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Indigenizing Education

Discussions and Case Studies from Australia and Canada

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Editing a collection of chapters from across the globe is a time-consuming and time-zone challenging project. We would like to thank the support of family, community, and colleagues for supporting us as Editors through this almost two-year journey. We also would like to thank Nick Melchoir and the team of Indigenous academic reviewers for their invaluable insights into ways to strengthen this collaborative contribution to our field. Alison also would like to particularly acknowledge and dedicate this book to Elizabeth Cooper, John Gillhespy, Carolyn Rosenberg, and Poppi Sammel.

Foreword

Approaching the Indigenizing education through the collaborative efforts of Australian and Canadian authors is both apt and imperative. During the 1970s and 1980s, I served as a member of Australia's National Aboriginal Education Committee (NAEC). We reviewed the Canadian Indigenous student support initiatives and Indigenous studies in consultation with First Nations educators, bringing many ideas back to enhance the Australian higher education system. We spent a lot of time discussing ways to support the introduction of Indigenous studies by First Peoples in university curricula and what was essential to support Indigenous students in their studies.

As a group, the National Aboriginal Education Committee members studied the works of Paulo Freire, Brazilian educator and philosopher, as we tried to improve our own situation. Freire argued that Indigenous peoples were marginalized from the dominant society in which they lived, were submerged in a culture of silence of the dispossessed, and that a dependent society is a silent society with no authentic voice. Only when the oppressed break out of the culture of silence and win the right to speak do they refuse to be dominated or oppressed and become persons in their own right. Freire's (2000) work was very instrumental for Aborigines and Torres Strait Islanders who also had no say in government policies of protection, segregation, and assimilation.

A central message of this book is that Indigenizing education means incorporating knowledges and perspectives that honour and respect First Peoples into teaching and learning activities wherever these activities occur. I really endorse that. In my many years as an educator, I found that teaching and learning have not honoured or offered respect to First Peoples. Colonialism in education was rife. To be considered 'educated', you had to be educated 'the White way'. Nobody took any notice of Indigenous ways of learning. In the early days, my goodness, we had to struggle, had to argue with politicians and university councils: gosh, we were brave!

The NAEC was mainly concerned with education per se. In those days, most Indigenous children were not finishing school or starting high school. Their parents could not help them with lessons because they had little or no schooling themselves.

There was no communication between families and schools. Only a few Aboriginal and Torres Strait Islander students went to 'White' schools: they attended Aboriginal schools instead. I was lucky to be educated at a 'White' school because the little country town I lived in did not have an Aboriginal school. My mother did everyone's washing and ironing. If they had not let me attend school, my mother would not have done their washing and ironing, or scrubbed and polished their floors on her hands and knees (c.f. Duncan, 2014a, b). There were no washing machines, vacuum cleaners, or labour-saving devices then.

The support structures in today's schools exist because we lobbied on behalf of Indigenous students. We got Aboriginal teacher aides into schools. Now schools have teacher aides for everyone. We set up women's refugees and study allowances, and they copied us. I remember being abused by White parents about Abstudy. They complained: 'our children are just as badly off, our country kids don't get anything'. And I said, 'well, why don't you do as we did? You've got to lobby!' You have to lobby the government, it was not handed to us on a plate. Austudy is now available for all low-income students.

This book offers important insights into two contemporary problems, firstly 'me-ism'—our individualistic society—and, secondly, climate change. In Indigenous society, you must listen. If you do not listen, you will be in big trouble; you will not be able to manage. You have to listen to survive. As 'me-ism' spreads, people tune out the land and those around them—nobody listens anymore. During my childhood, we listened to the old people and we paid attention. We lived on acreage with my aunt and her White husband and my great grandfather lived in a little hut on the land nearby. He was a good man. We were all in awe of him, my uncles and cousins: we always listened respectfully. He was a very wise man. I am heartened to see various chapters directly respecting the environment. Ignoring or denying climate change reveals how we are losing our connectedness to nature and to each other. The frequency and intensity of bushfires play on my mind. Aboriginal people manage the environment through fire stick farming—society can learn so much from the way Aboriginal people manage the land.

I want to finish this Foreword with a quote from Roger Keesing, who taught me as an undergraduate anthropology student at Australian National University. He later moved to McGill University in Canada, which I think has a lovely synchronicity for this book. His quote highlights the interconnectedness of spirituality, nature, and wisdom and shows how Indigenous peoples already have a deep, refined knowledge of these issues:

> The religions of (First Peoples) usefully remind us that…they develop(ed) philosophies to situate them within the processes and forces of nature, not on top of them. Such philosophies can well serve as sources of wisdom at a time when our efforts to control and dominate nature have placed our environment, and our entire planet, gravely at risk. (Keesing, 1981)

There is an urgency for non-Indigenous people to become aware of their *lack of* connection to the environment and to consider what they should do about it. Educators can draw upon the many insightful projects included in this book both as a beginner's starting point for Indigenizing education practices and as inspiration for experienced educators to keep going. It is an important breakthrough.

Bribie Island, Australia Dr. Pearl Duncan

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Preface

Indigenizing education is fundamentally premised as the need to embed Indigenous worldviews and perspectives within education. It is endorsed by the United Nations around human and children's rights (UN, 1989) and Indigenous people's rights (Ma Rhea & Anderson, 2011; UN, 2007). Contemporarily, many successive commissions and policies advocate for Indigenous recognition, reconciliation, and self-determination within the constitutions, policies, and infrastructures of Western countries (c.f. Maddison, 2016; Recognise; Reconciliation Canada). This recognition for self-determination has resulted in calls for increased public awareness and education around the respectful embedding of Indigenous worldviews and perspectives in education. In Australia, embedding Aboriginal and Torres Strait Islander perspectives is a key policy directive at national and state levels (ACARA, n.d.; EATSIPS, 2011; DEET, 1993). Schools are asked to 'broaden their understanding of Aboriginal and Torres Strait Islander perspectives through implementing a whole-school strategy in a way that reflects on the past, responds to the present and creates systemic change for the future' (EATSIPS, 2011, p. 7). Teachers are asked to build relationships between Indigenous knowledge systems (IKS[1]) and Western knowledge systems (WKS[2]). There are similar requests in Canada, with The Truth and Reconciliation Commission outlining 94 'Calls to Action' to advance the process of Canadian reconciliation (Truth and Reconciliation, 2015). This landmark report includes several 'Calls to Action' related to education that recommend integrating Indigenous knowledge and teaching methods into classrooms. With the aim of establishing and maintaining mutually respectful relationships between Indigenous Peoples in Canada and non-Indigenous Peoples, the Truth and Reconciliation Commission advocates for

[1]This book will use the term Indigenous Knowledge Systems (IKS) to acknowledge there are as many knowledge bases as there are Indigenous peoples. This plurality recognizes and values the many philosophies, forms, and types of Indigenous knowledges globally.

[2]Western knowledge systems (WKS) will be used to differentiate from IKS—to generally refer to non-Indigenous knowledge production. The use of both terms is not intended to be polemic—we acknowledge the position of Nakata (2007) that these knowledge systems sometimes converge.

the rewriting of school curriculum to educate all Canadians about what happened to Indigenous Peoples in Canada. This enhancement to the curriculum has led to multiple calls for education policy to shift the educational terrain from Eurocentric perspectives towards one that is inclusive of Indigenous cultures, experiences, and perspectives. Moreover, the People for Education (2016) endorse this shift and state that 'all students will benefit from a deeper understanding of Canada's history of colonization and its influence on current relationships between Indigenous and non-Indigenous people' (p. 1). In policy, it appears there is a strong commitment to improving Indigenous education for all students in both Australia and Canada. However, Whitinui et al., (2018) advise that Pacific Rim countries often share similar experiences of poor educational outcomes for Indigenous Peoples and a lack of inclusion of Indigenous content, perspectives, languages, and pedagogies in their education systems, meaning that there is a disparity between policy intent and curriculum enactment.

Despite the history of policy supporting the Indigenization of education, implementation and practice have not lived up to this rhetoric (Milne, 2017; Rowe & Tuck, 2017; Whitinui et al., 2018). There are many reasons why Indigenizing education has not occurred including powerful colonial legacies and infrastructures; vested interest convergence; divergence in educational agendas; enculturated hidden curricula; and the teachers' lack of confidence embedding IKS (McLaughlin & Whatman, 2015). The majority of people employed in national education systems in Western countries do not identify as Indigenous (Howard, 1999; Milne, 2017; Whitinui et al., 2018). Non-Indigenous educators have been found to be reluctant to engage with IKS in their teaching practice (Milne, 2017) and to lack a recognition of its importance (McLaughlin & Whatman, 2015). Much of the inertia around Indigenizing education can be explained through personal beliefs including the belief that it is not a non-Indigenous educator's place to act in this space, or a fear of 'not doing it correctly' (McLaughlin & Whatman, 2015; Nakata, 2011).

Non-engagement with Indigenous worldviews and perspectives in the curriculum reinforces WKS and diminishes calls for self-determination by holding onto colonial practices (Pinto & Blue, 2016). Through Indigenizing education, an understanding how power and control relations manifest within education is revealed. By embedding Indigenous knowledge and perspectives, a clearer vision and pathway for changing practices in the classroom are enabled for the benefit of all learners.

Reconciliation has been linked to a call for education to decolonize itself. This demands new understandings of the history of colonialism (Battiste, 2017) and new ways of thinking about learning and teaching practices (Whitinui et al., 2018). These requests for understanding colonialism may be challenging for some practising educators. Access to professional development to unpack colonial ideological worldviews, stereotypes and the attitudes that inhibit culturally responsive practices may be beneficial, alongside understanding how other educators have Indigenized their educational practices. This book offers insights into educators who are

reconsidering their educational philosophies and practices and are seeking guidance on Indigenizing education. It requires a transformation of pedagogies and practices whereby societies need to 'build educational opportunities' (Whitinui et al., 2018, ix) with multiple sites for engagement, and where the

> struggle for transformation is not a singular struggle. That is, there are multiple sites of learning and teaching that need to be engaged and changed (often simultaneously). Seemingly, the struggle to improve Indigenous education outcomes requires critical reflection and transformation in many different areas across the education and schooling system. (p. ix)

This book offers educators such an educational opportunity to work towards meaningfully and critically understanding the terrain associated with Indigenizing practice. For educators who would like to Indigenize their practices, but are unsure of how to proceed, this book can be used as a guide. Showcased in this book are examples from Australia and Canada on how educators (Indigenous and non-Indigenous) have Indigenized their educational practices. Australia and Canada were chosen to be the focus of this book for multiple reasons. First, the co-authors are either Australian, Canadian, or dual citizens with vast experience in learning, teaching, and researching in this field in both countries. Second, both Australia and Canada are former British colonies, spread across large continents, with similar systems of government, economic investment and trade, investment in science and technology and educational systems. And more importantly, aligning with the focus of this book, both countries have similar histories of settler colonialism that still exert influences on education systems. Although there are similarities in how both countries understand and speak back to settler colonialism, there are also unique and different theoretical and practical perspectives that offer insights into what it means to embed Indigenous knowledge systems on different traditional lands. By identifying these different perspectives, this book explores the synergies involved in embedding IKS in teaching and learning endeavours.

Each chapter's author specifically takes time to introduce and scaffold the conversations and processes of Indigenizing educational practice. As such, this book offers an easy to read approach that defines key terms, attempts to help the reader makes sense of underlying theory as well as offering practical case studies of what it means to Indigenize education. The case studies in this book reveal how transformation and knowledge building can begin to redefine an educational system able to support a reconciliation agenda.

