Exploring Indigenous education leadership research in Canada, the United States, Australia and New Zealand

Xiao Fan

City University of Hong Kong, Kowloon Tong, Hong Kong, and

Peng Liu

University of Manitoba, Winnipeg, Canada

Abstract

Purpose – This literature systematically reviews articles published in "core" international journals on the topic of Indigenous education leadership over the period from 2000 to 2018 in four English-speaking countries, covering Canada, America, Australia and New Zealand, in which all of them have long colonial history and Indigenous population. These reviews provide insights into the nature of this emergent literature and generate many implications that required for further research in Indigenous education leadership.

Design/methodology/approach – In this study, a vote counting method was employed and a clearly delimited body of research on Indigenous education leadership was also identified. The vote counting method can enlarge the perspectives on the noticeable heterogeneity of Indigenous education leadership within the four English-speaking countries. This is the basic constitutive element for the development of a comparative literature in Indigenous education leadership. Moreover, this method can clearly calculate the annual number of articles about Indigenous education leadership, and the various methods used in the publications of Indigenous education leadership can be figured out as well, which helps to find out the different patterns of changes on Indigenous education leadership.

Findings – This study identifies the patterns of Indigenous educational leadership research across four English-speaking countries, which will contribute to the development of research in this regard.

Originality/value – This is one of the first studies about Indigenous educational leadership in the world. It will not only contribute to education practice but also leadership theory development.

Keywords Australia, Canada, United States, Review, New Zealand, Indigenous education leadership

Paper type Literature review

Introduction

During the period from 2000 to 2018, the amount of international literature related to Indigenous education leadership increased (Bird *et al.*, 2013; Hohepa, 2013). However, this field remains under-researched (Blakesley, 2008; Blakesley, 2011; Brower, 2016). The purpose of this review was to explore the patterns of knowledge production related to Indigenous education leadership in four English-speaking countries between 2000 and 2018. We aimed to address the following overarching research questions:

(1) How is leadership understood in the Indigenous education leadership literature?

(2) How many articles on Indigenous education leadership were published each year from 2000 to 2018 in the four targeted English-speaking countries, and how did these numbers change over this time period?

(3) How has this literature been distributed across journals in the four countries?

(4) What methodological preferences can be seen in the scholarship on Indigenous education leadership in the four English-speaking countries?

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(5) What have been the topical foci of articles by scholars studying Indigenous education leadership in these four countries?

These five research questions were generated based on the five perspectives recommended by Hallinger (2013) for a good review in education leadership. This paper starts with an exploration of the multiple uses of the term "leadership," both as it has been used by Indigenous leaders and as it has been applied to Indigenous peoples in education. Then, we examine the annual number of publications on Indigenous education leadership within the target countries from 2000 to 2018 and look for trends within this body of literature. We endeavor to map out Indigenous education leadership research in the above-mentioned four English-speaking countries and point out possible future research directions. In this paper, we also categorize the methods and foci of Indigenous education leadership scholarship.

Method
In this study, a clearly delimited body of research on Indigenous education leadership from 2000 to 2018 was identified, and a vote-counting method was employed to spot trends within this literature. The vote-counting method brought to light the noticeable heterogeneity of Indigenous education leadership scholarship within the targeted four English-speaking countries. Recognizing this heterogeneity could spark the development of a comparative literature on Indigenous education leadership. Moreover, this method allowed us to calculate the annual number of articles published on Indigenous education leadership, and to figure out the frequency with which various research methods have been mentioned in these publications. These calculations helped to reveal patterns of change in the study of Indigenous education leadership.

The selection criteria for this literature review followed Hallinger's (2013) suggestion that data sources should be defined clearly. These criteria allowed us to include digital data sources, clearly delineate the boundaries of the research, and assure the quality of the included literature. When an article fit this search criteria and its key words included "Indigenous education leadership," "Indigenous leaders," "Indigenous education leaders," or "Indigenous school leader," the article was downloaded for further analysis. To facilitate analysis, we coded the data to mark the location of the study described in each article (i.e. Canada, the United States, Australia or New Zealand).

Data collection
Describing the patterns of Indigenous education leadership scholarship between 2000 and 2018 was one of the primary goals of this study. The rationale for choosing the four countries of Canada, the United States, Australia and New Zealand and the period from 2000 to 2018 was historical as well as pragmatic. These countries have long colonial histories and comparatively large Indigenous populations, and therefore tend to have more numerous and in-depth publications on Indigenous issues. The number of relevant publications in these countries has also increased since 2000. Finally, choosing this recent period was conducive to keeping the research up to date.

This review incorporated 51 articles on Indigenous leadership in educational settings published between 2000 and 2018 in international English-language refereed journals and books. In this review, a systematic search of "core" journals using SSCI, SCIE and SCI was adopted. The core journals included *Tribal College*, *American Indian Quarterly*, *Canadian Journal of Native Education*, *International Journal of Leadership in Education*, *Canadian Journal of Native Education*, *American Journal of Education*, *Canadian Journal of Educational Administration and Policy*, *The Australian Journal of Indigenous Education*, *Journal of*

Educational Administration, Studies in American Indian Literatures, The International Journal of Educational Management, and the database ProQuest Dissertations and Theses.

