Multidisciplinary Indigenous Research: Preliminary Findings of a Scoping Review of Canadian Scholarship (1997 to 2020)

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Abstract

Research in Indigenous contexts has historically been associated with colonialism. To counter this, recent Indigenous research re-centers knowledge production on Indigenous worldviews and voices. As a settler ally, I have conducted a scoping review of Canadian Indigenous research using a mixed method approach (Western and Indigenous), adopting Arksey and O'Malley (2005) scoping methodology (for initial five steps) and Kovach's (2010) Indigenous conversational method for consultations. The aim of this scoping review is to map out the praxis of Indigenous research by examining current epistemological trends, the diversity of Indigenous methods used and the role of researcher positionality in Indigenous research. Preliminary findings (before consultations) based on 46 papers across disciplines, point out to an increase in the number of Indigenous research projects conducted in Canada in the last five years. There is also evidence of substantial efforts by scholars to engage in respectful and reciprocal research partnerships with Indigenous partners.

Keywords: Indigenous methodologies, positionality, scoping review.

1. Introduction

Historically, research in Indigenous contexts is associated with colonialism (Smith, 1999). In response to this, Indigenous scholars have recentered research on Indigenous ways of knowing and doing (Castellano, 2004; Chilisa, 2020; Kovach, 2009; Smith, 1999; Wilson, 2008). This shift in the way in which Indigenous peoples are studied marks the advent of an "Indigenous research paradigm" (Wilson, 2008: 35). Indigenous research, therefore, distinguishes itself from Western research as it "follows an ontology, epistemology, methodology, and axiology that is Indigenous" (Wilson, 2008: 38). Furthermore, Indigenous research, as a decolonizing approach, disrupts the colonial logic that underlies researchers' perspectives and practices (Chilisa, 2020). There is also a growing interest in Indigenous knowledge systems and in decolonial studies which has led this "fifth paradigm" to gain momentum and prominence among researchers (Chilisa, 2020: 19). Nonetheless, this raises some crucial questions: Is an Indigenous paradigm right for everyone? Is Indigenous research always being conducted according to the principles set out by Indigenous scholars? Indeed, Indigenous research entails that Indigenous people have control over their *own* knowledge (Battiste & Henderson, 2000) and requires that researchers share power and conduct research ethically, for the benefit of Indigenous communities (Battiste,

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2008). Yet is this always the case? This scoping review on Indigenous research, therefore, sets out to examine how the principles of Indigenous research have been applied in the last twenty years in Canadian scholarship across disciplines by looking at the diverse epistemological currents present, the multiple methodological approaches used, and the crucial role that researcher positionality plays in Indigenous research. One of the anticipated outcomes of this research is finding strategies to assess the value and integrity of the research projects conducted under the banner of "Indigenous research".

2. Positionality

Positionality statements promote transparency and rigour by acknowledging the author's background and how this may impact the research (Carter et al., 2014; Martin, 2017). As a Mexican immigrant woman living in Montreal, on the unceded territory of the Kanien'kehá:ka (Mohawk) Nation, I position myself as an "Indigenist" ally, understood as "a movement that works collaboratively towards Indigenous peoples' goals for sovereignty and self-determination" (Battiste, 2013: 74). This research, therefore, stems from my personal interest in Indigenous epistemologies and methodologies and my hope is that it will help researchers navigate the complexities of Indigenous ways of doing research and that it will assist them in deciding if this approach is right for them.

3. Background

Concisely, Indigenous epistemologies emerge out of vibrant Indigenous place-based cultures, and are not, as commonly held, "stationary, prehistoric, and unchanging" (Kincheloe & Steinberg, 2008: 11). On the contrary, Indigenous knowledge systems are dynamic, relational, rooted in diverse ecosystems and articulated in a myriad of languages (Battiste, 2000; Castellano, 2000; Kovach, 2009; Salmon, 2012; Wilson, 2008). Indigenous scholars agree that beyond the multiplicity of Indigenous practices, and values, there is an underlying unifying *relational* principle shared by many Indigenous epistemologies (Battiste, 2000; Castellano, 2000; Wilson, 2008). This principle of relationality, or "kincentricity", creates an interwoven and cohesive Indigenous worldview in which humans are related to each other, to the natural world (plants, animals, mountains, rivers) and to the spirit world (Salmón, 2012: 21). This principle, consequently, gets played out in the spheres of human interaction, interactions with the natural world, and interactions with Spirit(s) (Battiste, 2000; Kovach, 2009; Wilson, 2008; Salmón, 2012).

In research, Indigenous methodologies enact this epistemic principle of relationality and ensure that research embodies a high level of relational accountability (Kovach, 2009; Smith, 1999; Wilson, 2008). Indigenous methodologies accordingly follow a *relational axiology* and apply the "four Rs" code of research: "respectful representation, reciprocal appropriation, and right and regulations during the research process" (Chilisa, 2020: 24). In terms of the Indigenous methods, they are "a mix of existing methodological approaches and Indigenous practices" (Smith, 1999: 144), and as this approach has developed, Indigenous methods have become more and more distinctly Indigenous (Kovach, 2009; Lavallée, 2009).

Finally, in qualitative research, the researcher is the interpretative tool that transforms data into knowledge. Acknowledging the researcher's positionality brings transparency to the research as it identifies the possible biases in the analysis and the interpretation of findings (Carter et al., 2014). Because of the colonial history of research, positionality or *situatedness* is even more important in Indigenous research. The feminist notion of *situatedness* challenges traditional notions of "objectivity" and confronts western assumptions that knowledge production is uninvested and neutral as it argues that knowledge is always partial and embodied: "We unmasked

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the doctrines of objectivity because they threatened our budding sense of collective historical subjectivity and agency, and our embodied accounts of truth" (Haraway, 1988, p. 578). The critique of positivism by feminism is compatible with the Indigenous critique of positivism in that Indigenous peoples were for a long time the 'objects' of scrutiny of the "conquering gaze from nowhere" (Haraway, 1988: 581). This 'gaze' looked down upon Indigenous people and Indigenous thought (Smith, 1999) as it "claimed the power to see and not be seen, to represent while escaping representation" (Haraway, 1988: 581). To counter this, Indigenous research radically re-positions itself from the perspective of the formerly colonized societies: "It is from the *position* of being the researched that Maori have resisted and challenged social science research. This challenge has confronted both methodological issues and epistemological concerns" (Smith, 1999: 174). Consequently, acknowledging researcher positionality is crucial in Indigenous research and entails that, researchers reflect on their location in relation to Indigenous peoples and Indigenous thought: "In Indigenous research paradigms, not only does it matter *how* research is conducted, but it also matters *who*m the researchers are in the doing of it" (Stelmach, Kovach & Steeves, 2017: 5).