We recognize that educators work across many settings, whether within schools or institutes of higher learning, or in community organizations and workplaces. This book acknowledges and focuses on that fact that all educators (in both formal schooling and non-formal settings) in Australia and Canada teach on 'Country' or traditional lands. As such, this book offers an invitation to all educators to explore what it means to Indigenize education. This book seeks to engage educators, across multiple community sites where teaching and learning occur, with case studies from many different settings, to widen the invitation to join in this important dialogue

and to reflect and transform their own educational practice, wherever it occurs. The case studies demonstrate how educators understand and challenge colonial agendas in their everyday educational practice.

Gold Coast, Australia — Alison Sammel
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Introduction

To add to the rich global dialogue that is currently emerging, the first chapter of this book introduces what Indigenizing education means to five educators who currently work in school, university, and community education settings. The perspectives of these five educators Blair Stonechild, Nerida Blair, Linda Goulet, Becki Cook, and Dale Rowland were sought as they represent a combination of First Nations Australians, First Nations Canadians, elders, experienced educators, and young educators. This introductory chapter offers a glimpse into the vast array of perspectives on what it means to Indigenize education, why this is important, what inhibits this process, what role non-Indigenous educators play, and what supports educators in this endeavour. Through critical and engaged dialogue, these authors map out their theoretical and practical-based understandings and highlight ways of thinking, knowing, and doing in Australian and Canadian contexts. Ten overarching themes emerge from the perspectives of these five educators and become the pivotal points which are discussed in contextual detail in each of the following eight chapters. These themes become the thread that ties this book together.

Using accessible language, Part I of the book, via the first chapter, introduces the concepts and scaffolds knowledge to encourage meaningful understandings at every level of the educator's experience. Rather than being viewed as an endpoint, as this learning is never finished or complete, the first chapter builds the context upon which the next eight chapters offer insight into a wider, collective conversation that articulates practical ways to Indigenize educational practices. These eight chapters offer insight into how various themes generated in Chap. 1 are explored in community, school, and university settings. Each chapter mobilizes relevant practical applications, showing how educators can embed Indigenous worldviews and/or perspectives into their unique practice. These chapters draw on case studies of Indigenizing educational practice from Indigenous and non-Indigenous scholars in Australia and Canada. They all highlight inclusive approaches to teaching and learning that move beyond a competitive lens based around a dichotomy or either/or, to exploring what it means to work in relationship and to act in ways that build new pathways for perceiving, thinking, and acting.

Chapters 2 and 3 make up Part II of this book and provide case studies of Indigenizing education within communities. Chapter 2 involves a First Nations community in Canada. The author is a member of this community and was completing her doctorate in Australia. This chapter highlights how Indigenous perspectives were used to re-frame the practice of financial literacy education. This chapter shares how the practice of financial literacy education was transformed from a deficit approach (where the needs of the participants are assumed) to a praxis approach (where the needs of the participants are sought). Chapter 3 demonstrates an understanding of how Indigenous knowledge systems (IKS), also referred to in this chapter as Indigenous ways of knowing, may be both practically and theoretically included within Physical Health Education Teacher Education (PHETE) programs in Canada to attend to culturally appropriate teaching and curriculum. Through Community-Based Participatory Research (CBPR), utilizing a narrative inquiry approach, traditional Indigenous storytelling and conversations were utilized to better understand the deeply contextual nature of the Haudenosaunee community's ways of knowing and the importance of representing this knowledge in a non-generalizable fashion.

Chapters 4–6 comprise Part III of the book and offer case studies of Indigenizing education within the formal school system in Australia and Canada. Chapter 4 reveals insights into Indigenizing practices via relations within and between Australian community settings and local schools in South East Queensland. This chapter reveals how policy frameworks and school engagement strategies shaped relations between Aboriginal communities, Indigenous primary school students, and school staffs to successfully integrate local Indigenous knowledges and Western science knowledge. The chapter analyses what students and community elders perceived Indigenous knowledges in science education to mean. A narrative recount provided by the first author, who was responsible for the policy implementation in the region, illustrates what school–community relationship building can look like, how to facilitate elder agency in school decision making, and how embedding Indigenous knowledges into science education can promote moral messages about living with each other, other entities, and the natural environment. Chapter 5 discusses Reconciliation and Treaty Education in Primary Schools in Canada. It outlines the development of two community projects between Indigenous and non-Indigenous educators in response to the Calls to Action by the Truth and Reconciliation Commission. Calvin Racette, a Metis Elder from Saskatchewan, outlines how he co-developed the *Treaty4 Project* and the *Under One Sun* project. The *Under One Sun* project is a series of 54 books and Elder videos specifically developed for the primary years to embed Indigenous worldviews and focuses on a collaborative way forward. These classroom materials include a teacher's guide to assist understanding and embedding the teaching outcomes of Treaty Education agendas. Each book is designed to be used as a leveled reading strategy to improve literacy while embedding Indigenous histories, cultural competencies, and perspectives. Chapter 6 outlines a case study of how future teachers in Australia understand embedding Indigenous knowledge systems within Western science classes. This case study illustrates that, even though well

meaning, these future teachers understand embedding to imply a one-time inclusion of Indigenous acknowledgement or facts/stories in their annual program as applicable with the national curriculum. This knowledge is viewed as being accessible online and can be presented in isolation from the community or epistemologies in which the knowledge is located. Although this was a small case study, it led to the development of a framework that may help educators reflect on their own practices and understand community-based, collaborative ways forward.

The last three chapters comprise Part IV of the book and present case studies of Indigenizing education within tertiary institutions within Australia and Canada. Chapter 7 highlights a case study of Indigenization through Internationalization from University of Regina in Saskatchewan, Canada. This novel approach explored how Indigenization and Internationalization agendas and practices were intertwined, illustrating common ground that led to a deeper recognition of asymmetrical relationships within settler colonial infrastructure. By combining these intentions, this approach provided context-specific theoretical and practical perspectives that made visible settler colonial agendas. Chapter 8 outlines a case study of Indigenizing practice within initial teacher education in one Australian university. This chapter speaks to a model for supporting the ongoing process of embedding Indigenous knowledges in teaching practice. The model describes the relationships and interactions between four contexts including policy governance in teacher professional standards, teacher education, school and community curriculum arrangements, and teaching practicum experiences. This chapter unpacks these contexts to assist educators to recognize when and how they need to change their practices, where to seek help, and how to affirm the efficacy and ethical relatedness of their approaches. Chapter 9 describes Dr. Kerry Bodle's experience developing a First Peoples curricula in a third-year undergraduate business course at an Australian university. The focus of the chapter is a course titled 'Engaging with First Peoples in Business Communities', to demonstrate how it came to be created, how it was developed and implemented, illustrating what is required to embed First Peoples' perspectives into an existing curriculum.

The final chapter specifically explores how the ten themes that emerged from Chap. 1 have implications for the teaching and learning that occurs within our communities, schools, and universities. The complexities of these themes, and how they are interwoven throughout the previous chapters, are illustrated. Advice and recommendations are provided for how educational practices can recognize and respect the intellectual and cultural traditions of Indigenous Peoples within these two countries.

Contents

Editors and Contributors

About the Editors

Dr. Alison Sammel works at the School of Education and Professional Studies at Griffith University on the Gold Coast, Australia, in the fields of Science and Sustainability education. Her research areas include the teaching, learning, and communication of science; authentically Indigenizing science education; and advancing posthumanism and ecological sustainability in science education. She is a non-Indigenous Australian/Canadian who was raised on, and now lives and works on, Yugumbeh/Kombumerri traditional lands in Australia. She spent 15 years in the Southwest region of the Anishinabek Nation in Canada (Ontario) and five years on Treaty Four lands in Canada (Saskatchewan). In 2008, she was a Smithsonian fellow in Washington, D.C., where she collaboratively investigated Indigenizing science education. Prior to her tenure at Griffith University, she was the chair of science education at the University of Regina, Saskatchewan, Canada. Here she investigated the impact of Whiteness and White privilege in formal education and how it disenfranchised First Nations students. This led to collaborative work with local First Nations communities to co-develop curricular materials that respectfully incorporated local Indigenous ideologies and perspectives in the teaching and learning of science. Her publications include three books, and many peer-reviewed papers and chapters in the field of education, plus two government reports on First Nations science education. Over the past two decades, she has presented more than 50 international conferences and received awards for her teaching. She has been the principal researcher on many successfully completed competitive grants and has supervised many graduate students.

Dr. Susan Whatman is a senior lecturer in Health and Physical Education and Sport Pedagogy at the School of Education and Professional Studies at Griffith University on the Gold Coast, Australia. She is a non-Indigenous Australian who was born and raised on Bundjalung/Minjungbal Country and now lives and works on Yugumbeh/Kombumerri traditional lands. She is currently working and

researching in curriculum development in Indigenous education, Health and Physical Education, holistic sports coaching approaches, and supporting pre-service teachers in curriculum leadership on practicum. Her own Ph.D. research was an investigation into the nature and extent of Indigenous community participation into health education decision making for Torres Strait Islander girls. Previous research includes mapping parent-school partnerships in Indigenous education and academic support systems for university students. Her research has been presented nationally and internationally since 1993, published widely in books, book chapters, journal articles, and conference papers.

Dr. Levon Blue is a Senior Lecturer and the Coordinator of the National Indigenous Research and Knowledges Network (NIRAKN) in the Cearumba Institute at the Queensland University of Technology (QUT). Levon is a co-editor of the International Journal of Critical Indigenous Studies. She is a dual citizen of Australia and Canada and is a member of Beausoleil First Nation. Levon completed her Ph.D. in 2016, exploring the financial literacy education practices of an Aboriginal community in Canada as a case study. She is a Chief Investigator on two Australian Research Council funded grants: special research initiative—National Indigenous Research and Knowledges Network (NIRAKN) and Discovery Indigenous—Empowering Indigenous businesses through improved financial and commercial literacy. She has also taught classes to undergraduate preservice teachers and research capacity building workshops to Indigenous postgraduate students. Levon has presented at many national and international conferences and has published journal articles, book chapters and conference proceedings.

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Part I
Indigenizing Education: Understanding the Importance

Chapter 1
A Dialogue Around Indigenizing Education and Emerging Themes

Nerida Blair, Blair Stonechild, Linda Goulet, Becki Cook, Dale Rowland, Alison Sammel, and Susan Whatman

Abstract To add to the rich global dialogue that is currently emerging, this chapter of this book introduces what Indigenizing education means to five educators who currently work in school, university, and community education settings. The perspectives of these five educators Blair Stonechild, Nerida Blair, Linda Goulet, Becki Cook, and Dale Rowland were sought as they represent a combination of First Nations Australians, First Nations Canadians, elders, experienced educators, and young educators. This introductory chapter offers a glimpse into the vast array of perspectives on what it means to Indigenize education, why this is important, what inhibits this process, what role non-Indigenous educators play, and what can support educators in this endeavour. Through critical and engaged dialogue, these authors map out their theoretical and practical-based understandings and highlight ways of thinking, knowing, and doing in Australian and Canadian contexts. Ten overarching themes emerge from the perspectives of these five educators and become the pivotal points which are discussed in contextual detail in each of the following eight chapters. These themes become the thread that ties this book together.

This chapter provides important definitions, theoretical understandings, and personal/political visions and standpoints of what it might mean to Indigenize education. More specifically, this chapter speaks to the practicalities of a shared vision of the authors' desired future for teaching and learning within community, schools, and universities. We hope that by describing key components of this vision, how we came to understand their necessity, and what the growing body of research in this field has to say about Indigenizing pedagogy, we can collectively envision a future

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where systems of injustice and racism are challenged within teaching and learning practices.

