploratory aspects of theatre create the possibility to look at climate change from various perspectives, including ones of hope. This contrasts with the predominant messaging around climate change, which often uses a lens of despair and catastrophe instead. Second, the flexible temporality characteristic of theatre is important in allowing youth to perform alternate realities and to transform works of theatre into a resource for future generations. Lastly, applied theatre builds youth capacity by bringing youth together and engaging them in new creative activities that build skills, generating a space where youth can relate to and validate one another's experiences or thoughts. Capacity building and networking may also provide youth with the opportunity to creatively engage with identity and community to better address the mental health detriments that follow climate change. Applied theatre,

therefore, may be an appropriate and useful medium to engage in dialogues about climate change and mental health among Indigenous youth.

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Literature Review

Exploring Collaborative Approaches to Indigenous Science Outreach Programs on Turtle Island: A Scoping Review

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Abstract

Introduction: Past and recent calls to action (e.g., Truth and Reconciliation Commission of Canada, 2015) call for inclusion of Indigenous Peoples, including residential school Survivors, in all stages/phases of program development and education. **Objective(s):** This scoping review identifies and maps the extent (i.e., level) of collaboration reported in published accounts of science outreach programming targeting Indigenous youth on Turtle Island (North America) between 2010 and 2022. Additionally, this review lists and describes program evaluation methods reported. **Methods:** Arksey and O'Malley's (2005) scoping review methodology was applied. Education Resources Information Center (ERIC), Education Research Complete (ERC), Academic Search Premier (EBSCO), CBCA Complete (ProQuest), SocINDEX (EBSCO), Google Scholar, and Google were searched for science outreach programs targeting Indigenous youth on Turtle Island between 2010 and 2022. Each program's process and methods were identified. A scoring schema was developed in collaboration with community members to map these data by extent of community collaboration (three categories; 0 = none, 1 = some, 2 = full). **Results:** In total, 20 programs were identified, and 12 (n = 12/20) programs met criteria for full collaboration during program development and implementation, while eight (n = 8/20) did not. Of the 12 programs, six (n = 6/20) programs reported collaborative evaluation. Diverse evaluation methods were reported and are described. Moreover, 15 (n = 15/20) programs were identified as taking place post 2015, with four (n = 4/15) being Canadian programs. **Conclusions**: A total of 20 STEM programs targeting Indigenous youth on Turtle Island were identified in this review. Although 60% of the programs reported collaboration during development and implementation of programming, only 30% collaborated with community during program evaluation. These findings are supportive of the need for ongoing education and research on collaboration with Indigenous communities at all stages of intervention/program development.

Keywords: Indigenous (Peoples), (program) development, (program) evaluation, collaboration, science education

Introduction

In 2016, 14% of Indigenous women and 8% of Indigenous men aged 25 to 64 in Canada had obtained a bachelor's degree or higher, compared to 32% of non-Indigenous women and 27% of non-Indigenous men (Arriagada, 2021). A bachelor's degree is often an entry-level requirement for STEM (science, technology, engineering, and mathematics) and applied science (e.g., health care) occupations, and Indigenous people on Turtle Island (North America) are underrepresented in these professions (National Science Board, 2010; Statistics Canada, 2018). This "achievement gap," or difference in academic achievement (as measured by standardized academic test scores), has been attributed to a web of systemic social and economic challenges, blended with historical and ongoing experiences of colonization—not lack of interest or motivation (Battiste, 2013; Canada Millennium Scholarship Foundation, 2005; Harkins et al., 2017; Longboat, 2012; Mullen, 2021).