Priority was given to the recent reputational rankings of international Indigenous leadership journals in education, because focusing on the internationally published literature can offer a useful perspective on knowledge production from and about Indigenous education leadership. This subset of the literature was suited to our goal of understanding the characteristics of the current knowledge base on Indigenous education leadership in the four selected English-speaking countries. In addition, this selection method ensured that the periodicals, as a whole, would represent a wide range of moderately to highly selective international journals focusing on theoretical and empirical knowledge in Indigenous education leadership.

Data analysis
Fifty-one publications met the selection criteria of this review. This literature on Indigenous education leadership was examined using a comparative analysis method.

(1) After an initial review of the literature, we developed a tentative coding frame based on the initial data analysis.

(2) Each theme in the initial coding frame was assigned a code. For instance, "Indigenous women" was labeled as "2". Then, "Indigenous women leaders" was coded as "2A"; "the challenges of Indigenous women leaders" as "2B"; "the importance of Indigenous women leaders" as "2C"; and so forth.

(3) The entire body of the literature included in this study was examined in detail for relevant themes and sub-themes. The thematic structure of the model evolved organically as the coding process was conducted. New themes and sub-themes were added as they were discovered. Eventually, each perspective expressed in each article was coded.

(4) Finally, similar codes from across the body of literature were gathered together into the themes that were used to update the initial coding frame.

As the researchers went through the literature, they also extracted other specific data from these 51 articles, such as the annual number of relevant journal articles published, the distribution of these articles among the four countries, the research methods described in the articles, and their topics of study; these data will be discussed later in this paper.

Results
General pattern of knowledge production
The results of this literature review are organized below based on the research questions presented in the previous sections of this article.

How is leadership understood in the Indigenous education leadership literature?
As Indigenous people have experienced colonization and assimilation over many time periods, they have exercised various forms of leadership that have reflected their current situation and historical background. One theme that emerged from the literature is that Indigenous leadership is linked to values and beliefs. Foley (2010) argued that Indigenous leaders invoke common values and beliefs, establish codes of conduct, form acceptable and invisible norms, allow communication of expectations, and conduct other organizational functions; he stated that these leadership behaviors form the foundation of Indigenous

educational leadership. Similarly, other scholars have expressed the view that Indigenous educational leaders should establish leadership systems guided by Indigenous knowledge, values and practices (Hohepa, 2013; Santamaría *et al.*, 2015).

Indigenous education leadership has also been regarded as a cultural phenomenon. Some scholars believe that leadership is variable in different contexts; these variations between different cultural contexts can be subtle (Preston *et al.*, 2016). Therefore, Hohepa (2013) proposed that education leaders should know how to implement cultural preferences in a social environment and how to operate properly within a given cultural context. Also, Fredericks *et al.* (2014) advocated that Indigenous education leaders should respect Indigenous culture and traditional values, knowledge, and resources. In addition, leaders need to participate in the "intercultural space" to enable them to best support Indigenous students' achievement (D'Arbon *et al.*, 2009) in the mainstream education system without compromising their cultural identity.

Additionally, some scholars have associated the concept of community with Indigenous leadership. For example, a few scholars have assumed that Indigenous leadership is rooted in the values of Indigenous leaders' communities (Blakesley, 2010; Bird *et al.*, 2013). D'Arbon and his colleagues argued that continuous learning between leaders and their communities is essential for balancing leadership styles (D'Arbon *et al.*, 2009). Moreover, other studies have pointed out that Indigenous educational leaders need to understand their communities, engage in genuine dialogue and respond to community needs (Cherubini and Volante, 2010; D'Arbon *et al.*, 2009). Therefore, leadership can be understood as the process of influencing others to take action to improve communities or organizations or to achieve goals in the education field (Williams, 2012). Based on the literature review, Indigenous educational leadership can be regarded as rooted in values and beliefs, as a cultural phenomenon, and as the leadership of a community. Overall, leadership within an Indigenous education context is still difficult to define clearly (Blakesley, 2008; Blakesley, 2011; Brower, 2016; Lickers, 2016; Williams, 2012). Although there are many forms of educational leadership in Indigenous contexts, many of them are not recognized by Western leadership norms and definitions (Brower, 2016). Besides, the definition of Indigenous leaders is often underestimated and questioned (Brower, 2016). Furthermore, insufficient research is still a current issue (Blakesley, 2008; Blakesley, 2011; Brower, 2016; Williams, 2012). More essential elements of Indigenous educational leadership need to be identified and clarified in order to supplement and enhance the definition of leadership in the current Indigenous education leadership literature.