As educators, the authors of this chapter understand the power education has to challenge, promote, and transform social agendas. We understand how educators can enact change to move towards more socially just education practices. By revealing untruths about people, populations, and societies, educators can enable compassion and care within their classes. We also maintain that the historical and colonial foundations of educational systems function within cultural and historical contexts to shape how people think and act. Therefore, if we agree that education is the process by which society instructs its citizens in the ways, customs, and understandings that it deems are of fundamental importance, then the process of education automatically endorses and upholds the ideas and beliefs exerted by the dominant powerful group within society. This influence is referred to as hegemony, and it explains how certain values and understandings have the tendency to become part of the "commonsense" knowledge within social systems and have distorted history and cultural understandings by excluding truths. By revealing some of the truths about how privilege operates in Australian and Canadian contexts, we hope to offer those new to this field a more thorough understanding of the effects of colonialization.

Acknowledging and Understanding the Complexity of Indigenizing Education: Exploring Key Terminology

Throughout this book we will engage different terms. These terms are important as they communicate more than just words: they offer insight into a way of seeing or understanding the world through the choice of each particular word we use. Words are not objective or fixed but can be contested within the different historically located discourses that assert meaning and make common assumptions about them. As we are exposed to new ways of thinking and new ways of using words, the way we understand and use words will change. It is important, at the start of this book, to clarify what some of the key terms mean within this book, understanding that each author will present and explain nuances to the way they use these terms. Even though we do offer a glossary of words at the end of this book, we wanted to explore some key terms to ensure a consistent understanding around their meaning at the start of this book.

The term *discourse* is used to represent how language and specific meanings reflect socially constructed rules and assumptions that organize ways of thinking within a culture that create and maintain what is perceived as being "normal". A discourse allows people to categorize certain beliefs, assumptions, and statements as those that can be made, while implying others cannot. As such, a discourse shapes ways of knowing and acting that limit thinking, understanding, being, and questioning to only those inside the boundaries of that particular discourse. Discourses shape accepted notions of truth and common sense.

Hegemony refers to how the ruling power base is maintained by influencing cultural discourses such as worldviews, values, beliefs, agendas, ideas, expectations, and behaviours of society that reflect the beliefs and interests of the ruling class. Social institutions, such as schools, perpetuate the assumptions, beliefs, and values of this ruling class. The ruling class is disproportionately represented in authority positions within social institutions.

Epistemology, ontology, and *axiology* are terms that are often used when talking about knowledge but sometimes they are not accurately understood. *Epistemology* is a theory of knowledge or the ways of knowing and learning about the nature and grounds of knowledge (including its perceived limits) while *ontology* refers to a theory of being, or to the nature and assumptions of being (what does or does not belong to the category of being and why) which combine to put limits around *what* we come to know in education systems and *how* we come to know it (and from whom or what we are taught). *Ontology* is concerned with relations between beings or abstract entities, but who or what is considered a *being* from whom/what you can learn something varies considerably across non-Indigenous and Indigenous cultures. *Axiology* is a "way of doing", which should be considered alongside ontology (way of being) and epistemology (way of knowing), all three of which shape the knowledge production work that Indigenous peoples do within the academy (Moreton-Robinson, 2011, p. 413; see also Martin, 2008). Nerida Blair's explanation of Indigenous knowings (see below) perfectly illustrates this.

Researchers such as Smith (1999), Kincheloe and McLaren (2005), and Nakata (2007) have also discussed the concept of *onto-epistemology*. As Dixon and Jones (1998) argued, "any ontology is itself grounded in an epistemology about how we know *what the world is like*" (our emphasis, p. 250). Coming to know epistemology, ontology, and axiology as separate concepts, as defined above, and then the concept of *onto-epistemology* (as another strategically essentialized concept—for a political purpose) enables educators to understand why certain types of knowledges are privileged over others, with certain ways of coming to know those knowledges being judged acceptable in education systems. For example, schools privilege textbooks as authoritative sources of knowledge, without necessarily being critical of who wrote them, why were they written, whose voices are excluded, and so on. Historians regard written official records as more authoritative than oral testimony—with such records called primary sources (see Nakata, 2007). This has been one way that Indigenous peoples have been unable to have their knowledges recognized and included in education systems in the past, and many written publications "about" Indigenous peoples have been found to be incredibly racist. The key message of these concepts is that knowing, being, and doing are inextricably interrelated and coming to know, be, and do as an Indigenous person is an embodied experience (i.e. having an Indigenous body shapes the way in which you come to know, be, and do).

Indigenous knowledges then require defining, but we emphasize here that there is no single definition. Nakata (2007) makes the point that you might think Indigenous knowledges are the knowledges of Indigenous people, but that is not an accurate reflection of how the term is used in schools, higher education institutions, communities, and/or wider society. There is general agreement (see, for example, Martin,

2008) that Indigenous perspectives can only be held by Indigenous peoples—these are embodied in their experience and learning as "black bodies", but what Indigenous knowledges are, is up for much contestation. Martin (2008) argues that the knowledges of her people in the Quandamooka nation can only be held and understood by the Quandamoopah (people of that nation). She argues that she does not hold the knowledge of peoples outside her nation and does not hold specific knowledges even within her nation. This points to the idea that some people are designated as the holders or keepers of certain knowledges, while others, even though they may be members of the same nation, are not.

How are Indigenous knowledges different from Indigenous perspectives? Or First Peoples' perspectives or Aboriginal and Torres Strait Islander perspectives? Nakata (2007) believes that it is a category of knowledges that makes a political claim to exist. Nakata's theory of the cultural interface serves as a useful way to explain various understandings of what Indigenous knowledges are. He argues that *Indigenous knowledges* comprise all the knowledges, for, by, about, with Indigenous peoples, that exist in the academy. This means all the stereotyping, all the falsehoods, all the anthropological tropes, plus all of the ideas and concepts and understandings that have emerged by these knowledges. He attempts to deal with the question of whether or not non-Indigenous people can even attempt to come to know or understand Indigenous knowledges and whether they "acquire" this knowledge. Indigenous peoples know that they can educate non-Indigenous people properly but that requires strategic alliances, certain power and control relations, and conditions for learning. Whatever it is that non-Indigenous people can know and do (and be) through education by Indigenous peoples, close and consistent contact with Indigenous perspectives and Indigenous peoples' knowledges is required. This is further explored in the later section on being an ally.

Settler colonialism describes how

> settlers come with the intention of making a new home on the land, a homemaking that insists on settler sovereignty over all things in their new domain … settlers make Indigenous land their new home and source of capital … the disruption of Indigenous relationships to land represents a profound epistemic, ontological, cosmological violence. This violence is not temporally contained in the arrival of the settler but is reasserted each day of occupation. In the process of settler colonialism, land is remade into property and human relationships to land are restricted to the relationship of the owner to his property. Epistemological, ontological, and cosmological relationships to land are interred, indeed made pre-modern and backward. (Tuck & Yang, 2012, p. 5)

White privilege enables White people to experience the world from the social, cultural, and political position of dominance and rarely identifies with the colonizing processes that have brought this about, not only in past colonial times, but also in the present in enduring structures (Moreton-Robinson, 2004). Whiteness represents the other in particular ways (Moreton-Robinson, 2011), which simultaneously opens and closes legitimate ways in which the other may represent themselves.

While there are wide-ranging views shared by the following educators on the meaning of *Indigenizing*, a key theme is shared across them all—that education systems in Australia and Canada cannot honour, respect, and promote First Nations'

cultures, or speak the truth of our shared histories, without it. Hegemony of White privilege in education systems is founded upon particular epistemological and ontological assumptions about the nature, purpose, and limits of knowledge, which often means White knowledge. As these terms will be used throughout this book, each chapter will explore what they mean within their own context and case study.

Acknowledging and Understanding the Complexity of Indigenizing Education: Exploring Key Ideas

Strategic essentialism is a concept coined by Spivak (2008), discussed widely and often disputed in postcolonial theory. Essentialism is regarded as problematic, as it means to generalize diverse groups of people into broad, unified categories, for example, "Indigenous" peoples. The problem lies in the tendency for the uniqueness and diversity of political aspirations, languages, and cultures of these groups to be lost in a panoptic view of who Indigenous peoples are supposed to be, particularly through the gaze of non-Indigenous people. Spivak has argued that minority groups often unite in various political and social systems and spheres as a form of "strategic essentialism" to combat the consequences of marginality and leverage their combined power. So, for example, suggesting that there is something called "Indigenous onto-epistemology" draws attention to the fact that a different way of coming to know and looking at the world exists from that of Western philosophy. It opens the door to consideration that knowledge and education can take many forms which are privileged in schooling. Indigenous onto-epistemology achieves a political aim of disrupting the norm of Western thought in educational systems. The creation of such a concept does not mean that there is a single way that Indigenous peoples view, learn, and live in the world, but it enables non-Indigenous people to understand that they do. Hence, strategic essentialism occurs when diverse groups recognize that it is sometimes advantageous for them to temporarily "essentialize" themselves and to bring forward their group identity in a simplified way to achieve certain goals (Ashcroft, Griffiths, & Tiffin, 1998, p. 159). Moreton-Robinson (2011) argues that, despite marginalization in the academy, a consequence of this marginalization has been the emergence of a creative space for developing the conceptual tools required to, firstly, expose the social situatedness of hegemonic knowledge production and, secondly, expose and explain the different realities that are produced and experienced by different groups (p. 413).

Decolonization or Indigenizing: In their highly regarded paper "Decolonization is not a metaphor", Tuck and Yang (2012, p. 2) take as their line of departure the philosophy of Fanon (1963) to argue that decolonization can never be a friendly understanding. Nor can it be removed or decontextualized from the places and spaces and histories of contact between settler-colonizers and Indigenous peoples. This means that a general internationally relevant guide to decolonizing education is an impossibility. Tuck and Yang further argued that endeavours by non-Indigenous educators

to decolonize individual settler systems such as education should be understood as settler claims to innocence, a form of absolution of guilt for trying while knowing full well that decolonization of one such system cannot be achieved as it involves the "complete disorder of the world" (Fanon, 1963). What, then, are we attempting with this edited collection?

Indigenizing education is another view of what could be regarded as a cultural restitution of ways of knowing, being, and doing. As noted earlier in this chapter, Moreton-Robinson (2011) argued that institutions should recognize Indigenous axiology, epistemology, and ontology. This argument has international support via the United Nations Declaration on the Rights of Indigenous Peoples to "… to maintain, protect and develop the past, present and future manifestations of their cultures, such as … artefacts, designs, ceremonies, technologies and visual and performing arts and literature, as well as the right to the restitution of cultural, intellectual, religious and spiritual property". This implies that education systems which have, since colonization, privileged non-Indigenous knowledges need to open up opportunities for Indigenous peoples to protect and develop their culture. It requires the presence of Indigenous perspectives, which are embodied in the writings and teachings of Indigenous peoples, and valuing Indigenous knowledges which, as the contributors to this chapter demonstrate, is not as simple as including decontextualized snippets of knowledge into Western disciplines.

Education then must be reorganized in local, contextually meaningful ways to privilege Indigenous knowledges. The disruption of what Moreton-Robinson (2011) calls the a priori of Western knowledges offers redress to Fanon's (1963) observation that colonizers have reserved the power to distinguish "authentic" aspects of colonized peoples and traditions and decide what is genuine. Indigenous perspectives and knowledges, and more importantly, control over what and how these knowledges are shared, disrupt the colonial narrative of Indigenous peoples which can be "ideologically traced back to the emergence of knowledge *about* native peoples in the context of European imperialism and expansion from the fifteenth century" (Hart & Whatman, 1998, p. 1, emphasis added). This book then is not intended to absolve feelings of guilt, or responsibility for speaking to truth, to assure non-Indigenous people that any effort will also be "okay". Rather, it is designed to assist with understanding what forms Indigenizing education could take in very particular contexts, why the project should be taken up as an educator's responsibility, and why this may never be finished. It helps you understand that Indigenizing education is not neat and certainly is not comfortable.