4. Method

This scoping review on Indigenous research will use a mixed-method scoping approach (Western & Indigenous) based on Arksey & O'Malley's (2005) methodological framework (first five steps) and Kovach's (20120) Indigenous conversational method (sixth step). In brief, these steps are: (1) Identifying the broad research questions that clearly articulate the scope of inquiry of the review, (2) Identifying the relevant studies through an elaboration of a database search strategy, (3) Study selection (with inclusion and exclusion criteria), (4) Charting the data by synthesizing it according to key concepts and themes, (5) collating, summarizing, and reporting results, including descriptive numerical analysis and qualitative thematic analysis. The sixth methodological step is a consultation exercise with stakeholders and experts in the field to validate the study findings and interpretations (Arksey & O'Malley, 2005: 23-29). At this point, the final step of the review is in progress.

4.1 *Research questions*

The questions that guided the thematic analysis of the selected studies for this review are: (1) What are the distinctive Indigenous methodological approaches presented in these studies? How do they set Indigenous research apart from other research approaches? (2) What are the main Indigenous epistemological/theoretical frameworks found in the reviewed Indigenous research? Do these epistemologies constitute variations within a unified Indigenous epistemological paradigm? (3) How do most researchers position themselves? What is the connection between researchers' positionalities and their epistemic and methodological choices? What are some of the learning and/or training foundations presented in these studies that enabled Indigenous and non-Indigenous researchers to conduct Indigenous research? What are some of the implications of researcher positionality that can be drawn from these studies? How does self-reflective researcher positionality serve to guarantee that Indigenous knowledge systems are not distorted?

4.2 *The time frame for scoping review: 1996-2020*

In 1991, The Royal Commission on Aboriginal Peoples (RCAP) led to the publication of the RCAP report (1996) which ushered in a time of change in the Canadian political climate and especially in the relationship between the government and Indigenous peoples. This scoping

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review, therefore, begins by looking at Indigenous research conducted after RCAP (1997) and end in 2020. Additionally, in 2015, there is another turning point, the Truth and Reconciliation Commission publishes its report (http://trc.ca/assets/pdf/Calls_to_Action_English2.pdf). This commission increased the attention of research institutions on Indigenous issues and pushed them to enact reconciliation through research. Therefore, the selected studies for this review were subdivided into two categories: research conducted between 1997-2015 and research conducted between 2016-2020.

4.3 *Database search processes*

In collaboration with the education librarian (P.L), a comprehensive search strategy for locating Indigenous research studies was developed. Based on a detailed analysis of Indigenous research scholarship, the search terms used included all the relevant terms identifying Canadian Indigenous populations, Indigenous methodologies, and Indigenous epistemologies (Castellano, 2004; Chilisa, 2020; Kovach, 2009; Smith, 1999; Wilson, 2008).

4.4 *Identification of relevant Indigenous research studies*

The inclusion criteria for selecting qualifying studies were based on (1) geographical criteria (Canada); (2) temporal criteria (1997-2020), and (3) on the methodologies and epistemologies frameworks used which had to be self-identified as Indigenous. Once the initial search was done, the exclusion of studies was based on erroneous population and erroneous methodology. Furthermore, theoretical articles were also excluded from this study (systematic and/or scoping reviews, editorials, book introductions, book reviews and literature reviews). Consequently, the initial search, in four databases (Table 1), yielded a total of 279 articles dating from 1997 to 2020. After 24 duplicates were removed, 255 studies were screened using titles and abstracts. The title and abstract screening process allowed us to look in detail at the Indigenous population participating in the study and at the methodologies used. This step identified 118 articles as being irrelevant and 137 studies as moving up to the next step of the review. The final selection of studies was based on a full-text review of each article deemed relevant. This final stage yielded 46 articles that met all the identified inclusion criteria.

Table 1. List of databases & number of articles found with relevant criteria
(before screening process)

Ovid ERIC	54
Ebsco Bibliography of Native North; Americans Academic Search Complete; Education Source	90
Ovid Medline	65
Canadian Business and Current Affairs	75
Total of studies identified through database searching before screening	279

4.5 *Charting the data*

Two charting tables were developed (supplemental files): one regrouping all the selected studies from 1997-2015 and one from 2016-2020. Nine data items were used to record relevant information from the sources that met all the inclusion criteria, these were: a) authors, year of publication and journal name, (b) discipline/area of research, (c) Indigenous community participating in the study (with geographical location), (d) epistemology/theoretical framework, (e) study design, (f) methods used, (g) community outcomes and/or study objectives met, (h) analytical process for interpretation of results, (i) form of dissemination of study in participating community, (j) researcher positionality in the study.

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5. Results

The final selection of 46 studies was further subdivided into research area categories for subsequent analysis. The following tables (2 & 3) summarize the results for 1997 to 2015 (n=23), and the results for 2016-2020 (n=23).