The annual number of publications between 2000 and 2018

As shown in Figure 1, the number of publications related to Indigenous educational leadership increased between 2000 and 2018 in the four targeted countries, though there were some fluctuations. In 2000, only one article about Indigenous education leadership was published in Australia. In 2001 and 2002, there were no articles about Indigenous education leadership in the four countries. From 2003 to 2007, the annual number of publications remained the same at one per year. One article was published in New Zealand in 2003 and again in 2006. Scholars from the United States published one article in 2004 and again in 2005. In 2007, scholars from Canada began to pay attention to the field of Indigenous educational leadership. After that, the number of publications increased significantly. In 2008, there were six articles published, among which three were published in Canada and the remaining three in Australia, the United States, and New Zealand, respectively. Interestingly, 2010 had the same number of publications as 2008 with three articles from Australia, two from Canada, and one from New Zealand. In 2011, the number of publications decreased to two articles published in Canada and Australia, respectively. The number of articles then went up
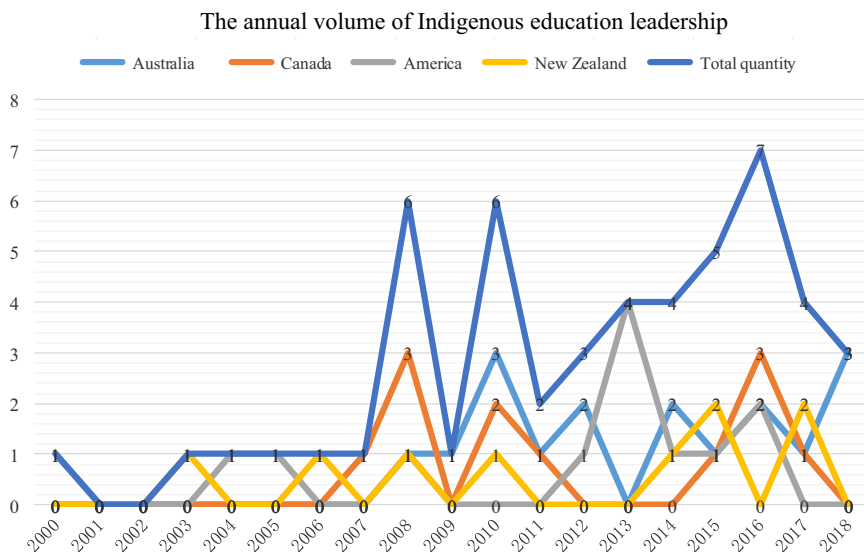
The annual volume of Indigenous education leadership

steadily from 2011 to 2016 in all four countries, reaching a high point in 2016. After 2016, the number of publications started to decline gradually across the board. Despite this recent declining trend, in general, the number of publications related to Indigenous education leadership has increased since 2000, reflecting the fact that this topic has been attracting more and more scholarly attention.

The distribution of the articles across the four countries
Figure 2 portrays a bi-modal distribution pattern of publication in the four targeted countries. It shows that the distribution of the number of articles on Indigenous educational leadership published between 2000 and 2018 varied among the four countries. There were 18 articles about Indigenous education leadership published in Australia during this period, accounting
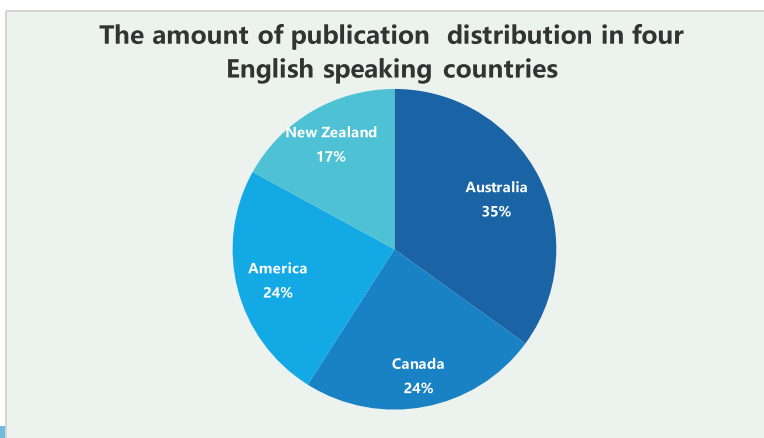
for the largest number of publications among the four countries. In contrast, Canada and the United States had the same number of publications, representing 24% of the total publications. Notably, New Zealand published the fewest articles about Indigenous education leadership among the four countries. Therefore, it can be said that the number of publications about Indigenous education leadership has been unevenly distributed among the four targeted countries. Indigenous education leadership research in Canada, the United States and New Zealand has remained in a relatively early stage of development compared to the research in Australia.

Research methods used in the body of literature on Indigenous educational leadership
In our analysis, we sought to track the research methods utilized by scholars within this corpus. Summary statistics revealed that 11 types of research methods were used.

Table 1 shows that scholars had an overall preference for using a commentary method (Andersen, 2018; Barnhardt, 2008; Brower, 2016; Faircloth and Tippeconnic, 2013; Fredericks *et al.*, 2014; Farmer, 2008; Fitzgerald, 2010; Huggins, 2004; Judy and Arrows, 2005; Keddie and Niesche, 2012) to study Indigenous education leadership.