Different approaches to Indigenizing: From the arguments presented so far, it has been our intention to show that there is no single approach to, or sole reason for, Indigenizing education. The purpose of this book is to present and discuss multiple Indigenizing projects across all levels of schooling, post-secondary, and non-school or community settings. Gaudry and Lorenz (2018) argued that there have been three distinct visions of Indigenizing post-secondary education in Canada: inclusion, reconciliation, and decolonial Indigenization. To achieve "inclusion",

> … the academy maintains most of its existing structures while assisting Indigenous students, faculty, and staff in succeeding under this normalized order, and on the other end, the university is fundamentally transformed by deep engagement with Indigenous peoples, Indigenous intellectuals, and Indigenous knowledge systems for all who attend. (p. 218)

Gaudry and Lorenz argue that universities have engaged in *rhetorical* commitment to reconciliation, which means that recognition of First Nations peoples has been included in policies and strategic plans, but that any radical reorganization of universities is yet to be undertaken. In Australia, senior executive positions of the university dedicated to Indigenizing university curricula began to appear over the last decade, but no Australian university has yet appointed a First Nations vice chancellor nor significant numbers of First Nations academics to the extent that post-secondary institutions in Canada or New Zealand, for example, have done. Commitment to Indigenizing school curricula has long been recognized in Indigenous education policy (Whatman & Duncan, 2012) and has been articulated into standards of professional practice for Australian teachers since 2011 (Ma Rhea & Anderson, 2012; Moodie & Patrick, 2017). This has required universities to consider how they might prepare teachers to meet such standards: what they should know, how they should come to know it, and how teachers could demonstrate their understanding of perspectives and acquisition of "new" professional knowledges. It has required schools to work with communities to arrive at some agreement as to what Indigenizing education could look like in their unique settings. Similarly, as discussed in several following chapters, Indigenizing education in community settings can also take many forms. How schools, communities, and post-secondary education institutes are responding to the growing imperative to Indigenize means that the approaches that are taken are as diverse as the settings in which they are occurring.

The role of allies: Antoine, Mason, Mason, Palahicky, and Rodriguez de France (2019) define an ally as someone from a privileged group who is aware of how oppression works and struggles alongside members of an oppressed group to take action. Being an ally in Indigenizing education means acknowledging the complexity of being an oppressor in a system designed by oppressors for oppressors and managing the guilt and emotional responses that arise from this realization. It means having open dialogue and honest reflection and negotiating priorities for working constructively alongside Indigenous peoples in your context. Bishop (2002) operationalized the role of allies in these three key strategies:

(1) Do not put your needs and interests ahead of the Indigenous peoples you are working with;
(2) Be self-aware of your own identity, privilege, unlearn your 'oppressor role' acquired since childhood and therefore come to know a new role in challenging oppression; and
(3) Engage in ongoing learning about Indigenous cultures and histories and reflect upon your own culture and identity and how these intersect (pp. 117, 125).

Charles (2016) further argues that "Ally is a verb". In his blog, *10 Common Things Well-Intentioned Allies Do That Are Actually Counterproductive*, Charles notes, "You actually have to do something! Being an ally is not silently agreeing

with the oppressed. You must constantly figure out ways to use your privilege to push forward the voice of the oppressed".

The explanations above highlight that there is much discussion around what it means to Indigenize education in academic and educational circles. This knowledge base is progressing and extending each and every year, meaning that the words, understandings, and practices that we draw on represent not only different perspectives of today but evolving perspectives over time, on an ever-changing spectrum (Wilson, 2014). As the evolution of this space offers exciting and uncomfortable opportunities for educators, the authors of this chapter wanted to provide their insights into how and why they have navigated this space, what they have learned and, in hindsight, what they believe is most important to remain proponents and/or allies of Indigenizing education in their own contexts.

Dialoguing Four Framing Questions for Indigenizing Education

To frame the discussion of what Indigenizing education means to each author in this chapter, Blair Stonechild, Linda Goulet, Nerida Blair, Becki Cook, and Dale Rowland were asked four questions. They were

1. What does Indigenizing education mean to you and why is it important?
2. Why do you think we are not as far down the path of Indigenizing education as we could be?
3. What role do you think non-Indigenous educators need to play in Indigenizing education?
4. What recommendations do you have for Indigenous and non-Indigenous educators to sustain their engagement with this work?

Their perspectives were sought as they represent a combination of First Nations Australians, First Nations Canadians, elders, experienced educators, and young educators. They were invited into dialogue around these four questions because we believe there are promises and possibilities in creating dialogue. We believe understanding is produced through the interplay of speakers, or text and reader, around concrete situations or specific questions. Therefore, meaning (what the words mean in that context) can never be separated from application (how this meaning will be applied in a particular situation). Gadamer (1975) argues that it makes no sense to speak of the meaning of a text apart from our reading of it. Dialogue, whether with text or among individuals, always has something else to say. Meaning is produced through events of disclosure rather than by a text or speaker alone. In a conscious attempt to explore evolving meaning, the interplay of partners in dialogue has the potential to generate shared meaning through what Gadamer calls the fusing of horizons. This fusing occurs because the interpreter of a text, or the listener to dialogue, belongs to and is conditioned by her or his culture, or her or his horizon of tradition. People interact within a particular historical horizon of tradition. Gadamer insists

all interpretations are anchored in social and individual histories. These histories or pre-understandings enter into any dialogical situation with us for they serve as the foundations for our values, assumptions, and relationships. Gadamer argues that the examination of pre-understandings, including historical traditions, provides a way towards promoting self-understanding and meaning. He advises that through non-adversarial dialogue there is always the ability to create meaning, but there is never the possibility to arrive at a final, conclusive meaning. Meaning is always temporal, situational, progressive, and shared through interactions. It is limitless with possibilities and open to interpretation and reinterpretation. Meaning, to Gadamer, is not stable; it shimmers. Through reading these five different perspectives, the richness of discussion allows the possibilities of what Indigenizing education could and should look like, to shimmer. If meaning develops through dialogue, our first question aimed to stimulate dialogue around what Indigenizing education might imply to these five people.

Blair Stonechild's understanding of Indigenizing education is underpinned by his contemporary work in the area of Indigenous spirituality (Stonechild, 2016). He draws attention to humanity's deep interconnections with all aspects of creation as a way of honouring and promoting Indigenous cultural values and views. He believes the incorporation of this knowledge is important in order to speak back to the destructive and rapid changes "civilized" cultures are having on this planet. Linda Goulet shares this view and adds that Indigenizing education includes learning Indigenous ways of being with self, and others with whom we share our social, physical and spiritual environments. Indigenous knowing, to Nerida Blair, also speaks to humanity's embeddedness with the languages and laws of nature. The ways in which Indigenous knowledge systems listen to, and work with, the languages, and laws of nature highlight to Nerida how different they are from Western knowledge systems. Acknowledging this difference and recognizing that one is not subservient to the other will allow all people to start on the same page when entering into dialogue that explores these cultural identities. Nerida provides an important caution, however, understanding that these knowledge bases are different means that educators cannot just present pieces of Indigenous knowledge and place them within Western knowledge without addressing how they are underpinned by different systems. Indigenous knowledge cannot just be added to "spice up" Western content as decided by educators. Accepting the professional responsibility to embed Indigenous knowledges must be a conscious decision to learn and make sense of these differences, in dialogue with Indigenous peoples. Dialogue is essential as it enables learning from within the space of this difference—what Nerida calls Lilyology (Blair, 2015) or the cultural interface (Nakata, 2007). The philosophies and onto-epistemologies of Indigenous peoples underpin what knowledge could be incorporated into the process of Indigenizing education, and this can only occur in dialogue. This dialogue would identify Indigenous perspectives, processes, and ways of being with self and others that support social, physical, spiritual, and cognitive environments. For Becki Cook, who directly supports Indigenous students to be successful within university settings, Indigenizing education means incorporating perspectives into teaching and learning activities that honour and offer respect to First Peoples. She believes this

honouring is important as educators need to be more culturally aware, and Indigenous students need to feel valued and respected in what they are learning. Ultimately, this process needs to serve Indigenous students by increasing the participation and success of First Peoples within education. Dale Rowland adds to this point by exploring the cyclical nature of knowledge. To Dale, embedding Indigenous knowledges means remembering and acknowledging that well before Western education, Indigenous peoples were at the forefront of learning, educating, and knowledge sharing in Australia and Canada. Embedding Indigenous knowledges is thus restoring them to their rightful place in the centre of systems of knowing. Consistent with all these perspectives, Dale believes that embedding means privileging Indigenous peoples' voices, perspectives, and knowledges in education systems in order to reveal truthful shared histories and to recognize and acknowledge their strengths and relevance to everyone.

What Does Indigenizing Education Mean to You and Why Is It Important?

Blair: As a survivor of Indian residential school, I have had a lot of opportunity to reflect on the nature and significance of education. After graduating from university, I leapt at the opportunity to work at Canada's first Indigenous-controlled post-secondary (tertiary) institution: First Nations University of Canada (FNUC, originally Saskatchewan Indian Federated College). The need to Indigenize education was first recognized by elders, and the challenge fell to academics. Among the university's early priorities were promoting Indigenous culture, correcting history, and defending Aboriginal and treaty rights. Only through this process could the legacy of our ancestors be honoured, and the integrity of current and future generations be maintained. I am currently focusing on the new priority of articulating Indigenous spirituality. Elders feel that it is important to share at this time when Indigenous youths are losing connection with their culture and to generally educate the public.

First Nations University of Canada, governed by the Federation of Sovereign Indigenous Nations in Saskatchewan, considers itself to be the first fully Indigenized university. FNUC has always benefited from the guidance of elders and has taught culture, history, and rights from an Indigenous perspective. My book *The New Buffalo: Aboriginal Post-Secondary Education in Canada* (Stonechild, 2006) charts the evolution of Indigenous post-secondary policy in Canada with a focus on Indigenous-controlled institutions such as First Nations University of Canada. It is also recognized that spirituality is foundational to Indigenous identity and culture. *The Knowledge Seeker: Embracing Indigenous Spirituality,* researched in consultation with elders, outlines a clear Indigenous spiritual ontology and epistemology.[1] The global significance and relevance of Indigenous spirituality will be further expanded upon in *Loss of Indigenous Eden and the Fall of Spirituality* (Stonechild, 2020).

[1] Stonechild (2016).

Our spirituality maintains that the creation of positive and harmonious relationships with all aspects of creation, not only humans, is essential. Humanity made the mistake of becoming exploiters rather than stewards. The occurrence of this error coincides with the emergence of civilization, which has been defined by a major study as rising up against and conquering of nature.[2] "Civilization" is a human-inspired project that contradicts and rejects humanity's original Indigenous values. As a consequence of this divergence in ideology, humanity has lost its way. The average mammalian species is expected to survive for one million years. Despite our large brains and vaunted intelligence, there is a question of whether humans will last even one quarter of that time.

The values of modern industrial society based upon wealth generation and consumerism have flourished only over the past two centuries, a blink in the span of earthly time. This is leading to frighteningly rapid and dangerous changes. In fact, it has been only since the 1820s that non-Indigenous people have become the majority of the world's population. This period also coincides with the emergence of the "Age of Reason" and rationalism, an ideology that completely rejects notions of spirituality. Another by-product is the Industrial Revolution with its accompaniment explosion of overconsumption, overpopulation, and massive deterioration of social and environmental conditions.

Many believe that a major shift in consciousness is necessary. Rediscovering Indigenous knowledge and wisdom provides a ready template to return to and is more vital than ever for healing ourselves and the planet.

Nerida: I am not sure that I like the term Indigenizing education. It leaves me feeling hollow and cold. It makes me think of people adopting a cookie cutter approach to education. A term like this allows people to think they can "add a spice of Indigenous something" and then feel they have added flavour. I will be more specific. If I am teaching a unit on the history of Australian fashion and I know I have to Indigenize the unit, I think of a contemporary Aboriginal fashion designer and add some information about them to the unit. Voila! I have Indigenized the curriculum. Well, in real terms, all this has done adds the flavouring without the context, so it just sits there without really belonging. Like oil and water, it will never really blend; one sits beside the other without making meaning.