As part of efforts to recognize and address these differences, a variety of calls to action have been made, including the Truth and Reconciliation Commission of Canada's (TRC) Calls to Action (TRC, 2015). The calls to action related to education include the following: (a) Improving education attainment/achievement levels and success rates, (b) respecting and honouring treaty relationships and developing culturally appropriate curricula, and (c) enabling parental and community responsibility, control, and accountability (TRC, 2015). Moreover, in 2010–2011, Canadian and American governments released statements of support for the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP; Indigenous and Northern Affairs Canada, 2010; United Nations General Assembly, 2007; U.S. Department of State, 2011), which also includes articles similar to, or which reinforce, the aforementioned calls to action (e.g., integrate language and Indigenous methods of teaching and research). Additionally, in 2021, Bill C-15 brought into focus Indigenous Peoples' rights to establish and control their educational systems, and the bill was passed in the Canadian House of Commons (Bill C-15, 2021; United Nations General Assembly, 2007).
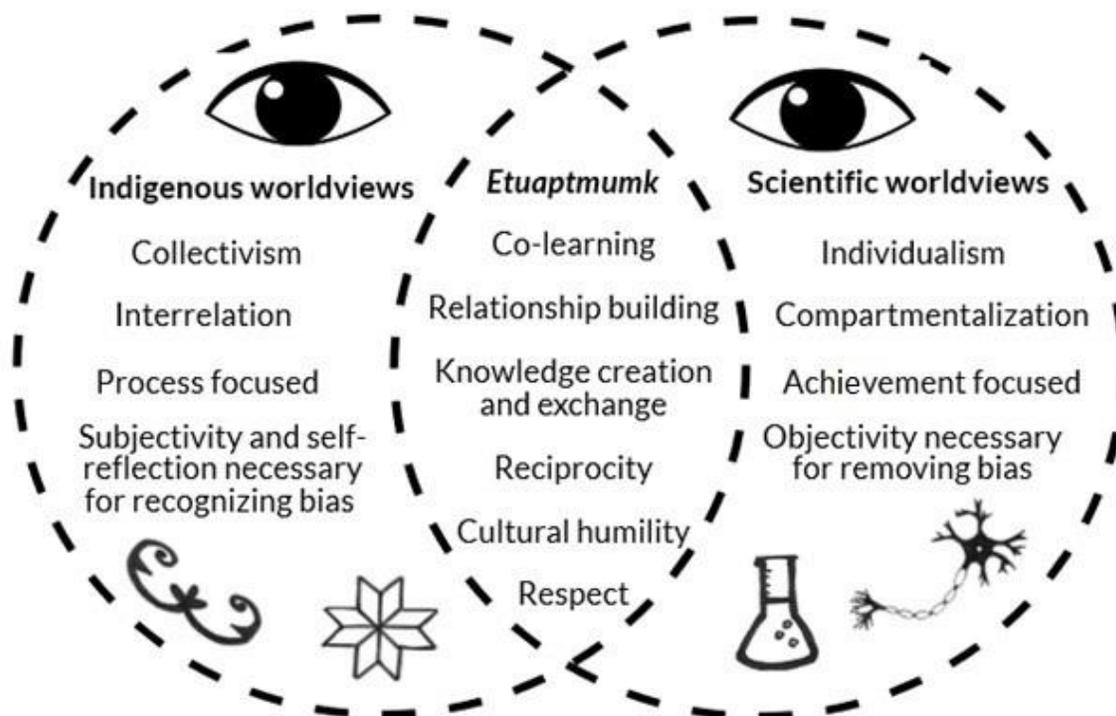
Although many calls and articles continue to go unanswered, there are examples of Indigenous- and non-Indigenous-led efforts to answer the calls. One community-led program committed to ensuring accountability is Mi'kmaw Kina'matnewey (MK). MK is a unified team of chiefs, staff, parents, and educators who advocate on behalf of and represent the education interests of 12 Nova Scotian (Mi'kma'ki) communities, while protecting the educational and Mi'kmaw language rights of the Mi'kmaq. Unlike a school board, MK serves rather than directs the activities of its members' local schools. Since its inception, MK has observed steady increases in high school graduation rates, reaching 90–95%, and an average attendance rate of 91%. Moreover, MK recently reported over 600 First Nations youth enrolled in post-secondary education (MK, n.d.). These findings contrast with the statistics highlighted above pertaining to the "achievement gap."

The principle of Two-Eyed Seeing grew out of a shared aim of facilitating communication and relationship building between people, groups, and institutions (including MK) with differing or multiple perspectives. Based on the Mi'kmaw concept *Etuaptmumk*, the gift of multiple perspectives, Two-Eyed Seeing is a guiding principle offered by Mi'kmaw Elder Dr. Albert Marshall, the late Elder Dr. Murdena Marshall, and Dr. Cheryl Bartlett of Unama'ki (Cape Breton, Nova Scotia) to encourage and support co-learning. Indigenous Knowledge Systems and Western Knowledge Systems (e.g., Western science) are respected as unique by Two-Eyed Seeing (Figure 1). Using the analogy of "knowledge gardening" or "growing forward," reciprocity, process, and patience are prioritized over defending, outcomes, and efficiency. As in gardening, in co-learning one must take time to prepare the soil, allowing seeds to set and roots to take hold before we see the plant growing and blooming (into new knowledge and shared understandings). Ongoing engagement and

relationship building nurtures opportunities for meaningful and reciprocal relationship building and actively avoids application of knowledge without context (Bartlett et al., 2015; Littletree et al., 2020).

Figure 1
Two-Eyed Seeing

Note. Teachings of Etuaptmumk are represented in the centre of the Venn diagram. Image created by C. Purdy (2019) to represent Etuaptmumk/Two-Eyed Seeing.

Methods

The six-step Arksey and O'Malley (2005) scoping review framework and the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) extension for scoping reviews (Tricco et al., 2018) were both applied to develop and answer our research question. The principle of Two-Eyed Seeing guided the authors and reviewers at each step, most notably during step six: consultation. Research ethics exemption was granted by the MSVU Research Ethics Board (2019-022, 2022-018) and Mi'kmaw Ethics Watch. Following scoping review standards, this review did not draw conclusions about the efficacy of programs and methods.

Step One—Identifying the Research Question

This scoping review aimed to answer the following research question: What is the extent to which collaboration took place during development, implementation, and evaluation described in published accounts of science outreach programming targeting Indigenous youth on Turtle Island?

This scoping review identifies and maps the extent of collaboration in the development, implementation, and evaluation (three steps of community programming) of science outreach programming for Indigenous youth on Turtle

Island between 2010 and 2022 (Fernandez, et al., 2019). "Extent" has been defined as the level (expressed as a category) to which collaboration took place with Indigenous communities during programming for Indigenous youth.