Interviews were used frequently as well (Berryman *et al.*, 2017; Bird *et al.*, 2013; D'Arbon *et al.*, 2009; Fitzgerald, 2006; Henderson *et al.*, 2015; Jeannie, 2012; Jorgensen and Niesche, 2010; Niesche and Keddie, 2014). It should be noted that some other research methods, such as qualitative methods, ethnography, mixed methods and case studies, included interviews. Therefore, interviews have been crucial in the process of studying Indigenous education leadership. This is because interviews use a person's story as an insightful tool to expand the understanding of a phenomenon (in this case, Indigenous education leadership). It is also an approach that can clarify and convey the knowledge, experience, and insight obtained during a wide range of careers, which can be helpful when studying Indigenous education leadership (Blakesley, 2010).

In addition, a great number of scholars have employed a qualitative method to conduct research on Indigenous education leadership (Cherubini and Volante, 2010; Ford *et al.*, 2018; Lickers, 2016; Santamaría *et al.*, 2015; Williams, 2012). Ethnography (Blakesley, 2011; Jorgensen, 2016; Rhea, 2015; White, 2010) and case studies (Donald *et al.*, 2013; Niesche and Keddie, 2014; Preston *et al.*, 2016; Santamaría *et al.*, 2014) were used by the same number of scholars, each group representing eight percent of the publications. What is more, mixed methods were selected by certain scholars (Hynds *et al.*, 2015; Riley and Webster, 2016; Walsh *et al.*, 2018) whose research was included in this corpus.

In addition to the above methodologies, Blakesley (2010) and Kamara (2017) adopted narratives and biographies as research methods. Blakesley (2010) claimed that these methods

Research methods	No. of articles
Commentary	21 (41%)
Interview	7 (13%)
Qualitative	5 (10%)
Ethnography	4 (8%)
Case study	4 (8%)
Mixed methods	3 (6%)
Narratives and biographies	2 (4%)
A best evidence synthesis iteration	2 (4%)
Comparison	1 (2%)
Portraiture	1 (2%)
Interpretive and experiential methods	1 (2%)

Table 1.
Research methods used in the literature of the four targeted countries

were beneficial for elucidating the concept of Indigenous educational leadership. Additionally, some scholars have held that Best Evidence Synthesis Iteration (BES), with its attention to theoretical diversity and the need for diverse and multiple audiences, is the proper method for studying Mäori educational leadership (Hohepa, 2013; Hohepa and Robinson, 2008). Furthermore, comparison (Olsen and Andreassen, 2017), portraiture (Hardisonstevens, 2014), and interpretive and experiential methods (Wimmer, 2016) made up similar proportions of the publications about Indigenous education leadership.

These findings suggest that more quantitative research about Indigenous education leadership would be important for facilitating the development of this research field. Additionally, more research using Indigenous research methods would contribute to the development of invaluable knowledge about this topic.

Focal topics of research on Indigenous education leadership in the four targeted countries.
This review of the literature on Indigenous education leadership published in Canada, the United States, Australia and New Zealand revealed that topical trends varied with the evolution of this field. The topics in the body of literature covered by this review were classified into eight categories as illustrated in Table 2. Each of these topics will be discussed in more detail below.

Indigenous women's educational leadership
Between 2000 and 2018, many scholars explored how women experience Indigenous educational leadership (Fitzgerald, 2003, 2006, 2010; Ford *et al.*, 2018; Huggins, 2004; Judy and Arrows, 2005; Kamara, 2017; White, 2010). Among these publications, scholars from Australia (Ford *et al.*, 2018; Huggins, 2004; Kamara, 2017; White, 2010) showed the greatest interest in Indigenous women's educational leadership; publications on this topic were rare in the United States (Judy and Arrows, 2005) and Canada. These regional differences may exist due to localized social and educational reasons or demand.

In New Zealand, Fitzgerald released several papers that concentrated on this topic (Fitzgerald, 2003, 2006, 2010). Fitzgerald (2003) emphasized the importance of studying Indigenous women's educational leadership, and the necessity of using research-based Indigenous and non-Western educational leadership theories to explain the leadership of Indigenous women (Fitzgerald, 2003). Fitzgerald (2003) asserted that men and women all played a vital role in the collective identity in traditional Maori society, and the group's survival depended on its collective responsibility. In other words, the group needed to attach importance to and esteem each person's skills, advantages and attributes. Therefore, establishing the concepts of leadership and management in an Indigenous context without regard to gender and ethnicity is out of the question (Fitzgerald, 2003, 2006; Judy and Arrows, 2005).

Some scholars have focused on studying the experiences and voices of Indigenous women leaders (Fitzgerald, 2006, 2010; Kamara, 2017). In the higher education context, Ford *et al.*

Topic	No. of articles
Indigenous leadership in educational development	17.6% (9)
Indigenous women's educational leadership	15.7% (8)
Indigenous education leadership development	15.7% (8)
Indigenous principals' perspectives on leadership development	13.7% (7)
Indigenous youth leadership development	11.8% (6)
Indigenous community leadership	11.8% (6)
Indigenous curriculum leadership	7.8% (4)
Other topics related to Indigenous leadership	5.9% (3)

Table 2.
Number of
publications by topic,
2000–2018

(2018) studied Indigenous women's educational leadership in the higher education sector in Australia, contributing background information and definitions to the exploration of Indigenous women's leadership.