I crafted the model and metaphor of Lilyology (Blair, 2015; see Fig. 1.1) to encapsulate a different approach. In essence, Lilyology identifies and acknowledges that Indigenous knowings are different from Western knowledges. Our worldviews are simply different. One knowledge/knowing is not better than the other, nor is it subservient as Western knowledge has portrayed Indigenous knowings since invasion/colonization. Indigenous knowings should not have to fit into the spaces of Western knowledge, as represented by the disciplinary boxes in Fig. 1.1, like a spice which adds flavour. Indigenous knowings have their own essence and structures.

[2]International Commission for a History of the Scientific and Cultural Development of Mankind, *History of Mankind—Cultural and Scientific Development,* "Prehistory and the Beginnings of Civilization," George Unwin and Allen Limited, 1963, 3–8.

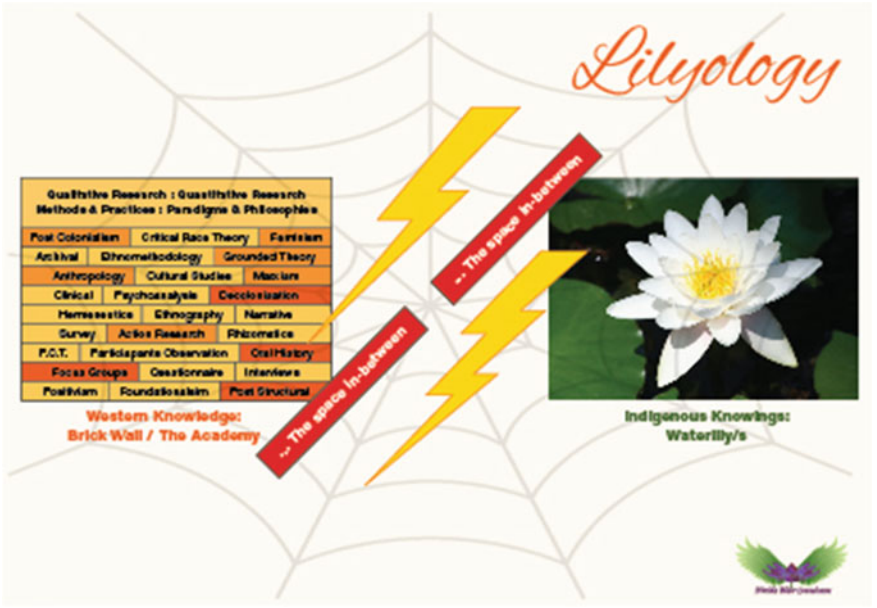

Fig. 1.1 Lilyology—a metaphor for Indigenous knowings and Western knowings (Blair, 2015, with permissions from Nerida Blair)

The imaging in Fig. 1.1 explores four main components which encapsulate a way for people to process and move forward where cultural differences exist. The first component is the brick wall which metaphorically represents the academy, the space and place where our knowledge emanates from and impacts policies, laws, structures, and personal and institutional values. At this level, and in this image, the bricks in the wall are disciplines, research methods and paradigms, philosophies, and research methodologies from within the academy. The wall could, however, represent courses within a school curriculum or even how we personally construct our own persona. In the case of the latter, we see ourselves in terms of physical, emotional, social, and professional constructs which could each be represented by bricks in a wall. The bricks, often formed from earth so having a connection to Country, are made and laid hierarchically. The bricks are homogenous. The pigments are blended within some of the bricks which identify a limited multidisciplinary or interdisciplinary approach within the academy. When building a wall, the wall is dug into the earth. The earth is disturbed, and the wall is placed on top of the earth. Our Western cultural lens is shaped from the academy. Lilyology asks that we shift our focus from the brick wall solely. It asks that we also look at Indigenous knowings, here represented as the water lily. Water lilies are found in many different waterways and come in all shapes, sizes, and colours. Lilies are rooted in Country; water Country where water, soil, and air nourish and grow them. Rhizomatically, the roots of lilies spread and spiral downwards and outwards, representing in this metaphor—Spirit knowings.

Spirit knowings move up through the stem to the flower of the lily which in short is the element where Spirit knowings are communicated into another space. The petals are not homogenous, and they overlap. They are organic and synergistic just as Indigenous knowings are being communicated and expressed through different elements of the lily flower.

A third element is the "space in between" Indigenous knowings and Western knowledge. This space is much like Ganma (Watson & Chambers, 1989, p. 5) where freshwater representing Western knowledge and salt water representing Yolngu knowledge meet and mix at the interface of two currents. In this space, no one water is more powerful than the other: they coexist. It is, however, a tumultuous space where the different waters meet; perhaps a confusing space, a space where metaphorically two worldviews are explored and played within messy, conflicting, emotionally charged, energetic, and transformative ways. Here lightning strikes represent this energy and this charge.

The final element is a spider web which, if drawn by someone skilled, would cover the whole image; it is sticky, transparent, and the vibrations are felt from all parts of the web from the outer to the inner, the inner to the outer, and everywhere in between. The spider web joins each of the elements embodying a holistic, organic approach to playing in the in-between space.

How do we realistically illustrate the difference between Western knowledge and Indigenous knowings, enabling us to then come some way to understanding how different worldviews can impact significantly? Understanding the concepts of "Country" and "country", as well as understanding the different concepts of story—"storys" and "stories"—helps bring the philosophy of Lilyology to something more tangible: perhaps even an "aha" moment.

A further explanation, perhaps: If we think about the word "country", Western knowledge thinks of a nation state like Australia, Canada, or New Zealand; it also thinks of country in terms of the earth we may stand on, the plants that surround us, and so on. Indigenous knowings embrace "Country" with a capital C.[3] As Country et al. state:

> Country and everything it encompasses is an active participant in the world, shaping and creating it. It is far from a passive backdrop to human experience, a scene in which humans live their lives, a place in which to embed academics' research. (Country et al., 2015, p. 270)

Within Indigenous knowings, "animals, rocks, winds, tides, emotions, spirits, songs and humans speak. They all have language and knowledge and Law" (Country et al., 2015, p. 270).

The concept of "story" also showcases significant differences. Hokari (2011), in his knowledge journey with the Gurindji mob, identifies Western story as being very linear and based on searching for a right answer to a question. The Gurindji mob,

[3] "Country/Countrys is the term I have chosen to describe Aboriginal Countrys, spaces and places. It is capitalized and pluralized to give respect to Aboriginal diversities. The term Country embodies ecological systems so much a part of Indigenous knowings; it is not just limited to geographical space and place. I choose to spell the plural differently to embrace the distinctiveness of concepts" (Blair, 2015, p. xvi).

on the other hand, sees story in spiral form and with many different entries and exit points. Story in this context has a "bundle of possibilities" (Hokari, 2011, pp. 106–107); there is not one answer to a single question, a number of possibilities coexist (Hokari, 2011, p. 107). We often hear from our students and other non-Indigenous people that Aboriginal people can never agree on anything, and this is said as a bad thing. It is interesting to look at, for example, the Dreaming story[4] of the Seven Sisters. The Seven Sisters Dreaming story in the Kimberley, Western Australia, in Awabakal, New South Wales, in Pitjantjatjarra, Northern Territory, are all different. Does this mean that the Awabakal story is right and the others are wrong? It means that the Country context for seeing the Seven Sisters is different. The connectedness for each is different but the stories are enriched by the telling and retelling of them from the different Countrys or places.

If our views of the world are this different when we engage with each other, we are speaking a very different language from the outset. It is essential that all parties are on the same page from the outset otherwise we just perpetuate a bland and inaccurate dialogue. We perpetuate a cultural identity that is simply inaccurate. How nourished we could be from acknowledging and embracing these differences. This process is more than Indigenizing education. It is playing in what Lilyology embraces as the "space in between" two different knowledge systems, which also have differences within. This can be messy, uncomfortable, and frustrating but ultimately, we become enriched, our storying becomes enriched, our identities become enriched by such knowing.

Indigenizing education embraces Indigenous knowings. Indigenization implies the process of decolonizing our worldviews. Decolonization requires that we as Indigenous scholars reclaim and centre our own Indigenous knowings through the challenges associated with decolonizing our own minds. Battiste and Youngblood Henderson (2000, p. 191) acknowledged almost two decades ago that decolonization "of existing thought and law is well underway"; however, the way people engage is decolonizing our language, our thinking, our experiences … is a tool that is useful in the space in between".

We need to understand the systems of thought that gave rise to the alienation bestowed on us by the academy. We must acknowledge the different knowing/knowledge systems and create the bundle of possibilities so that we can look forward, so that we can be enriched by more honest storying.

Linda: Indigenizing education is to incorporate the philosophies and epistemologies of Indigenous peoples into schooling. It is using the vast understanding of the peoples who have inhabited this land for thousands of years in the education of our students who will inhabit this space into the future. It includes the Indigenous content, processes, and ways of being with self and others in our social, physical, spiritual, and cognitive environments. It is important because the current education system is not serving Indigenous students well and, I would argue, is an outdated system that is

[4]I have chosen to use the term Story/Storys to reflect and show respect for Indigenous diversity and Knowing of the concept of Story. The word is capitalized … to embrace its significance …. The spelling of the plural Storys—reflects cultural distinctness of the concept (Blair, 2015, p. xv).

not preparing the majority of all students for life in our current information- and technology-driven society.

Becki: To me, Indigenizing education means incorporating perspectives which honour and respect First Peoples into learning and teaching, having educators who are culturally aware, and increasing the participation and success of First Peoples within education. It is creating an environment where Indigenous knowledges are respected and valued. It is being truthful and honest about not only Western history but that of First Peoples to create a space where students are supported and valued. It could be including examples, names, practices, and knowledge of First Peoples into the curriculum and including strategies which facilitate student success. This is important to create an inclusive space where all students can feel respected and can relate to the concepts being taught. It also allows all students to become more culturally competent themselves which can have a positive flow on in their future practice.

Dale: Indigenous cultures around the world have established knowledge systems, ways of being and doing that have formed the very basis of learning and education for centuries. For me, Indigenizing education is the process of remembering that education, or rather educating, does not precede Indigenous cultures; rather, Indigenous cultures shaped how we as people learn, what we learn, how we teach, and who teaches. Think of it as this: What came first, the chicken or the egg? In this instance, I think it is easy to forget that Indigenous knowledges and cultural practices in many ways preceded Western concepts of education. The very concept of eldership outlines the passing down of knowledge to the next generation. So, for me, the process of Indigenizing education is, firstly, remembering and acknowledging that well before Western education, Indigenous peoples were at the forefront of learning, educating, and knowledge sharing. Western education is likely an extension of this.

In this way, Indigenizing education means bringing back Indigenous knowledges to our practice as educators. The cyclic nature in which I view this process therefore requires adding what was once lost, through the thoughtful, respectful, and strengths-based application of Indigenous knowledges back into Western education. I think recognition and acknowledgement of this are vital to privileging Indigenous peoples. The importance of this cannot be overstated. In my teachings of Indigenous health, the number of students who are unaware of vital events within our history, such as the stolen generation, is astounding. Many students grapple with identifying their own culture and struggle to recognize that Indigenous peoples are part of Australia's history and culture.

Why Do You Think We Are not as Far Down the Path of Indigenizing Education as We Could Be?

Linda: Our modern Western education system is a legacy of colonization that continues to this day. It was designed and established by White settler males to meet the needs of the colonial society of the time. These forefathers held Eurocentric beliefs

and attitudes with the specific goal to assimilate all students into a British Eurocentric view of the world. Our schools and curricula (decision making, content, processes, relationships) are built upon these beliefs and schooling continues to be designed and managed by people who have been inculcated with these beliefs and practices even though the system no longer serves the realities of society today. Indigenizing education has the potential to decolonize and modernize our systems of learning. Initiatives are taking place with demonstrated success but much more is needed for systematic change to take place.