Step Two—Searching for Relevant Studies

The aim of this scoping review was to identify and map collaboration occurring during development, implementation, and evaluation of science outreach programs targeting Indigenous youth on Turtle Island since 2010. The base year 2010 was chosen because this was when several key guidance documents on community collaboration, developed with Indigenous Peoples, became accessible on Turtle Island (Canadian Institutes of Health Research et al., 2018; Government of Canada, 2014; Indigenous and Northern Affairs Canada, 2010; TRC, 2015; United Nations General Assembly, 2007).

Definitions of terms that made up our research question, aim, and search strategy were co-developed by the authors and community partners in advance of search implementation. For instance, "science outreach program" was defined as any camp, event, after-school program, or club that targeted Indigenous youth (up to 18 years) with the aim of increasing access to STEM knowledge, skills, or role models, and with an underlying aim of promoting STEM education. This includes STEM career exploration, mentorship activities, field trips, hands-on STEM activities, academic preparation related to STEM, or skill building in STEM. STEM includes biology, physics, chemistry, environmental science, computer science, engineering, and mathematics. Turtle Island is used to describe the traditional territories on North America, but this review focused on Canada and the United States.

A keyword search strategy (Table 1) was developed and conducted with the support of the Mount Saint Vincent University Science Librarian, Coordinator of Collections and Reference (MR). Peer-reviewed literature, including grey literature (e.g., organizational reports, websites, graduate dissertations) and conference abstracts were considered for inclusion. Databases searched included Education Resources Information Center (ERIC), Education Research Complete (ERC), Academic Search Premier (EBSCO), CBCA Complete (ProQuest), SocINDEX (EBSCO), Google Scholar, and Google (e.g., media, program websites). Boolean operators (AND, OR, NOT) were used to systematically search databases for publications on science outreach programs (Table 1).

Table 1
Keyword Search Strategy

STEM Terms		Program Terms		Audience Terms		Audience Terms
Science OR Technology OR Engineering OR Math OR STEM	AND	Program OR Club OR Camp OR Mentorship OR Promotion OR Outreach	AND	Indigenous OR Native OR First Nation OR Indian OR Aboriginal OR American Indian	AND	High School OR Elementary OR Middle School OR Youth OR Adolescents OR Children

Eligibility criteria for this scoping review included the following: (a) Programs targeting school-aged Indigenous youth (18 years old or younger); (b) programs being developed, implemented, and evaluated in Canada or the United States; (c) programs published, implemented, and evaluated between 2010 and 2022 (publications using data collected before 2010 excluded); (d) programs that have reported on any form of program evaluation (e.g., report on conclusions formed about program success and how they were formed); and (e) programs that identify as a science outreach program (defined above).

Step Three—Selecting Studies

Screening, extraction, and listing were completed by three trained independent reviewers in 2019 (CP, KB) and 2022 (CP, MC). Conflicts were reviewed and resolved by the senior author (SG), in consultation with the other co-authors (AS, AM, VP). Eligible literature was identified, duplicates were removed, and titles and abstracts were screened. In cases where multi-year reports/publications were identified, the most recent was included. If more information was needed from programs, authors emailed the programs directly. All reasons for exclusion were recorded in the data extraction tool (Table 2) by each reviewer, then collated.

Step Four—Charting and Mapping Data

A scoring schema (Tables 3 & 4) was created with community input, to map the extent of collaboration based on data retrieved using the data extraction tool. Table 3 maps program development and implementation by three categories: 0 = no collaboration, 1 = some collaboration, and 2 = full collaboration. Table 4 maps evaluation, but many programs were vague about their evaluation process, so only two categories were developed: 1 = collaboration and 0 = no collaboration. After the schema was developed, it was tested until scoring consensus was achieved.

Step Five—Reporting

The traffic light method was used to describe categorized programs (by the collaboration schema), based on their level of collaboration

Table 2

Excerpt From Data Extraction Tool

Title, Date	Location	Program Details	Development/ Implementation Collaboration	Evaluation Collaboration	Evaluation Methods Used
Storywork in STEM-Art: Making, Materiality and Robotics within Everyday Acts of Indigenous Presence and Resurgence, 2019	Washington	A four-session, three-hour weekly workshop series that centred families' stories to reposition families' relationships to robotics and STEM	Collaboration with local district school's Native Education program	No mention of community collaboration	Videotaped observations, field notes, post-interview

Note. STEM = Science, technology, engineering and mathematics

Table 3

Collaboration Scoring Schema—Program Development, Implementation

Level of Involvement	Description	Criteria
Level 0: No Collaboration	Decisions about program needs, content (etc.) driven from outside of the community (e.g., researchers, funders, organization owners).	1. No report of Indigenous consultation or involvement in development or implementation. 2. No Indigenous world views are reported as being included in program content.
Level 1: Some Collaboration	Decisions about programs needs seem to be driven from outside of the community; however, Indigenous world views are incorporated into program content, indicating use of community resources or collaboration in implementation.	1. There is no report of Indigenous community members, partners, right holders (etc.) being consulted or involved in the program development stages. 2. Community members (Elders, Knowledge Keepers, etc.) lead or are involved in the program to provide cultural knowledge, OR a framework for incorporating Indigenous world views is reported for program development/implementation without report of consulting the community.
Level 2: Full Collaboration	Decisions about program needs are driven by the community through collaboration with community members.	1. There is report of community consultation in defining goals, objectives, or aims, or in developing content for the program. 2. Community members (Elders, Knowledge Keepers, etc.) lead or are involved in the program to provide cultural knowledge, OR a framework for incorporating Indigenous world views is reported for program development/implementation.