The research described has suggested that Indigenous women leaders hold crucial positions in an Indigenous context, and research in this area should be taken seriously.

In addition, some scholars have pointed out the challenges that Indigenous women have to face (Fitzgerald, 2006, 2010; Huggins, 2004; Kamara, 2017; White, 2010). Fitzgerald (2006) was the first scholar to discuss Indigenous women's challenge of "walking between two worlds." Fitzgerald (2010) also described a similar plight of "double identity" in a study of Indigenous women leaders in New Zealand, Canada and Australia, and summarized the challenge of knocking back the hegemony of current research and theory that does not consider or recognize Indigenous people's perceptions, actions, and leadership styles. This line of study has suggested that there may be unique ways to facilitate Indigenous women's leadership.

Huggins (2004) also claimed that the greatest leadership challenge for Indigenous women was that they are judged by different criteria than other leaders; racism and sexism are the core challenges they face (Huggins, 2004; White, 2010). Therefore, researchers have concluded that conducting research from a critical theory perspective would benefit the field.

Furthermore, Kamara (2017) studied the daily complex roles required of female Indigenous principals in communities that are grounded in broader Indigenous epistemologies, beliefs, and value systems. These principals strive to be fully embraced by mainstream educational leadership perspectives, but research on the roles of Indigenous woman leaders in practice is almost non-existent.

Similarly, although many scholars have studied the challenges in Indigenous women's educational leadership, research on how to overcome these challenges from the perspectives of Indigenous women leaders is missing. Thus, some scholars have pointed out the limited attention paid to the topic of Indigenous women's educational leadership (D'Arbon et al., 2009; Fitzgerald, 2003; Kamara, 2017; White, 2010). It is the responsibility of future scholars to fill these research gaps left by previous researchers; these blank pages will furnish future scholars with a research orientation in this field.

Indigenous leadership in educational development
Indigenous leadership in educational development has been one of the important research focuses of scholars in the four targeted countries (Blakesley, 2010; Brower, 2016; Faircloth and Tippeconnic, 2013; Hohepa, 2013; Hohepa and Robinson, 2008; Jeannie, 2012; King, 2008; Wimmer, 2016). Scholars from Canada and the United States had the largest number of publications on this topic. By contrast, these publications were relatively scarce in Australia (Jeannie, 2012) and New Zealand (Hohepa and Robinson, 2008).

A large number of scholars in this area have researched Indigenous leadership in educational development in terms of cultivating the future generation of Indigenous leaders (Brower, 2016; Faircloth and Tippeconnic, 2013; Hohepa and Robinson, 2008; Hohepa, 2013). For instance, Faircloth and Tippeconnic (2013) argued that Indigenous people can learn from each other and transform an educational system that was culturally adapted, assimilated, segregated and colonized into an educational system with the cultural and linguistic diversity of Indigenous students, their families and their communities. Their study provided theoretical views on cultivating future Indigenous leaders, but empirical study is needed.

In addition, Hohepa and Robinson (2008) asserted that school leadership is closely connected with student achievement, and pointed out that cultural and ethnic factors that are efficient in increasing the learning outcomes of different students (in this study, students in a Māori context) must be included in leadership dimensions. This implies that understanding Indigenous culture and using Indigenous cultural values can be an effective way for leaders

to nurture the next Indigenous generation. Furthermore, Hohepa (2013) stated that educational leadership and changes to the school system are needed to guide the next generation of Indigenous leaders. Indigenous educational leadership needs to be taken into account in the process of boosting education for Indigenous students (Brower, 2016; Hohepa, 2013), since Indigenous educational leadership plays a vital role in improving student results, especially those of minorities and Indigenous students (Hohepa and Robinson, 2008; Hohepa, 2013). Scholars in this line of study believe that fostering leadership skills is an important way to nurture the next generation. However, further studies are required to identify the effective paths for facilitating the development of Indigenous student leadership.

Researchers have also explored other aspects of Indigenous leadership in educational development, such as the impact of Indigenous communities on leadership development and the possibility of integrating Indigenous and Western leadership theories. Blakesley (2010) ascertained the strong and transformative impact of an Indigenous environment on non-local principals' educational leadership practices. King (2008) explored the basic differences between traditional Indigenous leadership and Western leadership through integrating a number of theories about Indigenous education leadership. These works have shed light on possible avenues for further exploration of what constitutes Indigenous education and the huge influence of mainstream culture on it. In addition, improving the Indigenous student enrolment and success rate is another research focus in the field of Indigenous leadership in educational development (King, 2008), but more empirical data is required on this topic. A number of scholars have called for further research in this regard, and further empirical study will open up new avenues for yet more exploration.

Indigenous education leadership development
Indigenous education leadership development has been a crucial focus of Indigenous education leadership research (Andersen, 2018; Berryman et al., 2017; Blakesley, 2008; Purdie and Wilkinson, 2008; Rhea, 2015; Santamaría et al., 2014; Waite, 2017). Australian scholars have shown a particular preference for this topic (Andersen, 2018; Purdie and Wilkinson, 2008; Rhea, 2015). Interestingly, in the literature examined in this review, there were the same number of articles related to Indigenous education leadership development from Canada and New Zealand, while this topic has been under-researched in the United States.