Table 2. Categorization of research topics (1997-2015)

Topics and subtopics researched	Tot = 23	References:
Education	**Tot = 11**	
Post-secondary education.	3	Graveline, 2001; 2002. Restoule, 2005.
Indigenous & non-Indigenous teacher education	2	Kitchen et al., 2010. Kerr & Parent, 2015.
Social work post-secondary education	2	Dumbrill & Green, 2008. Clark et al., 2010
Indigenous pedagogy/education & culturally relevant education.	4	Sterling, 2002. Alteo, 2009. Bell, 2013. Lavoie, Mark & Jenniss, 2014.
Health:	**Tot = 9**	
Traditional Indigenous healing practices	3	Edge & McCallum, 2006; Iseke, 2010; 2011.
Mental health wellness	4	Hanson & Hampton, 2000; Lavallée & Poole, 2009; Lavallée 2009. Pazderka et al., 2014.
Sexual health	1	Healey, 2014.
Food security and wellness	1	Socha, Zahaf, Chambers, Abraham & Fiddler, 2012.
Resource management	3	Thorpe, 1997;1998. Latulippe, 2015.

Table 3. Categorization of research topics (2016-2020).

Topics researched	Tot = 23	References:
Health:	**Tot = 13**	
Traditional Indigenous healing practices	7	Howell, Auger, Gomes, Brown & Leon, 2016. Tobias & Richmond, 2016. Sasakamoose, Bellegarde, Sutherland, Pete & McKay-McNabb, 2017. McGinnis, Tesarek Kincaid, Barrett & Ham, 2019. Smith, McDonald, Bruce & Green, 2019. Leigh Drost, 2019. Rowe, Straka, Hart, Callahan, Robinson & Robson, 2020.
Youth mental health wellness Youth wellbeing	1 1	Morris, 2016. Petrucka, Bickford, Bassendowski, Goodwill, Wajunta, Yuzicappi, Yuzicappi, Hackett, Jeffery & Rauliuk, 2016.
Sexual health	2	Gesink, Whiskeyjack, Suntjens, Mihic, & McGilvery, 2016. Maranzan, Hudson, Scofich, McGregor & Seguin, 2018.
Substance use disorders treatment	2	Marsh, Cote-Meek, Young, Najavits & Toulouse, 2016. Marsh, Marsh, Ozawagosh & Ozawagosh, 2018.
Education	**5**	
Indigenous pedagogy. Culturally relevant education.	5	Deer, 2016. Robinson, Barrett & Robinson, 2016. Stelmach, Kovach, Steeves, 2017. Twance, 2019. Freeman, Martin, Nash, Hausknecht & Skinner, 2020.
Food sovereignty/knowledge	3	Martens, Cidro, Hart & McLachlan, 2016. Bagelman, Devereaux, & Hartley, 2016. Delormier, Horn-Miller, McComber & Marquis, 2017.
Social work Practice in Indigenous communities.	2	St-Denis Walsh, 2016. St-Denis Walsh, 2017.

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5.1 *Results for Indigenous methodologies, all research areas included (1997-2015)*

In terms of the methodological designs used to foment relational accountability with Indigenous partners from 1997-2015: community-based participatory research incorporating Elders in the research process was the most used method. Elders were included in the research as advisors on ethics committees, co-researchers, and ceremonial experts providing guidance for cultural protocols. The presence of Elders also meant that ceremony (smudging with sage and/or offering tobacco) was used as a research tool to foment relationality and reciprocity.

In terms of the methods: storytelling and storywork (n=11), which center on personal life-stories and the significant cultural narratives and talking circles (n=11) were the most used methods. Unstructured interviews, consistent with oral ways of sharing knowledge and with storytelling, were less used (n=5). One study used the Anishnaabe symbol-based reflection, a new modified arts-based visual research method (Lavallée, 2009), and finally, digital storytelling emerged as a new narrative method that incorporates both audio and video components (Iseke, 2010; 2011).

An important aspect of Indigenous research is reciprocity (Kovach, 2009). This means giving back to the community in ways that benefits the community directly (Smith, 1999; Castellano, 2004). All the research methods used in these studies were connected to community outcomes (see Table 4). These include intergenerational relationship building (Thorpe, 1998; Bell, 2013), revitalization of traditional ways of teaching, learning, and healing (Iseke, 2010, 2011; Bell 2013); knowledge creation in a distinct Indigenous way (Sterling, 2002; Lavallée, 2009), capacity building for local researchers (Thorpe, 1998), positive identity formation for youth (Thorpe, 1998; Bell, 2013) and greater recognition of the validity of Indigenous knowledge (Bell, 2013; Latulippe, 2015).

Table 4. Research methods used and community impacts of Indigenous methodologies (1997-2015).

Research Methods & protocols. Stated impacts	Tot 23	knowledge creation	Capacity building	Revitalization of traditional healing and teaching	Positive Identity formation	Relationship building	Decolonizing	Greater consideration of IK as valid knowledge.
PAR: participatory-action-research & community-based research	8	x	x			x	x	x
Elder involvement and guidance in the research process	12	x	x	x	x	x	x	X
Talking circles	11	x		x		X		
Storytelling/ Storywork	11	x		x	x	x	x	
Unstructured interviews	5	x	x	x				
Ceremony Feasting.	7	x		x		x		
Digital stories – audio and video recordings	1	x	x	x		x		x
Anishnaabe symbol-based reflection	1	x		x	x	x	x	x
Culturally relevant programs	2	x	x	x	x	x	x	x
Poetry/metaphoric narratives	3	x		x			x	

5.2 Results for Indigenous methodologies, all research areas included (2016-2020)

In the second period, the methodological design most used to foment relational accountability was participatory-action-research (PAR) and/or community-based research with Elders deeply involved throughout the research process. The method most used during this time was talking circles/sharing circles/healing circles (n=14). Additionally, "circle methodology" was often combined with storytelling, creating one seamless movement in which stories were shared within a circle (Wilson, 2008). "Feasting" or gathering to eat, was also described as a "sharing circle" type of method since its goal was to share stories about traditional foods (Bagelman, Devereaux & Hartley, 2016). Indigenous autoethnography emerged as an individual reflective storytelling method (St-Denis & Walsh, 2016). Some research projects used semi-structured interviews and conversational methods (n=8), and only two projects included ethnographic field methods (observations and field notes) as part of an 'emic' Indigenous observational approach in which the researcher is a member of the community (Wilson, 2008; Deer, 2016). Finally, digital storytelling continued to develop and expand its scope (Freeman, Martin, Nash, Hausknecht, Skinner, 2020).