Our current learning environments are not serving Indigenous students and many other students well. I believe Indigenous understandings that are inherent in Indigenous languages provide the foundation on which positive changes to our education system are presently being made and can be made in the future. For example, in our book, *Teaching Each Other: Nehinuw Concepts and Indigenous Pedagogies* (Goulet & Goulet, 2014), we explore effective teaching of Indigenous students through the lens of Nehinuw (Cree) philosophy that emphasizes the relational, dynamic, and interactive nature of the world. This book was co-authored with Keith Goulet who is a fluent Cree speaker, born, and raised in an isolated Cree community where, when he was growing up, people lived off the land, spoke Cree, told the oral stories and legends, and were immersed in Cree ways of knowing and being. To the Nehinuw, learning takes place through action and interaction within one's self, with others in one's social and spiritual spheres, and with one's physical surroundings. Nehinuw views of teaching include three main forms: *kiskinaumagehin* (teaching others), *kiskinaumasowin* (teaching oneself), and *kiskinaumatowin* (teaching each other). Although the three forms are present in current schooling, the emphasis continues to be on *kiskinaumagehin* (teaching others), where the teacher is seen as expert and communication is primarily one way, from teacher to students. Valuing the other two forms, *kiskinaumasowin* (teaching oneself) and *kiskinaumatowin* (teaching each other), distributes power more evenly among the learners and the teacher. When combined with Nehinuw values, forms of social relationships, and concepts of leadership (Victor, Linds, Goulet, Eninew, and Goulet, 2019), the relationality of the learning environment is changed, creating space in the classroom and the school for students to take responsibility for their learning, to develop skills for respectfully working together, and for the expression and development of students' self and cultural identity. Learning can become dynamic and exciting. There are many other Nehinuw concepts that apply to Indigenous education but the foundation for change lies in changing the relationships of the learning environment.

Blair: Indigenous people are still struggling with the legacy of colonization. Local control over Indigenous education in Canada has increased since the 1970s. However, there are structural problems, including that education funding is dependent on outside sources, namely the federal government. At about 25% less than for comparable provincial jurisdictions, that funding is inadequate. There is more local curriculum and Indigenous teachers are being trained in increasing numbers. But there is a lack of higher-level professional development and administrative structures of oversight. More work needs to be done at the theoretical level, for example, defining the roots of ideological conflict between Indigenous peoples and mainstream. Progress lags in

some jurisdictions of a conservative bent which restrict or roll back progressive initiatives, or during times of fiscal restraint. In recovering from the colonialist legacy, Indigenous societies need to recover their original vision and values while adapting to current realities. There is a strong need for more clarity about the important contribution that Indigenous knowledge can make to humanity at this time.

Nerida: We cannot go down the path or even stay on the path of Indigenizing education if we do not listen to and hear what I have previously said about acknowledging the differences between Western knowledge and Indigenous knowings. Indigenizing education as is currently understood and practised is merely trying to fit Indigenous knowings into Western knowledge. This will never work. It will never work for the betterment of Indigenous peoples or cultures. Indigenous knowledges are powerful and beautiful and have so much to contribute in context to the bigger pool of knowings/knowledges.

Lillian Holt speaks about "exploring one's own discomfort", a powerful reflection when we think about how accepting another's knowings in the in-between space can be challenging (Holt, 2001). Lampert identifies, in her discussion about understanding how paramount yet tiring merging theory and practice in Indigenous education can be, "the challenge of proving that their practice matches their beliefs" (Lampert, 2012, p. 93). I take this further in requiring people to not only acknowledge their own personal beliefs, not only know Western educational theory, but to acknowledge Indigenous knowings in their own right. I will not get caught up using terms like Indigenous knowings theory because this tries to fit our knowings into the Western knowledge box or framework again. We have to do this if we are to go further with Indigenous education. Lilyology is a tool among others that we can embrace to do this.

Becki: I think that here in Australia people are still feeling the effects of our history and past events which have shaped our education system. Aboriginal and Torres Strait Islander history is part of Australia's history. There are many people who do not learn First Peoples' history accurately until they are in tertiary education; therefore, there are many people who do not see why it is important. It can be difficult for non-Indigenous people to incorporate First Peoples' perspectives into curricula, especially when they may not have a solid foundational knowledge themselves. Another challenge is the diversity of First Peoples' cultures within Australia as this should also be considered when Indigenizing education around the country.

Dale: The Western education system appears to undervalue the importance of Indigenous knowledges and Indigenous ways of being and doing. I think a lot of educators fall into the trap of thinking that something Indigenous needs to be added to the curriculum in order to satisfy a criterion. In some instances, this may be true, but going back to my previous response, a lot of educators are already applying Indigenous ways of doing to their practice. I think minimal work has been done in assisting educators to recognize what aspects of their practice have these elements, and which do not. So Indigenous content in the curriculum is important, but we must not forget about Indigenous practices that inform what we do.

What Role Do You Think Non-Indigenous Educators Need to Play in Indigenizing Education?

Linda: Our world right now is in desperate need of a paradigm shift from that of linear development to relational wholeness. We cannot sustain our current oppression of the world's people and the gouging of resources for the enrichment of a few. The Nehinuw (Cree) worldview is one of relationality, interaction, and reciprocity. We as humans are embedded in our physical, social, cognitive, and spiritual environments. We need to shift our thinking to a worldview that reflects our embeddedness in the world to sustain our lives by overcoming the Western hierarchical thinking and way of living that is wreaking havoc on the planet and on us as humans living here. This shift in thinking to an Indigenous worldview is open to anyone who wants to learn from the Indigenous peoples in their area.

For non-Indigenous educators, I believe our role is that of a learner who is willing to apply learnings from Indigenous peoples to our situation in education. A useful Nehinuw concept for us is that of *otootemitowin. Otootemitowin* means the person is open to others and environments in a way that is welcoming, embracing, accepting, and non-judgmental, a characteristic that is important for any teacher working with students from different cultural backgrounds. Having openness is key to overcoming colonial beliefs and practices in order to embrace different ways of education. The implementation of the three Nehinuw forms of teaching, not just for students but for one's own learning as an educator, is another place to start: to seek out and learn from others and then share your learnings. Interact with others, including Indigenous and non-Indigenous allies. Educate yourself as a teacher regarding the local and national Indigenous cultures, histories, knowledge systems, values, and understandings, then make them part of the curriculum.

It is difficult to make and sustain systemic change without *weechiyauguneetowin* (partnerships): partnerships with colleagues, parents/caregivers, elders, community members, and others. Elders and knowledge keepers who are respected in their community are often willing to share their understandings and practices. In my experience, elders, when approached respectfully and humbly, are open to non-Indigenous peoples. Partnerships with parents/caregivers and community members can also support a non-Indigenous teacher when the relationship is one of respect and reciprocity. Students also have so much to teach us as educators about how they learn best. Observation of students' responses is key as is approaching them without assumptions of who they are culturally. Some Indigenous students may carry a lot of cultural knowledge; others may not due to systemic oppression of Indigenous peoples and their ways.

I found learning some key words of the local Indigenous language (in my case, Nehinewan–Cree language) to use in my teaching elicited positive responses from Indigenous to non-Indigenous students alike. Keywords that apply to education, such as the concepts for teaching or important values of the local Indigenous group, have helped me, especially when the deeper meaning and concept of the words or expressions are understood. For example, the Nehinuw word *cheegeneetumowin* translates

as the excitement and exuberance of life and action. Would not it be something to see that expressed in our learners—the curiosity and wonderment of life and the excitement of exploring something new?

Finally, be an ally. Advocate and continue to struggle for systemic change but be careful that your voice is not drowning out those of Indigenous peoples.

Blair: Non-Indigenous people are becoming increasingly sensitive to injustices and willing to be allies. Teachers in Saskatchewan have been very effective in helping to bring about improved attitudes towards Indigenous culture and treaty rights. Non-Indigenous educators are critical in influencing change within mainstream society. Perhaps they realize that their ancestors were originally Indigenous before they became "civilized". The current dominant system positions humanity as the central purpose of creation, which is a departure from Indigenous values. This is also at the root of the current dysfunctional relationship with nature. It needs to be realized that Indigenous culture has enabled humanity to survive successfully since our origins about 200,000 years ago. Civilization began in small pockets 6000 years ago, and non-Indigenous peoples only became the majority in the early 1800s. The frantic economic and military development that has occurred in the last 200 years is leading us to the brink of self-destruction. The truth and reconciliation process for residential schools is an example of an effective model of engaging non-Indigenous allies. It works because the focus of action is on individual and group commitment to incremental and practical change. It does not rely on government policy or funding.

Nerida: Non-Indigenous educators have a fundamental role to play in Indigenous education. I am choosing to use the term Indigenous education to mean more than education about Indigenous peoples and cultures. Indigenous education embraces us all as educators practising Lilyology or exploring other means to understand the distinctiveness of Indigenous knowings. We all have a responsibility in Indigenous education. In an Australian context, unless we embrace Indigenous knowings our nation's story will remain untold. It will remain superficial, young, and disconnected from the Countrys we are a part of and the country we are a part of.

Becki: Non-Indigenous educators have a very important role as they represent the majority of educators in Australia. By taking on the challenge of Indigenizing education, they can facilitate a more inclusive learning environment for all, not just First Peoples students. Doing this, educators can become role models and students can see that cultural awareness and First Peoples' perspectives and histories are not things to be afraid of but something that can be embraced and shared.

Dale: Non-Indigenous educators are vital to the process. Indigenous peoples of Australia make up 3% of the population and are underrepresented in many professions. There simply are not enough Indigenous educators, and while building an Indigenous education workforce is important, so is building the cultural capabilities of non-Indigenous educators. I think that in Indigenous peoples' plight to self-determination, we have inadvertently contributed to non-Indigenous peoples' hypersensitivity towards working and partnering with us to serve a common purpose or goal. There is a lot of reluctance in working within this space due to fear of "getting it wrong" or unintentionally offending someone. I think that doing nothing is far worse than getting it wrong or unintentionally offending someone.

What Recommendations Do You Have for Indigenous and Non-Indigenous Educators to Sustain Their Engagement with This Work?

Linda: I recommend what has always sustained teachers—the love for and response of our students. When things get tough, so much of our interactions with students can energize a teacher—the disclosure or smile of a student, their trust, a performance that demonstrates their creativity, mastery, or growing confidence, an "aha" moment when they really understand a concept, or a group of students enthusiastically interacting and learning together.

Do not forget the importance of professional learning communities (even if it is only a community of two) where you share your knowledge (and frustrations) with each other, have fun, and socialize together, while you do the tough work of educational change. I learned so much in my career working and socializing with Indigenous and non-Indigenous students, colleagues, and different elders over the years. It was worth every moment.

Blair: There is a need for all to come to a common understanding of our true history and the mutual impact of contact and colonization. The immigrants who came to Indigenous lands are also inheritors and victims of the colonialist regime which they brought with them. There are clear parallels between the experiences of Australia and Canada. There is a need for the mainstream to engage in a respectful way with Indigenous cultures, elders, and spirituality. Interesting and novel approaches such as the "blanket exercise" are simple but effective learning tools. Non-Indigenous people need to know that they can be party to the dramatic transformation in mainstream society's outlooks and practices that will be necessary if future survival of all is to be guaranteed.

Nerida: Indigenous and non-Indigenous educators need to acknowledge the existence of Indigenous knowings as separate and distinct forms of viewing the world. We all then need to find our own personal connectedness and relatedness. For example, I was born in the Kulin nation and live in Darkinjung Country. I have had to explore Indigenous knowings in the contexts of Kulin and Darkinjung Countrys to give life to what and how I teach. Exploring the diversity of Indigenous knowings has meant finding the bundle of possibilities. This is an ongoing requirement. This embraces in practice the "theory" of Indigenous knowings; specifically, contextual change. Sustainability in this context requires us as educators to be open, to actively listen and hear Indigenous knowings. It requires being current and engaging with Country.