Various perspectives have been adopted in this field of study. First, the importance of studying this topic has been emphasized by some scholars (Berryman et al., 2017; Purdie and Wilkinson, 2008; Santamaría et al., 2014). Second, a number of scholars have put forward some suggestions for furthering the development of Indigenous education leadership (Andersen, 2018; Berryman et al., 2017; Santamaría et al., 2014). Andersen (2018) believes that the development of culturally inclusive courses and learning environments is essential for all students in university. She has come up with several key strategies and recommendations for successful recruitment and retention of local professionals. Also, some scholars have argued that it is necessary to propose an effective leadership model for all members of a school community, especially those who historically have been marginalized, because this model can help Indigenous students achieve their true potential (Berryman et al., 2017). Nevertheless, more empirical data is needed to understand the effectiveness of such a model and, more importantly, the effectiveness of these strategies needs to be further explored.

Further to the above, Santamaría et al. (2014) also provided guidelines and emerging models for other aspiring and practicing leaders and scholars in New Zealand, the United States, and similar countries to achieve the goal of transformation in the Indigenous environment. However, the cultural sensitivity of this model needs to be further understood. Rhea (2015) expressed similar views to those of Santamaria et al. (2014), but, again, the appropriateness of the training method she suggested requires further investigation. In this

line of research, the challenges of setting effective leadership standards also still need further research (Purdie and Wilkinson, 2008; Waite, 2017).

Indigenous youth leadership development
Across the four targeted countries, Indigenous youth leadership development research has received varying levels of attention. For instance, in Canada, Indigenous youth leadership development has been a favorite topic. Likewise, this subject has sparked interest from Australian scholars too. However, scholars in the United States and New Zealand have paid little attention to Indigenous youth leadership development. Generally speaking, this topic has involved diverse research focuses including the importance of cultivating Indigenous youth leaders, the challenges facing Indigenous youth, and strategies for the development of Indigenous youth leadership.

The importance of cultivating Indigenous youth leaders has been discussed by certain scholars (Lickers, 2016; Wihak *et al.*, 2007). Lickers (2016) claimed that Indigenous peoples around the world will face the challenge of leadership gaps (partly due to demographic changes) in the near future. Therefore, it is imperative that research on the development of Indigenous youth leadership should be further conducted for encouraging and preparing Indigenous youth who wish to assume leadership roles (Lickers, 2016). However, the research thus far has not provided enough evidence about how to prepare Indigenous youth effectively for leadership.

In addition, some scholars have highlighted the challenges faced by Indigenous youth around the world (Lickers, 2016): first, Indigenous youth leadership has been overlooked for a long time (Lickers, 2016), so there has been no way to understand what role Indigenous youth need to play in leadership; second, Indigenous youth leaders have had to face the problems of the disappearance of their language and the erosion of their cultural identity and values (Lickers, 2016).

As for the development of Indigenous youth leadership, Lickers (2016) investigated the knowledge and experiences of Indigenous youth leaders and gave some suggestions for Indigenous youth leadership development. These suggestions included the development of youth leaders' centers and extra education for potential Indigenous youth leaders about past and present Indigenous leaders' knowledge, their inclinations to become leaders, and the practical methods through which they acquired their knowledge.

Moreover, Walsh *et al.* (2018) examined students' voices and leadership through assessing a successful Indigenous leadership program in Australia. They held the opinion that students' voices and leadership may have a special potential to change the educational experience and outcomes of young Indigenous Australians. Furthermore, their work proposed possible ways to provide new opportunities for schools to enhance students' voices and educational participation by strengthening identity, connecting with the community, and building a flexible leadership (Walsh *et al.*, 2018).

Wihak *et al.* (2007) argued that it is necessary and wise to build up a network and a sense of culture that can facilitate Indigenous student leadership development, particularly in small and isolated communities. Williams (2012) also stressed the role of community and cultural values. In particular, from Williams' perspective, the tribe plays an important role in the development of Indigenous student leadership. Also, the role of institutions cannot be neglected. It would be meaningful to explore further the process through which tribes and institutions contribute to the development of Indigenous student leadership.

Indigenous principals' perspectives on leadership development
The analysis of the data in this review showed that the United States, Australia and Canada had the same number of publications about Indigenous principals' perspectives on leadership development. However, New Zealand published limited research in this regard.

To begin with, Blakesley (2011), in his paper, presented research on the issue of which school principal actions can be considered leadership in an Indigenous education context. Blakesley concluded that Yukon principals defined educational leadership in managerial and administrative ways. One of the strengths of this research is that it demonstrated how non-Indigenous principals worked in an Indigenous environment. Since there have been few studies devoted to non-Indigenous education leaders working in Indigenous environments, this research contributed a seldom-seen perspective to the existing educational leadership literature.