In terms of the methods that embody the principles of the "four Rs", ceremonies incorporating tobacco offerings to Elders were part of almost every project (21 out of 23 studies). In terms of identified community outcomes, talking circles (n=14) were linked to relationship building and the creation of knowledge (Bagelman, Devereaux & Hartley, 2016), storytelling was related to revitalizing Indigenous knowledge and relationship building in educational research (Deer, 2016; Stelmach, Kovach & Steeves, 2017), and digital storytelling was be associated to intergenerational knowledge creation (Freeman, Martin, Nash, Hausknecht & Skinner, 2020) (see Table 5).

Table 5. Distribution and impacts of Indigenous methodologies (2016-2020).

Research Methods & protocols. / Stated impacts	Tot: 23	Knowledge creation	Capacity building	Revitalization of traditional healing and teachings	Living documents (digital stories & videos)	Positive Identity formation	Relation ship building	Restoring food security	Greater consideration of IK as valid knowledge
PAR: participatory-action-research.	21	x	x				x	x	x
Elder involvement and guidance in the research process	21	x	x	x			x	X	x
Talking circles Health circles Sharing circles Focus groups circles	14	x		x			x	x	
Storytelling/ Storywork	13	x		x		x	x	x	
Semi-structured Interviews/ Conversational method	8	x		x					
debriefing Focus groups/circles	3						x		
Digital stories – audio and video recordings	1	x	x	x			x		x
Feasting	1	x		x			x	x	x
Auto-ethnography	2	x	x	x		x	x		x
Field notes and observations	2	x							

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5.3 *Results for Indigenous epistemologies*

The results of the epistemological analysis were divided not by period but by area of research. A disciplinary subdivision imposed itself because different disciplines tend to utilize different theoretical frameworks. Education research, for example, tends to be associated with a post-positivistic perspective, that might include constructivist, phenomenological or critical theoretical frameworks (Kovach, 2009). On the other hand, health research (epidemiology, treatment research) tends to be associated with a scientific positivist outlook and with quantitative methods (Smith, 1999). The following analysis, therefore, was aimed at seeing if depending on the area of research, Indigenous epistemologies were applied differently. The table below (6) lists all the Indigenous theoretical frameworks used in the studies reviewed and links them to different areas/disciplines. Subsequently, some of these frameworks are discussed more in detail.

Table 6. Area and topic-specific uses of Indigenous epistemologies (1997-2020)

Indigenous Epistemological principles used/ theoretical frameworks	Post-secondary education/ teacher education	Indigenous pedagogy/ culturally relevant education	Social work Teaching and practice	Mental Health/ Treatment and recovery	Health and holistic wellness	Sexual Health / Violence	Traditional healing practices	Food (knowledge and Indigenous practices)	Natural resource management
Sustainable self-determination								x	
Nehiyaw Cree epistemology		x			x	x	x		
Medicine Wheel	x	x		x	x	x	x	x	
4 Rs (respect, reciprocity, responsibility, relevance)	x	x		x	x				
Ethical space				x	x	x	x		
Anishinaabe "*All our relations*"	x	x	x	x	x	x	x	x	x
IQ (Inuit TK)				x		x			x
Warrior philosophy			x						
Two-Eyed seeing approach				x	x	x			x
Post-colonial / anti-colonial	x	x	x				x		
Decolonizing perspective	x	x	x	x	x		x	x	x
The Two-Row Wampum: Treaty perspective									x
Sweat Grass porcupine quill box					x				
Nuu-chah-nulth philosophy		x							
7 Grand Father Teachings	x	x							
Critical Tribal theory	x		x						
Indigenous storywork.	x		x					x	
Ethical relationality.	x		x						
Nlakapamux cultural knowledge and teachings		x							

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5.4 *Epistemologies in Indigenous Health studies: 1997-2020*

In sum, all the epistemologies employed in the health-related studies privileged a holistic and decolonizing approach and therefore prioritized Indigenous "teachings" about health over pathological considerations. These epistemologies were characterized by using place-based cultural references (Smith 2018) and emphasizing the larger worldview of connectedness, or the principle of "*all our relations* and its importance to physical, mental, emotional and spiritual health" (McGinnis et al., 2019: 165). Consequently, the Medicine Wheel was used as a theoretical framework, as well as the Anishinaabe, Seven Generations Teaching (Lavallée, 2009; Lavallée & Poole, 2010), the Cree health teaching circle (Pazderka et al., 2014), and Inuit knowledge or *Inuit Qaujimajatuqangit* (IQ) (Thorpe, 1998; Healey, 2014, Morris, 2016). These frameworks can also be considered anti-colonial as they affirm Indigenous people's rights to self-determination and include the larger social and political context of colonization and intergenerational trauma (McGinnis et al., 2019). In this way, for example, the "Wise-practices approach" is said to be "inclusive, locally relevant, sustainable, respectful, flexible, and pragmatic" and considers the "historical, societal, cultural, and environmental factors" that play into a study (Pretrucka et al., 2016, p. 181). *Indigenism* in health research, therefore, emerges as a form of epistemic resistance that "directly confronts and challenges colonial oppression and uphold Indigenous self-determination." (Rowe et al., 2020: 160). Therefore, the Indigenous health studies reviewed defied the biomedical dominant model of health and proposed a holistic vision and approach to health issues and healing: "Where the Aboriginal health model is holistic and encompasses the four dimensions of health (physical, mental, emotional, and spiritual well-being), the Western biomedical concept of health often concentrates on disease and infirmity" (Howell et al. 2016: 114).