Table 4

Collaboration Scoring Schema—Program Evaluation

Level of Involvement	Description	Criteria
Level 0: No collaboration	Community partners/members are not involved in evaluation; evaluators or researchers make decisions about evaluation methods, outcomes, or measures to be used. Success is defined from outside of the community.	1. Involvement of Indigenous community partners or representatives at any level of the evaluation process is not reported. OR Evaluation is developed based on previous research published about work in Indigenous communities, but not based on current community served.

Level 1: Collaboration	Evaluation methods, measures, or outcomes are created in consultation with community partners/members.	1. Consultation, shared decision-making, or collaboration is reported for at least one area of evaluation (e.g., defining success, choosing methods, determining measures, creating protocols, implementing the evaluation).

during development, implementation, and evaluation (0 = red, 1 = amber, 2 = green). The traffic light colours were selected to support mapping, as these colours have widespread application, recognition, and acceptance in knowledge translation (Ahluwalia, 2019; Scarborough, 2015). Program evaluation methods were also reviewed and described. These results were then summarized and reported in accordance to scoping review methodology (Arksey & O'Malley, 2005). In accordance to scoping review methodology, a quality appraisal was not conducted.

Step Six—Consultation

Although it is a term commonly used in knowledge translation and scoping review literature, "stakeholder" should not be used when addressing or communicating with Indigenous Peoples (Indigenous Corporate Training Inc., 2018). Stakeholder is often used to describe an individual, group, or organization that may be impacted by the outcome of a project, program, or research. Indigenous people and communities are not mere stakeholders, they are rights and title holders (Indigenous Corporate Training Inc., 2018). Review consultation was guided by Two-Eyed Seeing and facilitated by the co-authors (see acknowledgements) through oral communication and relationship building with local communities, such as various Elders, Knowledge Keepers, Indigenous scholars, and community-based educators. Co-author Elder Dr. Albert Marshall provided guidance on the authors' understandings of Two-Eyed Seeing and collaborative relationships. Consultation is a dynamic process, rooted in establishing, building, and maintaining relationships and

trust. Meaningful consultation must include listening to community concerns, discussing their concerns, and being prepared to accommodate those concerns (Sylliboy et al., 2021).
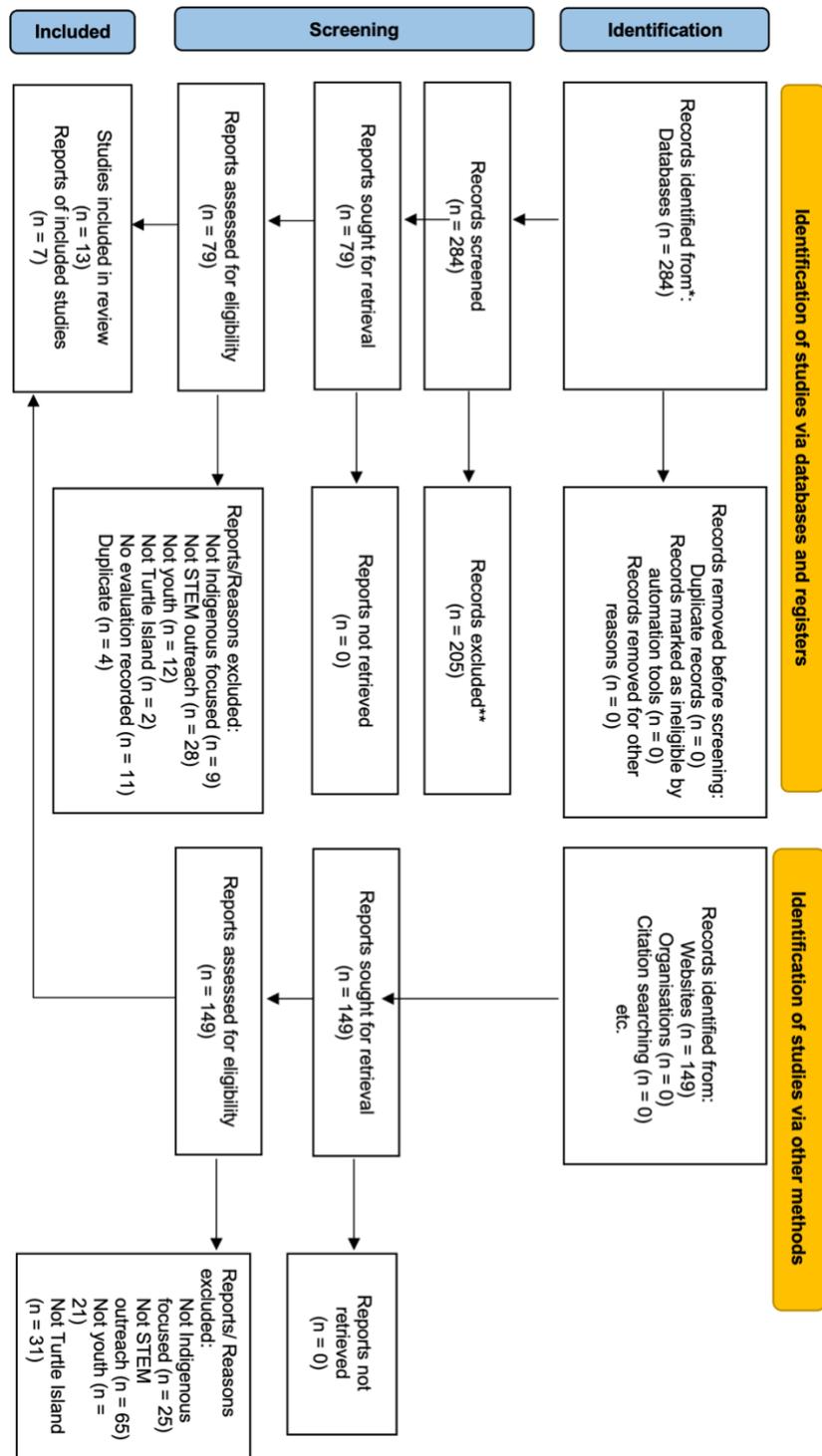
Results