Additionally, there have been a host of scholars studying the challenges that Indigenous principals face (Cherubini and Volante, 2010; Henderson *et al.*, 2015). Cherubini and Volante (2010) examined how the traditional roles of principals are paradoxically challenged when Indigenous people take on this job. Their work provided useful lessons for principals about completely fulfilling the role of leader. Henderson *et al.* (2015) also studied the challenges faced by American Indian K-12 school leaders. Most importantly, this study highlighted how leaders can reconcile cultural conflicts with racism through identity, relationships and reputation.

Donald *et al.* (2013) explored the leadership development of Indigenous principals. They pointed out some obvious relationships between the practices of Indigenous principals in Australia and Canada, due to the similarities between the history and Indigenous education practices in these two countries; this study highlighted the need for leaders to develop intercultural spaces and skills. However, this line of inquiry needs more empirical studies on the effects of principal perception of leadership development.

Of particular note, some scholars have investigated the leadership of Indigenous principals through the lens of moral leadership. Niesche and Keddie, 2014 studied the pressures and complexities faced by principals in striving for equality and improving the social and educational outcomes of their Indigenous students through case studies. In the previous literature, few scholars had adopted case studies of Indigenous school principals' actual work to explore the complexity of school leadership and the importance of the school environment, nor had there been a rigorous and theoretical analysis of these Indigenous principals' practices. This article filled that gap and provided an important reference for future research in this field.

Indigenous community leadership

In this review, the research about Indigenous community leadership was mainly done by scholars from the United States, Australia and Canada. Scholars from New Zealand did not focus on this topic. From the perspective of Indigenous people, there is no doubt that leadership is present in Indigenous communities (Blakesley, 2010; Bird *et al.*, 2013; D'Arbon *et al.*, 2009). Indigenous community leaders emerge from within the community, since community is the medium for Indigenous communal education (Cajete *et al.*, 2016). In addition, community forms of education and traditional Indigenous leadership have been inextricably intertwined and sustained in mutually beneficial relationships (Cajete *et al.*, 2016; Marker, 2015; Riley and Webster, 2016), and Indigenous forms of education have provided the foundation for dynamic and multi-contextual processes of community leader development. For example, some scholars have indicated that the community context of education, affiliation and affection have influenced the development of American Indian leaders (Bird *et al.*, 2013; Cajete *et al.*, 2016).

Community leadership is also a personal spiritual development process affected by context. Indigenous leadership comes into being when it is manifested in personal and community life. Therefore, there is a close connection between community leadership and Indigenous leadership (Cajete *et al.*, 2016). It has also been widely believed that Indigenous

education leaders will become balanced and honest members of the community and assume many cultural roles and responsibilities (D'Arbon *et al.*, 2009). Future research might focus on understanding the elements and effects of community leadership in practice based on empirical data.

Indigenous curriculum leadership
Scholars in Australia and New Zealand have shown a great preference for studying Indigenous curriculum leadership, but there have been no publications on this topic in the United States and Canada so far. To begin with, Jorgensen and Niesche (2010) recognized the importance of Indigenous curriculum leadership due to the educational underperformance of Indigenous Australians. Later, Jorgensen (2016) summarized the characteristics of curriculum leadership to consider effective leadership in remote Indigenous contexts. Additionally, some scholars have examined ways to develop Indigenous curriculum (Nakata, 2011; Olsen and Andreassen, 2017). Specifically, Nakata (2011) discussed the pathway for Indigenous education in the developing agenda of the Australian curriculum. Also, Olsen and Andreassen (2017) argued for developing a method to deal with Indigenous problems in national early childhood education curricula, especially in countries with Indigenous minorities.

Several scholars have concentrated on the challenges related to Indigenous curriculum leadership (Jorgensen and Niesche, 2010; Jorgensen, 2016; Olsen and Andreassen, 2017). Jorgensen and Niesche (2010) claimed that the principals of remote Indigenous schools face many challenges, such as the remote location of resources, a large number of teachers who are in the early stage of their careers, high mobility, complicated relationships with local communities, and vital cultural problems that need to be settled on a daily basis, which influence the ability of leaders to provide quality curriculum. In the same line, Jorgensen (2016) asserted that curriculum leaders face many challenges in terms of leadership in Indigenous contexts. For example, new leaders hope to exhibit leadership through building programs, but it may be more advisable for curriculum leaders to identify the advantages of existing programs and shape these programs in the light of sustainability and community interests. In another context, Olsen and Andreassen (2017) indicated that the primary challenge during curricular processes in New Zealand is the implementation of curriculum, since the curricula in New Zealand are strongly associated with legislation. However, other challenges such as white-streaming, mainstreaming and power dynamics that exist in curricula and the general educational environment cannot be ignored (Olsen and Andreassen, 2017). Identifying the challenges that curriculum leaders face in practice is of importance, but it is imperative that more research should be conducted to resolve these challenges.

Other topics of study related to indigenous education leadership
In addition to the more commonly researched topics detailed above, some scholars have selected other aspects of Indigenous education leadership to study. For example, Farmer (2008) connected Indigenous education leadership with cognitive disequilibrium. He considered that cognitive disequilibrium not only helps leadership students to examine their Indigenous perceptions of leadership behaviors, but also promotes the transition from an Indigenous leadership perspective to a pluralistic democratic leadership perspective, which is a vital responsibility in the preparation of democratic education leaders. In addition, some scholars have deemed that effective and culturally responsive school leadership has an impact on the educational success of Maori people (Santamaría *et al.*, 2015). Finally, Hynds *et al.* (2015) conducted research through the lens of culturally responsive school leadership, and indicated that the development of such leadership plays a significant role in the educational success of Maori students (Hynds *et al.*, 2015; Santamaría *et al.*, 2015).