5.5 *Indigenous educational studies: 1997-2020*

In educational research, the epistemologies used also espoused a holistic and relational Indigenous worldview. Indigenous stories were given the forefront as concrete manifestations of Indigenous epistemologies. Storywork and storytelling were used as theoretical and analytical frameworks (Alteo, 2009; Stelmach, Kovach & Steeves, 2017; Deer, 2016). The Medicine Wheel was also used to connect education and wellness as a "wheel-as-model approach" proposing a framework used to promote a holistic and integrated approach to education (Robinson, Barrett & Robinson 2016, p. 111). Land-based educational research using Anishinaabe epistemologies also underlined how research must prioritize traditional ecological knowledge to support educational self-determination (Twance, 2019). Additionally, Critical tribal theory (a subset of Critical race theory) was used to revalorize and preserve Indigenous knowledge, but also, to transform Indigenous education (Alteo, 2009). Lastly, Indigenous research in education also used "a unifying Indigenous philosophy" to amplify the voice of Indigenous students and their experiences in the education system (Stelmach, Kovach & Steeves, 2017: 5).

5.6 *Results for researcher positionality*

In 40 out of the 46 studies reviewed, authors explicitly located themselves and engaged in a self-reflexive examination of their positionality and discussed how this *location* influenced them as knowledge producers. Additionally, most researchers reflected on the principle of *relationality* in the process of doing Indigenous research and on the importance of having and maintaining respectful relationships/partnerships with Indigenous participants. Furthermore, most researchers acknowledged that this self-reflexive exercise was a crucial aspect of Indigenous research (Wilson, 2008). Nonetheless, there was less consensus among researchers regarding what best qualified them to do Indigenous research in the first place. In some cases, the accumulated knowledge and professional experiences in Indigenous contexts were seen as

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enabling non-Indigenous researchers to do Indigenous research (Robinson, Barrett & Robinson, 2016; Healy, 2014, Thorpe 1998). In other cases, it was argued that it was the Indigenous *sensibility* of Indigenous researchers that best *positioned* them to do Indigenous research (Stelmach, Kovach & Steeves, 2017; Twance, 2019).

Based on what researchers said about their own locations and experiences with Indigenous peoples, three main positions were identified throughout the studies reviewed: (1) the emic/insider Indigenous researcher(s), (2) the collaborative team made up of a mix of insider and outsider perspectives, and (3) the outsider Settler researcher(s). The table below (Table 7) summarizes what characterizes each position and identifies where each study is located.

Table 7. Locating positionality in Indigenous research (all studies).

Emic/insider research:	Insider/outsider research:	Outsider research:
Self-Identified Indigenous researcher. Close ties to an Indigenous community and/or kinship ties to community members. Privilege relationship with Elders. Privilege relationship with a specific land/place, Ecological place-based knowledge; Knowledge/familiarity with an Indigenous language. Knowledge/familiarity with cultural protocol (i.e., tobacco). Epistemology lived as a personal philosophy/way of life. Prioritizing that research benefits directly Indigenous communities.	Mixed research team that claims *both* positionalities (insider and outsider) and *used* both positionalities in research. Sometimes uses a *mixed method* approach with some Indigenous and some non-Indigenous methods/epistemologies. Might use an Indigenous theoretical framework based on the Indigenous culture/origins of the Indigenous researchers.	Research team made up exclusively of Euro-Canadian researchers. Recognition of Settler identity. Trained in Euro-Canadian education. Working relationships with Indigenous participants/communities/organizations. 'Book knowledge' of Indigenous epistemologies Indigenous epistemologies not lived as a personal philosophy. Working actively to disrupt it and decolonize research. Seeking long-lasting relationships with Indigenous communities even if this is sometimes impossible beyond the completion of a research project.
Research studies 1997-2015		
Graveline, 2001; 2002. Sterling, 2002. Restoule, 2005. Edge & McCallum, 2006. Alteo, 2009. Lavallée, 2009. Iseke, 2010, 2011. Bell, 2013.	Thorpe, 1997; 1998. Hanson & Hampton, 2000. Dumbrill & Green, 2008. Clark, Drolet, Arnouse, Walton, Tamburro, Mathews, Derrick, Michaud & Armstrong, 2010. Lavallée & Poole, 2009. Kitchen, Cherubini, Trudeau & Hodson, 2010. Socha, Zahaf, Chambers, Abraham & Fiddler, 2012. Lavoie, Mark & Jenniss, 2014. Pazderka, Desjardins, Makokis, MacArthur, Steinhauer, Hapchyn, Hanson, Van Kuppeveld & Bodor, 2014. Kerr & Parent, 2015. Latulippe, 2015.	Healey, 2014.
Research studies 2016-2020		
Deer, 2016. Delormier, Horn-Miller, McComber & Marquis, 2017. McGinnis, Tesarek Kincaid, Barrett & Ham, 2019. Sasakamoose, Bellegarde, Sutherland, Pete & McKay-McNabb, 2017. Smith, McDonald, Bruce & Green, 2019. Twance, 2019.	Bagelman, Devereaux, & Hartley, 2016. Gesink, Whiskeyjack, Suntjens, Mihic, & McGilvery, 2016. Howell, Auger, Gomes, Brown & Leon, 2016. Marsh, Cote-Meek, Young, Najavits & Martens, Cidro, Hart & McLachlan, 2016. Morris, 2016. Toulouse, 2016. Yuzicappi, Hackett, Jeffery & Rauliuk, 2016. Tobias & Richmond, 2016. Stelmach, Kovach, Steeves, 2017. St-Denis & Walsh, 2016; 2017. Marsh, Marsh, Ozawagosh & Ozawagosh, 2018. Petrucka, Bickford, Bassendowski, Goodwill, Wajunta, Yuzicappi, Maranzan, Hudson, Scofich, McGregor & Seguin, 2018. Freeman, Martin, Nash, Hausknecht & Skinner, 2020. Rowe, Straka, Hart, Callahan, Robinson & Robson, 2020.	Robinson, Barrett & Robinson, 2016. Leigh Drost, 2019.

6. Discussion

There was an increase in the number of Indigenous research projects conducted in Canada between 1997 and 2020, especially after 2015. More precisely, 23 studies were identified over the first period of 8 years, from 1997 to 2015, and 23 studies were identified over the second period of 4 years, from 2016 to 2020, corresponding to a 100% increase. This can certainly be related to the publication of the TRC report (2015) and to the impetus of research institutions to enact reconciliation with Indigenous peoples in Canada through research.