Twenty programs (n = 20; see Appendix) were identified across Turtle Island (United States: n=14/20; Canada: n=6/20) that met inclusion criteria (2019: n=12/20; 2022: n=8/20). All program records were published between 2010 and 2022, with the majority published between 2017 and 2022 (n=13/20 or 65%). Fifteen of the programs reported after 2015 (post-TRC publication; n=15/20), with four (n=4/15) being developed, implemented, and evaluated in Canada. Figure 2 (completed PRISMA flow chart) illustrates the process implemented for identification, screening, and inclusion of studies. Reasons for exclusion were in line with established eligibility criteria. That is, programming was excluded if it (a) did not focus on Indigenous youth, (b) did not include STEM, (c) was from outside of Turtle Island, or (e) the authors did not report evaluation methods.

Extent of Collaboration—Development and Implementation

Using the scoring schema (Table 3), it was identified that 12/20 science outreach programs met criteria for level 2, full collaboration. Twelve programs reported collaborating during content development and described efforts and measures to ensure that Indigenous perspectives were incorporated into programming. Discussion of "culturally

Figure 2

PRISMA Flowchart of the Search Results and Study Selection and Inclusion Process

Note. STEM = Science, technology, engineering, and mathematics; Turtle Island = North America.

appropriate curricula" was a reoccurring theme in programs that met criteria for full collaboration. These programs also reported details on community engagement that aligned with recent calls to action, articles, and guidelines (Canadian Institutes of Health Research et al., 2018; Government of Canada, 2014; Indigenous and Northern Affairs Canada, 2010; TRC, 2015; United Nations General Assembly, 2007). Six programs (n=6/20) met criteria for level 1, some collaboration, in which collaboration was reported only during program implementation. These six program reports lacked details on community consultation, compared to those in level 2. It is possible that these programs did consult with community representatives but did not report this in their work. Lastly, two programs (n=2/20) met criteria for level 0, no collaboration. These two programs did not report any consultation. These data have been mapped in Figure 3, using traffic light colours to highlight extent of collaboration.

Extent of Collaboration—Evaluation

Fourteen (n=14/20) programs did not report evaluating programming in collaboration with community, consequently meeting criteria for level 0, no collaboration. Six programs (n=6/20) met criteria for level 1, collaboration. The six programs that reported collaboration during programming evaluation also met criteria for level 2, full collaboration, in their programming development and implementation stages. Figure 4 maps extent of collaboration during program evaluation planning, implementation, and analysis.
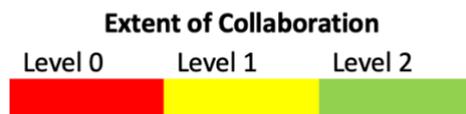
Evaluation Methodology

The 20 science outreach programs reported nine evaluation methods (n = 9), collectively (Table 5). Thirteen of the programs reported using questionnaires, while 13 (n=13/20) programs reported conducting interviews (Augare et al., 2017; Bernstein et al., 2015; Canevez et al., 2022; Dalbotten et al., 2014; DeRiviere, 2015; Gamble, 2014; Littrell et al., 2020; Miller & Roehrig, 2018; Patrick, 2018; Ricci & Riggs, 2019; Simonds et al., 2019; Tzou et al., 2019; Wesley-Esquimaux, 2015).

Evaluation methods reported also included focus groups (n=4), informal conversations (n=4), attendance/performance (n=2), and document reviews (n=3; Bernstein et al., 2015; Bosman & Chelberg, 2019; Canevez et al., 2022; Cheeptham et al., 2020; Dalbotten et al., 2014; Kant et al., 2018; Patrick, 2018; Stevens et al., 2016). Observational methods were reported in several reports, but it was often unclear what "observation" meant or what was measured.