Becki: Firstly, I would say that taking any step to Indigenize education is a step in the right direction, no matter how slow things change; so do not be afraid. If your school or institution is slow to get on board, then I would suggest speaking to community and broadening your own knowledge first. Reach out to elders or local community organizations to learn the history of your area and be involved in local events. This way you may be able to make small changes within your own learning environment to be more inclusive. By showing individual respect towards

and placing value upon First Peoples' knowledge, culture, and history, educators can set an example and show their students that this is important. I also believe that the responsibility should be shared between First Peoples and non-Indigenous educators. Improvement in educational outcomes requires collaboration between First Peoples and non-Indigenous peoples.

Dale: First, we all (myself included) need to acknowledge the diversity and uniqueness of Indigenous peoples, our history, and our expertise. Recognizing the value of cultural practices, eldership, and our ability to have survived and thrived for tens of thousands of years can inform our practices and the principles incorporated into the classroom, all of which have been around well before colonization. Second, non-Indigenous educators need to be courageous, but mindful. Being aware of one's own hypersensitivities towards teaching Indigenous curriculum is important but should not limit your ability to learn new skills and increase your knowledge base. Third, remember that failure to act is often (but not always) far worse than getting it wrong, and lastly, seek the advice, expertise, and wisdom of Indigenous communities and elders. Invite them into the classroom, seek permission to share their stories, and allow them to educate you and your students. I think that this book will be an excellent first step on your journey. Best of luck.

Emerging Themes from the Dialogue

Even though these authors offer different perspectives of what Indigenizing education means to them and why they perceive it is important, there are ten common themes that emerge. These are

1. Both Australia and Canada are still embedded in the legacy of colonization. Our schools, curriculum (decision making, content, processes, relationships), and teaching practices are built upon Eurocentric beliefs and attitudes with the specific goal to assimilate all students into a British Eurocentric view of the world.
2. Schools continue to be designed and managed by people who have been inculcated with these Western beliefs and practices: people who do not see the value or importance of Indigenous ways of being and doing. There is a lack of professional development and administrative structures valuing the important contribution that Indigenous perspectives can make to Australia and Canada.
3. Indigenizing means understanding and speaking back to colonial portrayals of Indigenous ideologies and knowledges as less than Western ideologies and knowledges. It means decolonizing language, thinking, experiences, and worldviews so Indigenous ideologies and perspectives are honoured and respected.
4. Indigenizing education means to incorporate the ontologies, epistemologies, and perspectives of Indigenous peoples into educational systems which typically privilege non-Indigenous ontologies and epistemologies. This means that

tensions are inevitable but doing nothing is far worse than getting it wrong or unintentionally offending someone.

5. Indigenizing includes promoting Indigenous cultures, worldviews, content, processes, and ways of being with self and others in social, physical, spiritual, and cognitive environments. It also means correcting history and defending Aboriginal and treaty rights.
6. Indigenizing education is currently understood and practised as trying to fit Indigenous knowings into Western knowledge. Indigenizing education does not include sprinkling Indigenous perspectives to spice up the curriculum through tokenistic, superficial, and decontextualized activities or experiences. Embedding Indigenous ideologies or perspectives requires a major shift in teacher consciousness to understand and respect the differences that underpin Western and Indigenous knowledge bases. Indigenizing education acknowledges Indigenous knowings in their own right and understands the ideological differences between Western knowledge and Indigenous knowings.
7. Educators need to acknowledge the existence of Indigenous knowings as separate and distinct forms of viewing the world. They need to acknowledge the diversity and uniqueness of Indigenous peoples, histories, and expertise and be open to learning the true history and the mutual impact of contact and colonization. They need to find their own personal connectedness and relatedness with Indigenous knowings and be able to make small changes within their own learning environment to be more inclusive.
8. A paradigm shift is needed to move from the Western colonial dysfunctional, self-destructive, and oppression relationship with nature and the world's people, to one that values the important contribution that Indigenous perspectives can make to humanity at this time. This requires understanding and acting in ways underpinned by relationality, interaction, and reciprocity and our embeddedness in our physical, social, cognitive, and spiritual environments.
9. Non-Indigenous educators are critical in influencing change within mainstream society as they represent the majority of educators in Australia and Canada. The non-Indigenous community needs to understand they too are inheritors and victims of the colonialist regime. Non-Indigenous allies need to be open to reflecting on colonial beliefs and practices in order to embrace different ways. They need to educate themselves about the distinctiveness of local and national Indigenous cultures, histories, knowledge systems, values, and perspectives, then embrace them and make them part of our nation's stories and part of their own teaching curricula. Non-Indigenous allies can become role models and help build cultural awareness and capabilities around First Peoples' perspectives and histories.
10. To make systemic change, and to support and sustain this important work, it is essential that educators reach out and form communities with both professional learning communities and Indigenous communities. They need to seek out and learn from others and then share this learning. By engaging with Indigenous

communities, educators can seek the advice, expertise, and wisdom of Indigenous communities and elders, learn how to act in respectful ways with Indigenous cultures, elders, and spirituality, and learn how to actively listen and hear Indigenous knowings, and engage with Country. Educators can learn about the history of their area and be involved in local events. By engaging with professional learning communities, educators can share knowledge (and frustrations), have fun, and socialize together, while being supported in doing the tough work of educational change.

These ten themes represent some of the fundamental ideas that can be found when discussing what it means to Indigenize education. These themes can be found, to varying degrees, interwoven throughout the eight case studies presented in the next eight chapters. In sharing their experiences with Indigenizing education, the authors of the following chapters discuss what they have done within their own unique context, and what they have learned. The concluding chapter brings together these ten themes with the key understandings from each chapter. If knowledge is information in action, then the authors share their knowledge to contribute to these important conversations about what Indigenizing education could look like in teaching and learning practices across our two counties. Our aim is to help support you, the reader, and educator, to more deeply engage with the practical application of Indigenizing your own pedagogical practice.

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Part II
Indigenizing Practice in Community Settings

Chapter 2
Financial Literacy Education in a First Nation Community in Canada: Educating for Agency

Levon Blue

Abstract This chapter reports on the findings from a case study that took place in a First Nation Community in Canada. Personal reflections from the author's experience working with First Nation youth to build financially capabilities are also shared. Revealed in this chapter is how conventional financial literacy education promotes individual wealth accumulation practices and focuses on an individual's ability to be responsible for their own financial circumstances. A praxis approach to financial literacy education looks beyond the individual, considers what influences financial decision-making, and acknowledges the unique circumstances individuals enter this world with. This approach also exposes the role of social structures and barriers that continue to perpetuate inequities and what affect that has on an individual's ability to improve their financial circumstances. In this chapter, an exploration of financial literacy education practices within a First Nation Community are shared to understand the relevance and importance of financial literacy education in this context. Educating for agency is discussed by designing financial literacy education based on the needs of some Community members. Identified are some examples of oppressive financial practices occuring inside and outside of the Community that may enable and constrain financial practice at both an individual and Community level. Recommended are ways to overcome oppressive financial practices that First Nation peoples may encounter by developing financial literacy education that focuses on increasing agency, not financial wellbeing, in a financial context.

Introduction

Education occurs in both formal and informal settings. In this chapter, I describe how financial literacy education was established in an informal setting in a First Nation Community in Canada. As a member of this Community, I was able to focus on the financial literacy education needs identified by some Community members based on previously conducted research (Blue, 2016). This Community is located on a First

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Nation reserve and has a primary school. Young people wishing to complete high school must enrol in a high school on the mainland. Boarding in town during the harsh winters becomes a necessity when transportation between the mainland and the reserve becomes limited, infrequent and completely cut off at times. Thus, education that occurs in this site beyond primary school follows the "fly in fly out" model, where individuals from outside the Community (including Community members who live off-reserve) come into the Community to deliver education. Informal education provided to Community members by other Community members living on the reserve also occurs.

It has been argued elsewhere "that education always occurs in local sites and that changing education, no matter how it is imposed or encouraged, always sets in train processes of 'site-based education development'" (Kemmis, Wilkinson, Edwards-Groves, Grootenboer, & Bristol, 2014, p. 205). The research project explored the financial literacy education practices in the Community as a case study. Identified during the research was the need to build financial capabilities in three areas: understanding financial statements, learning how to complete the budgeting section of grant applications and developing financial awareness for Community members before they embark on higher education.

Being financially literate may contribute to individuals developing agency in a financial context. Agency of this kind is required to overcome the oppressive financial practices occurring both inside and outside the Community. By "oppressive financial practice", I am referring to the deliberate use of tactics involving financial transactions and/or financial decisions, to adversely impact on the individual and/or their Community. An oppressive financial practice on an individual level could be ignoring a request for a direct deposit, issuing a cheque instead. At the Community level, an oppressive practice could include limiting access to the audited financial statements of the Community's trust funds and/or not adequately consulting Community members as to how funds are spent.

The theory of practice architectures (Kemmis et al., 2014) is used as a theoretical lens to understand how the sayings, doings and relatings enable and constrain oppressive financial practices. Examples are used to demonstrate how social structures and barriers continue to perpetuate inequities, and how these structures and barriers constrain an individual's ability to improve their financial circumstances.

Financial practices occurring both inside and outside the Community may be oppressive. I argue that financial agency[1] is an outcome of financial literacy education rather than financial well-being. Examples of how to build financial capacity through financial literacy education are discussed as ways that may enable an individual to be comfortable asking financial questions, resulting in greater agency in financial decision-making.

[1] I argue that agency in a financial context refers to an individual's ability to feel comfortable asking questions and demanding answers about finances relating to their own financial circumstances and also their Community's finances.

Not All Wealth Is Created Equally

The income disparity gap between Indigenous (including First Nations, Métis and Inuit) and non-Indigenous people in Canada is massive and is the legacy of colonization (Wilson & MacDonald, 2010). For many Indigenous people in Canada, poverty continues to be a real challenge. Understanding the historical reasons for continuing poverty among Aboriginal (used interchangeably with Indigenous) people can help to better inform educational practices and funding initiatives. Government funding is also required to address the underlying causes of poverty among Canadian Aboriginal people (Wilson & MacDonald, 2010). More Aboriginal people being educated at post-secondary levels will help to resolve this income disparity gap, but it is not a silver bullet to a complex problem (Wilson & MacDonald, 2010). Furthermore, an inability to acquire intergenerational wealth through inheritance remains a challenge, with land on reserves often deemed to have no value by financial institutions.

Land ownership on reserves ensures that Aboriginal people have somewhere to build a home. Having a home also assists in providing for a family, being able to study and maintaining employment. However, the reserve's island location with ferry access was set up for survival only during the assimilation era. It is not ideal for maintaining employment off the reserve.

The Crown retains the legal title of land on reserves. A certificate of possession can be transferred, but this certificate requires approval by the Minister of Indian Affairs and Northern Development (Flanagan, Alcantara, & Le Dressay, 2010). Land owned on reserves in many parts of Canada remains problematic when it comes to building wealth through property ownership. In particular, issues about land possession continue to be an area of struggle for families with grandmothers who were forced to give up their rights as "Status Indians"[2] when they married a non-Indigenous person. Having a certificate of possession instead of fee simple ownership of land means that financial institutions do not see value in the land or property on reserves. Not having the value of land recognized by mainstream financial institutions results in Indigenous people being unable to secure loans and/or to access equity in their homes. The end result is that there is no intergenerational transfer of wealth through property ownership for First Nation families living on reserves.