Based on our findings, over the last 23 years, not only did the number of Indigenous research projects increase but also the number of collaborations between Indigenous and non-Indigenous researchers augmented (1997-2015=11 and 2016-2020=15). This can be interpreted as a positive thing as it guarantees that current research in Indigenous contexts is not reproducing past mistakes where non-Indigenous researchers were "appropriating the vision of the less powerful while claiming to see from their position" (Haraway, 1988: 584). Indeed, as mentioned before, Indigenous research must include the *sensitivities* and *perspectives* of Indigenous peoples to be valid: "A non-indigenous, non-Maori person can be involved in Kaupapa Maori research, but not on their own" (Smith, 1999: 186). Furthermore, collaborations constitute an epistemic bridging or a "shared conversation in epistemology" between Settler allies and Indigenous scholars which is fertile ground for decolonizing research as it privileges "contestation, deconstruction, passionate construction, webbed connections, and hope for the transformation of systems and ways of seeing" (Haraway, 1988: 585).

Nonetheless, the great number of collaborations noted is also consistent with the fact that there are very few Indigenous researchers in academia and, therefore, most Indigenous research must be conducted in mixed teams: "One of the impacts of colonialism is that the number of Indigenous researchers remains low, representing less than 1% of Canadian scholars" (Hart, Straka & Rowe, 2017: 332). Hence, we must not idealize collaborations as they are not devoid of risks and require negotiations in multiple contexts and involve researchers in different accountabilities (Hart, Straka & Rowe, 2017).

Concurrently, researcher *relationality* with Indigenous peoples also stands out as a crucial factor determining *how* Indigenous research will be conducted. Indeed, there appears to be a positive correlation between researcher positionality and relationality: the more a researcher is centered in an Indigenous-insider position, with close ties to an Indigenous community, the more his knowledge is *situated* from "the vantage point of the subjugated" (Haraway, 1988: 581), and the more his methodologies are accountable to communities and centered in Indigenous place-based cultures. For non-Indigenous researchers, this is similar, the more they are *centered* in their relationships to Indigenous partners and communities, the more they include *their* perspective, and reflect on their own position, the more they practice relational accountability.

Finally, the question of what constitutes "good" Indigenous research imposes itself. It has been argued that "good" qualitative research is marked by the consistency between epistemology, methodology and method (Carter & Little, 2007). But in the case of Indigenous research, we can argue that 'good' Indigenous research also requires an internal coherence between a researcher's *situatedness* or positionality, his/her epistemic stance, his/her methodology, and the methods used. This coherence is needed because Indigenous knowledge systems are not simply theoretical constructions learned in university but are embodied knowledge systems that are learned and enacted through relationships, in community and through ceremonies. The Medicine Wheel, for example, is not just a disincarnated health/wellness theory, it is an actual healing path, with teachings and principles enacted in rituals like the Sweat lodge (Lavallée, 2009). In this way, Indigenous epistemologies are intimately connected to a researcher's positionality and this connection between epistemology, positionality and

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methodology must be explicitly stated if the research conducted is to demonstrate internal consistency or coherence.

Based on this criterion, some research projects were identified as having a high level of internal coherence, meaning that authors explicitly connected their positionality with their theoretical framework, which in turn justified their methodology. On the other hand, others had a weaker or lower level of inner coherence, and a discrepancy was identified between positionality, epistemology, and methodology. The deciding factor was not the articulation of an Indigenous epistemological framework but rather how well-grounded this framework was in relation to the *situatedness* of the researchers conducting the study.

The table below (Table 8) lists several examples and links positionality, relationality with the epistemic and methodological choices of the researchers conducting the studies. This table also demonstrates how some studies can be identified as being stronger or more internally coherent than others.

Table 8. Correlation between positionalities, methodologies, and epistemologies

Researcher positionality	Relationality with Indigenous communities.	Epistemological choices and articulation of theoretical framework	Methodological choices.
Insider/Indigenous positionality. Self-identified Indigenous researcher. Connected to place-based knowledge system, Lived/embodied philosophy. Close ties with Elders. Strong relationship with a specific community/land/place. **Examples:** Nicole Bell (2013), Lynn Lavallée (2009) and Smith (2018).	Strong sustained long terms relationships with Indigenous peoples. Ancestral ties to a community and/or family ties to community members. Personal involvement/close ties with Indigenous communities leads to prioritizing research participants as co-creator of knowledge.	Clear articulation of an Indigenous epistemology with identified place-based culture – well-grounded. **Examples:** Nicole Bell (2013), Anishnaabe cultural-based education is based on Anishnaabe teachings, linked to positionality. Smith (2018) and the "Sweetgrass and porcupine quill box" epistemology-based Ojibwe culture linked to posionality. Lavallée (2009) Anishnaabe symbol methodology based on Anishnaabe teachings linked to positionality.	Methods privilege Indigenous ways of knowing and doing. The methods chosen are clearly linked to the epistemological framework. **Examples**: Anishnaabe symbol-based reflection corresponds to Anishnaabe epistemology Lavallée (2009). Smith (2018) and the "Sweetgrass and porcupine quill box" methodology-based Ojibwe culture.
Insider/outsider research: Mixed research team: Includes *both* positionalities and *used* both positionalities in research. **Examples:** Morris (2016) with Inuit partners; Thorpe (1998) with Inuit partners and Latulippe (2015) with First Nation partners.	Strong sustained relationships with Indigenous peoples. Personal involvement/close ties with Indigenous communities leads to prioritizing that research benefits these communities. And Treaty partners: Outside allies working alongside Indigenous scholars.	Mainly uses an Indigenous theoretical framework clearly based on the Indigenous culture of the Indigenous researchers – no appropriation. Treaty perspective of respectful relations between Indigenous and non-Indigenous ways of knowing. **Example**: Natasha Thorpe (1998) used Inuit knowledge (IQ) as its epistemological framework related to mix team's positionality. Morris (2016) used IQ as theoretical framework in collaboration with Inuit women's association. Latulippe, (2015) Wampum belt framework used to reflect Treaty approach of respectful collaboration.	Mixed method approach with some Indigenous and some non-Indigenous research methods. Uses to its advantage the cultural differences of researchers: Indigenous research may conduct interviews, lead sharing circles with Indigenous participants for example. **Example:** Natasha Thorpe (1998) used her position to ask 'naïve' questions. Morris (2016) used survey and talking circles with Inuit Elders with Inuit facilitators. Latulippe, (2015) used Elders' guidance for research.
Outsider research: Settler researchers. Trained in Euro-Canadian education. Mostly book knowledge of Indigenous epistemologies.	Identified as allies working alongside Indigenous community partners. Working relationships with Indigenous.	Critical, Anti-colonial and decolonizing theoretical frameworks elaborated. Indigenous epistemology glossed over and vague, not based on a specific culture, the incongruity between	Use of decolonizing methodologies. Engage with Indigenous methods as an effort to honour and give voice to Indigenous participants.