Limitations
This review focused on delineating the formal outlines of the knowledge base about Indigenous education leadership in four English-speaking countries from 2000 to 2018 rather than on characterizing the findings of the primary studies. In addition, we consciously restricted our review of the literature on Indigenous education leadership to a particular set of international journals. Therefore, the patterns of knowledge about Indigenous leadership within this body of literature might show some disparities. More importantly, the findings were demarcated by our definition of the regional knowledge base as illustrated by the selected international refereed journals in the four targeted countries. Thus, it should be accentuated that this study only examined a certain proportion of the actual regional knowledge base.

Conclusions
Through reviewing and studying the literature on Indigenous education leadership in Canada, the United States, Australia, and New Zealand from 2000 until 2018, we discovered some findings, which are listed here.

Although many scholars have explored definitions of Indigenous education leadership, no one specific definition has yet been agreed upon. This is mainly because the definitions of Indigenous education leadership are affected by many factors, such as Indigenous culture, traditional values and beliefs, knowledge, and resources. In addition, the definitions of Indigenous education leaders are often related to certain values within an Indigenous community; therefore, it is difficult to define these terms. Finally, few scholars have tried to define these terms, so the relevant literature is relatively small.

Next, the research works covered by this review identified knowledge production about Indigenous education leadership in the United States, Canada, Australia and New Zealand and illustrated the uneven distribution of relevant research between these four countries. The international publications related to Indigenous education leadership in Australia made up the greatest proportion of the reviewed studies. This may be due to the fact that Australia's current Indigenous education situation is affected by its colonial history, racism and discriminatory policies, and the fact that its school system fails to meet the needs of Australian Indigenous students, leading to their poor performance. Therefore, Australian scholars have resorted to studying Indigenous education leadership to solve these problems. On the other hand, the volume of articles about Indigenous education leadership in New Zealand is relatively small. Overall, Indigenous education leadership in general is a slowly emerging field of study, yet there have been many articles written by scholars that contain implications related to this field.

The changes in the number of publications over the past 18 years reflect the research trends reported in the literature. Regional academic researchers from Canada, the United States and New Zealand have been facing pressure to increase their publications about Indigenous education leadership in international refereed journals. Hopefully, the findings of this review can help to inform strategic efforts to accelerate knowledge production about Indigenous education leadership in the future.

In terms of the specific topic focuses within the field of Indigenous education leadership, although scholars from the four targeted countries displayed various interests, the topic of Indigenous leadership in education development was explored by scholars from all four countries. Apart from this similarity, each country varied in its research orientations. In Australia, Indigenous women's educational leadership, Indigenous education leadership development, Indigenous youth leadership development, and Indigenous curriculum leadership were given the most attention by scholars. In Canada, there were no publications on Indigenous women's educational leadership or Indigenous curriculum

leadership. In the United States, there were no publications involving Indigenous education leadership development or Indigenous curriculum leadership. In New Zealand, research on Indigenous youth leadership development, Indigenous principals' perspectives on leadership development, and Indigenous community leadership was rare. The reasons for these variations should be topics for future study.

The above conclusions depict the current research situation for Indigenous education leadership in the four targeted countries and bring to light some research deficiencies in this field. For example, most of the studies in this review were undertaken from a single perspective. Most of the existing research has focused on a certain type of group, which has resulted in a lack of comparison between groups and a lack of systematic investigation of Indigenous education leadership as a whole. There has been little comparative research, especially comparative research between countries. In the end, these four countries have had different research focuses in the field of Indigenous education leadership under the influence of their varying Indigenous histories, cultures, and many other factors. These differences can provide fertile ground for future researchers in the field of comparative education.

In fact, these varying research focuses between countries highlight another finding of this review: Indigenous education leadership is a very complex problem, because it is affected by various factors, such as Indigenous culture, traditional values and beliefs, colonial history, knowledge, and resources. The existing literature on Indigenous education leadership, although it has covered many topics, still has many weaknesses. First, the exploration of the definitions of Indigenous education leadership in the four countries has been relatively insufficient. Therefore, future researchers in the field of comparative education could further explore and clarify the concept of Indigenous education leadership. Second, and again in the field of comparative education, future researchers could compare the Indigenous education leadership of different Indigenous regions or even different ethnic groups, so as to form a systematic theoretical framework of Indigenous education leadership. Finally, in terms of research methods and research topics, because the current research on Indigenous education leadership has mostly been limited to commentary and self-reported interviews, there have been few comparative studies. This review showed that the research on Indigenous education leadership is still essentially at the stage of ideological research and exploration, lacking theoretical ideas. Therefore, more relevant research is needed to support this type of leadership.

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Corresponding author
Peng Liu can be contacted at: peng.liu@umanitoba.ca