Figure 3

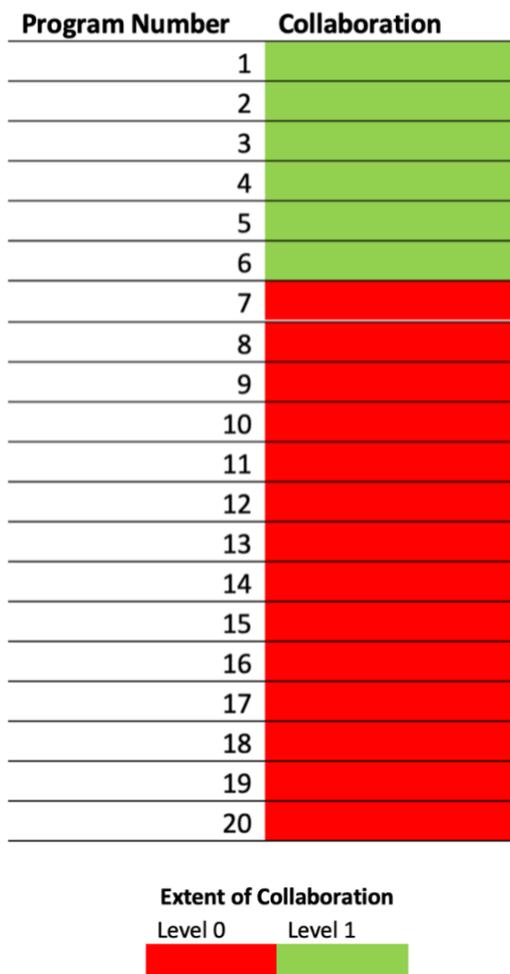*Map Showing Extent of Collaboration in Program Development and Implementation*

Lastly, there was one "novel method" reported called the "test tube confidence exercise," where

students were asked to measure an amount of liquid into a test tube, corresponding with their confidence in performing a learned skill/activity (Gamble, 2014). This was done before and after (pre/post) learning the activity, to determine changes in confidence. Generally, evaluation was described in a few lines and was lacking several details (not repeatable). Based on the information provided, we categorized methods into three main categories: (a) Qualitative/Subjective, (b) Quantitative/ Objective, and (c) Other (Table 5). This categorization was done to support future reviews and application of the existing research.

Figure 4

Map Showing Extent of Collaboration in Program Evaluation

Program Number	Collaboration
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Extent of Collaboration

Level 0   Level 1

Discussion

This scoping review identified and mapped the extent (level) of collaboration reported for science outreach programming targeting Indigenous youth on Turtle Island between 2010 and 2022. The three steps of program planning processes (development, implementation, and evaluation) were used to categorize and map the identified programs (Fernandez et al., 2019). While extent and methods of collaboration differed between programs, many reported full collaboration or some collaboration in program development and implementation. This was not followed through to program evaluation, with only six programs reporting collaboration at that stage. The programs that met criteria for collaboration during evaluation reported at least one incident of collaboration or engagement (e.g., evaluation development, selection of evaluation methods, choosing participants; Augare et al., 2017; Dalbotten et al., 2014; DeRiviere, 2015; Miller & Roehrig, 2018; Patrick, 2018; Ricci & Riggs, 2019). Both the United Nations Declaration on the Rights of Indigenous People and the TRC Calls to Action (TRC, 2015; United Nations General Assembly, 2007) stress the importance of collaboration with Indigenous Peoples through all the steps of program planning (development, implementation, and evaluation). When this is not done, the risk of doing work *to/on* Indigenous people rather than *with/for* Indigenous people is noteworthy (Murphy et al., 2021).

Most programs identified in this scoping review (n=13) were reported between 2017 and 2022. In addition to the increased reporting of programs, we also identified increased reporting of collaboration in programs between 2017 and 2022. This may be due to the publishing of the TRC Calls to Action in 2015 (TRC, 2015). Several of the calls to action call upon the federal government and others to collaborate with Indigenous communities to support Indigenous youth and their education— for instance, items seven, 16, and 66 (TRC, 2015). Despite this, few programs (n=6) identified reported collaboration with

Table 5
Evaluation Methods Reported

Qualitative n=31	Quantitative n=19	Other n=4
Interviews n=13	Questionnaires n=13	File documentation/review n=3
Observation n=10	Performance n=4	Novel method n=1
Focus Groups n=4	Attendance/participation n=2	
Anecdotes, comments, informal conversation, or reflections n=4		

Indigenous communities during the evaluation stage of programming. When researchers fail to collaborate during program evaluation, their findings may only be relevant for general publication, and may be of no use to the community (Murphy et al., 2021). For instance, the evaluations developed may not include outcomes deemed relevant to the community (people and communities have varying definitions of success). Communities should directly benefit from programming and research (Murphy et al., 2021).

Various terminologies have been used in the literature to describe how collaboration happens, including community-led, community-based, or participatory approaches (Baum et al., 2006; Tremblay et al., 2018; Wallerstein & Duran, 2010). In some forms, community-based can look like participatory approaches, meaning they are informed by community in various aspects of research/program processes. Participatory approaches, however, emphasize collective inquiry grounded in community participation through research and critical reflection, thus making it an emergent process that is shaped as understandings evolve, and participatory approaches are more reflective of current calls to action (Baum, 2006; TRC, 2015; United Nations General Assembly, 2007; Wallerstein & Duran, 2010). From a Two-Eyed Seeing perspective, for instance, collaboration is a way to co-create knowledge and co-learn with each other (Bartlett et al., 2012). Within Indigenous communities is the belief that everyone should work together as "we," instead of "I" (Bartlett et al., 2012). The idea of co-creating knowledge is beginning to be adopted by organizations including the Joanna Briggs Institute (JBI). Recent guidance has been published by JBI to move away from the term "consultation" and toward "co-creation of knowledge" while conducting scoping reviews (Pollock et al., 2022). To reiterate, when working with Indigenous communities, collaboration means that the community determines and/or leads and sets the pace/level of consultation and engagement (Tremblay et al., 2018).