Working relationships with Indigenous participants/communities/organizations. **Examples:** Robinson, Barrett, and Robinson (2016)	Seeking long-lasting relationships with Indigenous cultures but this might not be possible beyond the research project as such.	researcher's (non-Indigenous) positionality and epistemology. **For example**: Robinson, Barrett and Robinson (2016) and Mi'kmaw culturally relevant physical education no specific reference to Mi'kmaw epistemology.	**Example:** The conversational method used by Robinson, Barrett and Robinson (2016).

7. Limitations

While some Indigenous communities across Canada have chosen to engage in research alongside Indigenous and non-Indigenous scholars, many have chosen to not do this type of work. Therefore, this review, although detailed, only represents the tip of the iceberg in terms of the vast creation of knowledge that is happening within Indigenous communities across Canada.

Methodologically speaking, the database search strategy for the scoping review drew from pertinent terms identified in the relevant literature, but this strategy might have excluded inadvertently some valuable studies that might have used Indigenous terms to describe their methodologies and epistemologies. This scoping review also did not include a systematic bibliographical search of the selected studies; thus, other valuable studies might have been inadvertently excluded.

8. Conclusion

This scoping review, based on 46 studies conducted across disciplines in Canada between 1997 and 2020, found that, over the last two decades, Indigenous research has come into prominence. Furthermore, this review also has discovered that the most prominent form of Indigenous research is across contexts, as collaborations between Indigenous and non-Indigenous researchers. All these trends point to the fact that Indigenous knowledge systems are becoming less marginalized in the academy, yet, paradoxically, Indigenous researchers remain few in numbers. Considering this, it is crucial to reflect on the positionality of researchers conducting Indigenous research. Indeed, it is important to consider if, in the research conducted, there is a coherence between a researchers' position, his epistemic stance, and his methodology, as this will allow Indigenous knowledge systems to be protected from misrepresentation and distortion. Traditionally, Indigenous knowledge has been protected in communities by "knowledge keepers" who were responsible for safeguarding it and made sure that those who received it would protect it (Salmon, 2020). How can this be done in an academic context? By making sure that the Indigenous partners involved in research accompany non-Indigenous researchers in elaborating their theoretical frameworks and methodologies so that these are grounded in *relationships* and in specific place-based cultures (Hart, Straka & Rowe, 2017). Finally, the task of protecting Indigenous knowledge cannot just fall on the shoulders of Indigenous partners, non-Indigenous researchers must also take it upon themselves to internalize the research principles of Indigenous research outlined by Indigenous scholars.

References

Alteo, M. (2009). Understanding Aboriginal learning ideology through Storywork with Elders. *Alberta Journal of Educational Research*, *55*(4), 453-467.

Arksey, H., & O'Malley, L. (2005). Scoping studies: towards a methodological framework. *International Journal of Social Research Methodology*, *8*(1), 19-32.

Bagelman, J., Devereaux, F., & Hartley, R. (2016). Feasting for change: reconnecting with food, place & culture. *International Journal of Indigenous Health*, *11*(1), 6-17.

Battiste, M. (2013). *Decolonizing education: Nourishing the learning spirit*. Saskatoon: Purich Publishing.

Battiste, M. (2008). Research ethics for protecting Indigenous knowledge and heritage: Institutional and researcher responsibilities. In N. K. Denzin, Y. S. Lincoln & L. T. Smith. (Eds), *Handbook of critical and Indigenous methodologies* (pp. 497-509). Thousand Oaks: SAGE Publications.

Battiste, M. A., & Henderson, Y. J. (2000). *Protecting Indigenous knowledge and heritage: A global challenge*. Saskatoon: Purich Publishing.

Bell, N. (2013). *Just do it*: Anishinaabe culture-based education. *Canadian Journal of Native Education, 36*(1), 36-58.

Carter, C., Lapum, J. L., Lavallée, L. F., & Martin, L. S. (2014). Explicating positionality: a journey of dialogical and reflexive storytelling. *International Journal of Qualitative Methods*, 362-376.

Castellano, M. B. (2000). Updating Aboriginal traditions of knowledge. In G. J. S. Dei, B. L. Hall & D. G. Rosenburg (Eds.), *Indigenous knowledge in global contexts* (pp. 101-112), Toronto: University of Toronto Press.

Castellano, M. B. (2004). Ethics of Aboriginal research. *Journal of Aboriginal Health*, *1*(1), 98-114.

Carter, S. M., & Little, M. (2007). Justifying knowledge, justifying method, taking action: epistemologies, methodologies, and methods in qualitative research. *Qualitative Health Research*, *17*(10), 1316-1328.

Chilisa, B. (2020). *Indigenous research methodologies, 2nd edition*. SAGE publication Asia-Pacific ltd.

Deer, S. (2016). An investigation of the role of legends and storytelling in early childhood practices in a Kanien'kehá:ka (Mohawk) early childhood facility. *In education*, *22(1)*, 110-126.

Freeman, S., Martin, J., Nash, C., Hausknecht, S., & Skinner, K. (2020). Use of a digital storytelling workshop to foster the development of intergenerational relationships and preserve culture with the Nak'azdli First Nation: Findings from the Nak'azdli Lha'hutit'en Project. *Canadian Journal on Aging / La Revue canadienne du vieillissement*, *39*(2), 284-293.

Graveline, F. J. (2001). Imagine my surprise: smudge teaches wholistic lessons. *Canadian Journal of Native Education*, *25*(1), 6-18.

Graveline, F. J. (2002). Teaching tradition teaches us. *Canadian Journal of Native Education*, *26*(1), 11-29.

Iseke, J. M. (2010). Importance of Métis ways of knowing in healing communities. *Canadian Journal of Native Education*, *33*(1), 83-97.

Iseke, J. M., & Moore, S. (2011). Community-based Indigenous digital storytelling with Elders and youth. *American Indian Culture and Research Journal*, *35 (4),* 19-38.

Haraway, D. (1988). Situated knowledges: the science question in feminism and the privilege of partial perspective. *Feminist Studies*, *14*(3), 575-599.

Hart, M. A., Straka, S., & Rowe, G. (2017). Working across contexts: practical considerations of doing Indigenist/anti-colonial research. *Qualitative Inquiry*, *23*(5), 332-342.

Healey, G. (2014). Inuit parent perspectives on sexual health communication with adolescent children in Nunavut: "It's kinda hard for me to try to find the words." *International Journal of Circumpolar Health*, *73*(1), 1-8.

Howell, T., Gomes, T., Brown, F. L., & Leon, A. Y. (2016). Sharing Our wisdom: A holistic Aboriginal health initiative. *International Journal of Indigenous Health*, *11*(1), 111-132.

Iseke, J., & Moore, S. (2011). Community-based Indigenous digital storytelling with Elders and youth. *American Indian Culture and Research Journal*, *35*(4), 19-38.

Kincheloe, J., & Steinberg, S. (2008). Indigenous knowledges in education: complexities, dangers, and profound benefits. In N. K. Denzin, Y. S. Lincoln & L. T. Smith (Eds), *Handbook of critical and indigenous methodologies* (pp. 135-156). Thousand Oaks: SAGE Publications.

Kovach, M. (2010). Conversation method in Indigenous research. *First Peoples Child & Family Review, 5(1),* 40-48.

Kovach, M. (2009). *Indigenous methodologies characteristics, conversations and contexts*. Toronto: University of Toronto Press.

Lavallée, L. F. (2009). Practical application of an Indigenous research framework and two qualitative Indigenous research methods: sharing circles and Anishnaabe symbol-based reflection. *International Journal of Qualitative Method*s, 21-40.

Lavallee, L. F., Poole, J. M. (2010). Beyond recovery: colonization, health and healing for Indigenous people in Canada. *International Journal of Mental Health and Addiction*, *8*(2), 271-281.

Latulippe, N. (2015). Bridging parallel rows: epistemic difference and relational accountability in cross-cultural research. *International Indigenous Policy Journal*, *6*(2), 1-17.

Martin, B. (2017). Methodology is content: Indigenous approaches to research and knowledge. *Educational Philosophy and Theory*, *49*(14), 1392-1400.

McGinnis, A., Tesarek Kincaid, A., Barrett, M. J., & Ham, C. (2019). Strengthening animal-human relationships as a doorway to Indigenous holistic wellness. *Ecopsychology*, *11*(3), 162-173.

Morris, M. (2016). Inuit involvement in developing a participatory action research project on youth, violence prevention, and health promotion. *Études/Inuit/Studies*, *40*(1), 105-125.

Pazderka, H., Desjarlais, B., Makokis, L., MacArthur, C., Steinhauer, S., Hapchyn, C. A., Hanson, T., Van Kuppeveld, N., & Bodor, R. (2014). Nitsiyihkâson: The brain science behind Cree teachings of early childhood attachment. *First Peoples Child & Family Review*, *9*(1), 53-65.

Robinson, D. B., Barrett, J., & Robinson, I. (2016). Culturally relevant physical education: educative conversations with Mi'kmaw Elders and community leaders. *In Education*, *22*(1), 3-21.

Rowe, G., Straka, S., Hart, M., Callahan, A., Robinson, D., & Robson, G. (2020). Prioritizing Indigenous Elders' Knowledge for Intergenerational Well-being. *Canadian Journal on Aging / La Revue canadienne du vieillissement*, *39*(2), 156-168.

Salmón, E. (2012). *Eating the landscape: American Indian stories of food, identity, and resilience*. Tucson: University of Arizona Press.

Smith, L. T. (1999). *Decolonizing methodologies: Research and Indigenous peoples*. London: Zed Books.

St-Denis, N., & Walsh, C.A. (2016). Reclaiming my Indigenous identity and the emerging warrior: An autoethnography. *Journal of Indigenous Social Development, 5 (1)*, 1-17.

Stelmach, Kovach & Steeves. (2017). Casting a new light on a long shadow: Saskatchewan Aboriginal high school students talk about what helps and hinders their learning. *Alberta Journal of Educational Research*, *63(1)*. 1-20.

Sterling, S. (2002). Yetko and Sophie: Nlakapamux cultural professors. *Canadian Journal of Native Education*, *26*(1), 4-10.

_____

Thorpe, N. L. (1998). The Hiukitak School of Tuktu: Collecting Inuit ecological knowledge of caribou and calving areas through an elder-youth camp. *Arctic*, *51*(4), 403-408.

Truth and Reconciliation Commission report (2015). http://trc.ca/assets/pdf/Calls_to_Action_English2.pdf.

Twance, M. (2019). Learning from land and water: exploring mazinaabikiniganan as indigenous epistemology. *Environmental Education Research*, *25*(9), 1319-1333.

Wilson, S. (2008). *Research is ceremony: Indigenous research methods*. Halifax: Fernwoods.