Limitations

While this scoping review examined science outreach programs across Turtle Island, it likely did not include all programs that exist. Not all science outreach programs that engage youth end up as manuscripts or open access documents, and many do not publicly report evaluation details. Additionally, as a common limitation of the review process, our search strategy may have limited the results, therefore limiting the conclusions reported (Peters et al., 2020). The programs included provide a sample of programming and associated collaborative approaches with the means to produce reporting. In addition, some reports/publications lacked details about their collaboration, consultation, or partnerships and therefore may have been placed in an inappropriate category if collaboration occurred without being reported. Lastly, in following the scoping review methodology, a critical appraisal

was not completed, and this limits the ability to compare results across studies.

Recommendations for future work

This review grew out of the honours work of an Indigenous undergraduate student and two dietetic interns who identify as settlers and are interested in co-learning with Indigenous people. It is an example of Two-Eyed Seeing (co-learning, knowledge gardening) in action. The authors encourage subsequent reviews and syntheses on this topic, building on this work. Two future reviews conceptualized by the co-authors include (a) a scoping review that maps programming objectives to Calls to Action or the United Nations Declaration on the Rights of Indigenous People, and (b) syntheses of community-defined success in programming. Including terminology such as food, nutrition, and environment in the search strategy should be used to broaden the search, as these are science terms as well. If details on collaboration with Indigenous communities are missing in the reports, researchers can call the programs to gain more information. In this scoping review, authors did not call programs, but rather emailed programs to gain more information; however, no response was obtained.

Conclusion

This scoping review mapped the level of reported science outreach program collaboration with Indigenous community members, at all stages of programming, and identified potential areas for future work/development. It was concluded that the level of reported collaboration present during program development and implementation stages met community-defined expectations (schema) for collaboration, although there was a lack of reported evaluation collaboration in the literature. Although the authors recognize programs may have engaged in participatory approaches and not reported their evaluation methodology processes, either finding (lack of collaboration and lack of reporting) can be (should be) addressed in future efforts. The findings from this scoping review are supportive of the need to continue to educate the public, educators, and researchers on the calls to action, including collaboration/participatory approaches at all stages of programming. We still have much work to do.

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Appendix

Included Literature in the Scoping Review

Citation	Study Setting	Description of Program
Augare et al., 2017	Montana	An environmental science-based program engaging Native American youth in Two-Eyed Seeing.
Becker et al., 2017	Nebraska	Physiology program developed for Native American youth interested in pursuing STEM careers.
Bernstein et al., 2015	Alaska	Science and engineering program based out of the University of Alaska developed for Indigenous middle school students interested in STEM.
Bosman & Chelberg, 2019	Wisconsin	A renewable energy and environmental science education program developed for high school-aged Native American youth.
Canevez et al., 2022	British Columbia	A science, technology, engineering, and mathematics-based program incorporating Indigenous knowledge for Indigenous youth.
Cheeptham et al., 2020	British Columbia	A science and health science-based program aiming to expose youth to careers in science and health science, developed for Indigenous students aged 13 to 15 years old.
Dalbotten et al., 2014	Minnesota	A place-based science, technology, engineering, and mathematics-based program for Indigenous students in grades 5 to 12.
DeRiviere, 2015	Winnipeg	A mathematics-based program incorporating Indigenous knowledge and culture, developed for Indigenous youth.
Eglash et al., 2020	Michigan	A computer science and mathematics-based program creating online simulations of traditional Anishinaabe arcs developed for Indigenous high school students.
Gamble, 2014	Ontario and Nunavut	A science, technology, engineering, and mathematics-based program for Indigenous youth aged six to 16 using Two-Eyed Seeing to encourage STEM education and related careers.
Kant et al., 2018	South Dakota	Science, technology, engineering, art, and mathematics program developed for Native American girls interested in STEM careers.

Littrell et al., 2020	Colorado	A place-based science program to engage Native American students to learn about climate change and its impacts.
Miller & Roehrig, 2018	Minnesota	A science, technology, engineering, and mathematics-based program incorporating the cultural game of snow snakes. The program was developed for Indigenous students in sixth grade.
Patrick, 2018	British Columbia	A weeklong engineering camp for Indigenous youth that incorporates land-based learning.
Ricci & Riggs, 2019	California	A geoscience summer program developed for Native American youth to engage in culturally appropriate geoscience activities.
Simonds et al., 2019	Montana	An environmental health literacy program for Native American youth.
Stevens et al., 2016	Arizona	Science and engineering cultural program based out of Arizona for Native American middle school students interested in STEM.
Tzou et al., 2019	Washington	An engineering program developed for Native American youth to participate in robotics workshops grounded in storytelling.
Unsworth et al., 2012	California	A field-based geoscience program for Native American youth.
Wesley-Esquimaux, 2015	Manitoba	A science, technology, engineering, and mathematics-based program for Indigenous youth in grade 11 to spend a week researching with a mentor at a university.

Book Review

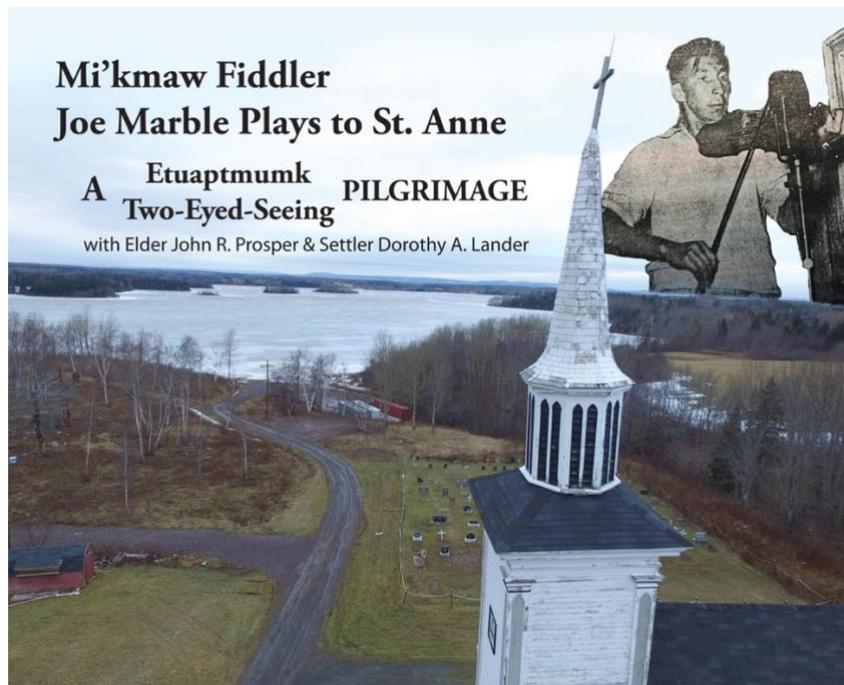# Fiddler Joe Marble Plays to St. Anne: A Etuaptmumk/Two-Eyed Seeing Pilgrimage by Elder John R. Prosper and Settler Dorothy A. Lander

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Cover Photo courtesy of Harp Publishing

While documenting significant Mi'kmaw and settler histories in northeastern Mi'kmaki/Nova Scotia, authors John R. and Dorothy came upon serendipitous signs signalling a much greater mission and opportunity for strengthening Indigenous-settler relationships and spiritual reflection through the lens of St. Anne. Keenly aware of the

impact of Shubenacadie Residential School on the Mi'kmaq in Nova Scotia, the story of survivor Joe Marble, a self-taught Mi'kmaw fiddler who played both traditional and settler music, struck a chord. The authors recognized Joe's musical talents as the gift of Etuaptmumk (Two-Eyed Seeing). Etuaptmumk is the Mi'kmaw word for "multiple perspectives" and asks that we consider, and equally value the strengths of multiple perspectives and ways of knowing. John R. and Dorothy had indeed been guiding their work together through Etuaptmumk from the outset.

Etuaptmumk (as explained/taught by Elders Albert and Murdena Marshall with Dr. Cheryl Bartlett) has quickly become a popular concept among researchers who work in collaboration with Indigenous peoples and communities. However, there is debate over the ability of (non-Indigenous) researchers to fully grasp and apply the principles of Etuaptmumk without tokenizing or confining it to academic use. Refreshingly, this book appears to reflect the true intent of Etuaptmumk as the authors provide a detailed description of two worldviews and people co-learning under the auspices of reconciliation. It serves as a strong example of the time and effort it takes to build meaningful, mutually beneficial, and fulfilling relationships.

The book is organized into 13 chapters embedded with a selection of complementary visuals that weave together descriptions of historical and recent events in Antigonish County with related autoethnographic contemplations. Readers are apprised of the authors' involvement in community proceedings that aimed to mobilize Indigenous-settler reconciliation in the region such as the *Re-Commitment to Peace and Friendship Nation to Nation*, *The Antigonish Movement*, and *St. Anne's Church Restoration*. The journey of discovery pushes John R. and Dorothy beyond what is presented at first glance to uncover details about Joe Marble that may have gone unnoticed. Significant to this story is also the concept of relationality – a deep and profound connection to each other, our physical world, and our ancestors. While the intended readership is likely the local community and those interested in learning more about Mi'kmaq histories, academic researchers who use (or might want to use) Etuaptmumk may also find this book thought provoking and useful for reflection.

Indeed, as researchers who engage in Etuaptmumk in our work, this book proved helpful in guiding our own conversations on ways to strengthen Indigenous-settler relationships and what that looks like "in the real world." We recognize, however, that what passes as collaboration in the world of academia frequently falls short of *true* collaboration and is often done too quickly. This can be for a myriad of reasons, including the time-driven nature of research and research grants, which can lead to a 'checking a box' mentality and does a disservice to Indigenous Peoples and communities who have been, and continue to, fight their sovereignty and self-determination. It is for these reasons that we feel there is great benefit to documenting and reporting the deep co-learning journey exemplified in *Fiddler Joe Marble Plays to St. Anne*. In order to truly appreciate, recognize, and embody Etuaptmumk, we must pay respect to, and understand, that building relationships and co-learning with one another takes time, care, and a critical analysis of the limitations of utilizing one 'eye' to address issues we see today.

Acknowledgements

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