First Nation Land Management Act

Many First Nation communities are trying to establish their own First Nation Land Management Act (Government of Canada, n.d.), but this is not without its faults (Flanagan et al., 2010). One issue with the First Nation Land Management Act is that each First Nation Community under this Act must establish their own system

[2]The Government of Canada defines "Indian status is the legal status of a person who is registered as an Indian under the Indian Act". More information can be obtained from https://www.aadnc-aandc.gc.ca/eng/1100100032463/1100100032464.

of property rights within their own Community. "Taken to the extreme, this could lead to 630 different First Nation land codes in Canada, each with uniquely defined property rights—a nightmare scenario for developers interested in doing business on Indian reserves" (Flanagan et al., 2010, p. 121). Whether having diverse land codes among First Nations communities in Canada helps to limit interest from outside business enterprises approaching multiple communities and is best for the individual Community is unknown. The First Nation Land Management Act relies on trust. Therefore, the Act is only as reliable as the Band Office[3] and the committee that maintains the register and is responsible for managing and enforcing the Act. The First Nation Land Management Act has the potential to affect the balances of social power by removing the Canadian Government's power and restoring power to First Nation communities. Within First Nation communities, there is the potential for an imbalance of power to arise between Community members. Two groups emerge: First Nation members who are responsible for enforcing the First Nation Lands Management Act and First Nation members who are not. To undermine the integrity of the First Nation Land Management Act, all that is required is for a Community member associated with enforcing the Act to engage in corruption, intentionally or unintentionally. To overcome such risk, moving from centralized ledgers (record books) to distributed (shared) ledgers is required. Shared ledgers that use block chain[4] technology do not rely on a trusted central group of individuals to maintain and validate that the records of land are transparent and secure. Nevertheless, without wealth generated from property inheritance, the massive wealth gap between Indigenous and non-Indigenous people in Canada will remain.

Financial Literacy Education Is not the Silver Bullet to Acquiring Wealth

Oliver and Shapiro (2013) argue that individuals who own financial wealth are the individuals who "… will inherit wealth, property, position, and power" (p. 69). Understanding the role inherited wealth, property, position and power has on being financially well off reveals that education is not key to acquiring wealth. Thus, despite financial literacy education being an important initiative, it is problematic to view financial literacy education as a way to resolve wealth disparity gaps.

Financial literacy education is a way to educate the masses about effectively managing personal finances at various life stages (Lusardi & Mitchell, 2013). The conventional approach often focuses on the individual and what they can do to improve and/or maintain their financial status, while ignoring the responsibilities of banks and governments (Davies, 2015). The critically compassionate approach to financial

[3] A Band Office is set up in First Nation communities that are subject to the Indian Act. It is a structure of government that usually includes an elected Chief and Council.

[4] Block chain technology is a secure, decentralized, transparent, distributed, digital ledger that works by a consensus system.

literacy education is premised on care and compassion for others and acknowledges that individuals do not choose how they enter the world nor the socio-economic status (SES) of their family (Lucey, Agnello, & Laney, 2015).

Blue and Grootenboer (2019) built on Davies (2015) and Lucey et al. (2015) alternative conceptions of financial literacy education to argue that a praxis approach to financial literacy education includes full attention to:

- comprehending how financial decision-making impacts others and self;
- acknowledging that some life decisions are not financially rewarding but often valuable and necessary;
- understanding that improving financial mathematics skills and capabilities may not equate to an increase in income;
- considering how SES impacts an individual's ability to save and maintain long-term savings; and
- recognizing the ways in which gender, culture, values, psychological state, socio-economic class and ethics shape identity and what impact these factors have on an individual when faced with a financial decision. (Blue & Grootenboer, 2019, p. 763).

Focusing on the impact of financial decision-making on self and others brings attention to how First Nation communities manage the Communities' finances.

Enabling Agency in a Financial Context: Educating the Individual for Engagement with Community Finances

Exercising financial authority or power may be an attempt to oppress others in order to maintain unjust conditions. In Canada, the First Nations Financial Transparency Act was established in 2013 (Government of Canada, 2013). Although in 2015 the Minister of Indigenous and Northern Affairs issued a statement that the department ceases all compliance measures related to this Act (Government of Canada, 2017a), many First Nation communities continue to send their Band Office's audited financial statements to the Canadian Government. First Nation communities in receipt of land agreement settlements also have funds held in Trust accounts. Trust fund expenditures are separated from the Band Office financial statements.

In 2017, the Canadian Government commenced engagement with First Nations leaders, members, organizations and institutions about "a new approach for mutual transparency and accountability between First Nations and the Government of Canada" (Government of Canada, 2017b). Although the Government is not enforcing the Act, the need for transparency remains critical. This lack of transparency and accountability is referred to in the petition Charmaine Stick, an Onion Lake Cree Nation member, delivered to the Trudeau government seeking enforcement of the First Nations Transparency Act (Bernard, 2019).

Being accountable to Community members through financial transparency provides an opportunity to encourage members to be involved in financial decision-making and reviewing financial statements. Communicating with members about the release of audited financial statements may also help members to review the statements and pose questions. Questions such as What financial accounts exist in the Community? Where are the financial statements kept? What accounts are being audited? Where are the signed and dated audited financial statements? How long has the auditing firm been employed? Why is this auditing firm only auditing some of the Community funds (i.e. Band Office accounts not all of the Trust accounts)? What concerns did the auditors find? What improvements to practice have the auditors recommended? How have the recommendations from the audit been implemented?

To assist with engagement in financial statements issued by First Nations, the Canadian Government has produced an annotated guide to reading financial statements (Government of Canada, n.d.). This guide provides a description of the financial statements and additional information available for individuals wanting to delve more deeply into the subject area. How widely this resource is accessed is unknown. Nevertheless, learning the capitalist tools of the oppressor may help to challenge oppressive financial tactics and make visible unjust financial practices inside and outside Communities.

Being and/or becoming financially literate may result in Community members developing agency in a financial context. Gutstein (2003), who was influenced by Freire and Macedo (1987), explained the importance of high school students (individuals) believing that they can make a difference through understanding the power relationships in society and questioning how these operate. "Helping young people develop a sense of personal and social agency can be an important step towards achieving equity" (Gutstein, 2003, p. 39). Here, agency refers to an individual's ability to feel comfortable asking questions and demanding answers about finances relating to their own financial circumstances and their Community's finances. When educators adopt a pedagogy for social justice in formal and/or informal educational settings, overcoming oppressive financial practices may be enabled. "Thus, a pedagogy for social justice has three main goals: helping students [individuals] develop socio-political consciousness, a sense of agency, and positive social and cultural identities" (Gutstein, 2003, p. 39).

Gutstein's (2003) work also considers how critical mathematics involves reframing the mathematical relationships that define society. The legacy of colonization impacts the power relations between Aboriginal people in Canada and the Canadian Government from a financial perspective. Community members are able to access government funding to attend post-secondary schooling, funding that is a result of historic treaties. Funds from modern treaties or land claim agreements have also been awarded to First Nation Communities. Understanding the historical context behind the development of the Community's financial activities could illuminate ways to transform oppressive financial practices.

Shanks (2019) found that having a critical vision of society helps to move towards transformative educational practices. Research undertaken in high school economics

classrooms explored how economics could be used as a lens to understand past injustice and move towards a more just future. Murrel (1997) contended that teaching for social justice involves developing positive social and cultural identities, valuing language and culture, and teaching the truth about history. Thus building financial capabilities with Indigenous people begins by valuing Indigenous knowledges, language and culture and by sharing the truth about how the effects of colonization persist today.

Education Based on Needs—Research Design

Most financial literacy education for individuals is based on assumed need. Moreover, financial literacy education is often developed from a deficit perspective instead of being designed based on the needs of the participants (Blue, 2016). Introducing financial literacy education into the curriculum in compulsory school settings was a deliberate move to undo the financial troubles revealed in the global financial crisis (Pinto, 2009).

As mentioned earlier, the "fly in fly out" approach to informal education is common practice in this Community. A national financial literacy organization delivered a train-the-trainer workshop prior to the first research project I conducted in this Community. This train-the-trainer workshop failed to gain traction, as no attendees volunteered to become trainers (Blue, 2016). I interviewed 19 Community members in order to understand their financial literacy education needs. Semi-structured interviews were used to explore the relevance and importance of financial literacy education in this context.

A needs perspective has the potential to shift an educator away from a one-size-fits-all curriculum. Site-based education development was employed in this Community. Kemmis et al. (2014) defined site-based education development as:

> the development of education and educational practices to be appropriately and effectively responsive to the local needs, opportunities and circumstances of students, schools and communities in diverse and different local situations—at each local site (p. 213).

Site-based education development enables innovation and the responsive education practices that address the diverse needs and circumstances of both the individuals and the site (Kemmis et al., 2014). Furthermore, Wellenreiter (2012) argues that coordination is required "…between curriculum policymakers and infrastructure policymakers to provide for economically inclusive environments" that ensure "…the gap between what is learned in school and what is experienced in communities" is diminished (p. 28).

Financial Literacy Education Within a First Nation Community

Blue's (2016) study identified three areas of need for financial education: awareness for Community members attending post-secondary education; understanding financial statements produced in the Community; and learning how to complete the budgeting section of grant applications. Although the three issues had an individual focus, the connections to policies and procedures in the Community were also evident. Attending post-secondary education includes understanding Community education policies and procedures in order to access funding allowances. Understanding how to read Community financial statements as part of financial literacy education also extends to how "others", such as the Band Office and Trust Office, make decisions about the Community's finances. Last the need to learn how to complete the budgeting section in grant applications was connected to researching the grants available in the Community and to Community members.

Indigenous Needs, Exploring What Enables and Constrains Financial Practice—Theoretical Framing

Identifying participant's needs is achieved by listening to the issues raised by participants and other Community members with respect to financial practices. Financial literacy education that is framed based on an understanding of financial needs within a First Nation Community is a needs-based approach. There is nothing particularly Indigenous about the activities in a needs-based approach; rather, it is about obtaining knowledge of the Community's policies and the allowances provided to Community members that might make an activity relevant. An example of such an activity is connecting the Community's post-secondary education policy and focusing on awareness of the policies conditions and benefits including the monthly allocation each student is provided. Then connecting real-life financial dilemmas students are facing as activities, including making decisions about housing (on for off campus), transportation, as well as buying food and phones, obtaining childcare (if applicable), and participating in social activities.

Understanding the Community's financial practices and financial reporting is also critical in developing awareness of how funds are spent within First Nation communities. Knowledge of financial compliance reporting mechanisms enables Community members to act when compliance is lacking. Oppressive financial practices occur both inside and outside First Nation communities. Therefore, it could be meaningful to design financial literacy education that is connected to how funding allocations, income and wealth distributions within Communities occur as a result of historic and modern treaties.

The theory of practice architectures (Kemmis et al., 2014) was used to identify what enables and constrains financial practices in a First Nation Community.

Financial practices are both individual and social. There are three elements to practices—sayings, doings (Schatzki, 2010) and relatings (Kemmis & Grootenboer, 2008). This theoretical lens identified the sayings in the cultural-discursive dimension (in semantic space) that are understood through language. Doings are experienced through activity within the material-economic dimension (in physical space-time) and the socio-political dimension (in social space) and are realized by power and solidarity (Kemmis & Grootenboer, 2008). Once realized through the mediums of language, activity, power and solidarity, the practice architectures that enable and constrain practices can be understood. The practice architectures are found in, or brought to, a site through the cultural-discursive, material-economic and the social-political arrangements. Practice architectures that enable one individual's practice may constrain another individual's practice.

Figure 2.1 illustrates how practices are interactionally secured in sayings, thinkings, doings and relatings. All these are realized in turn through language, work, power and solidarity. The practice architectures enable and constrain practices through social interaction. The intersubjective space, which is located between the individual and social space, is where practice and dispositions come together in semantic space (where meaning is made cognitively), physical space and social space.

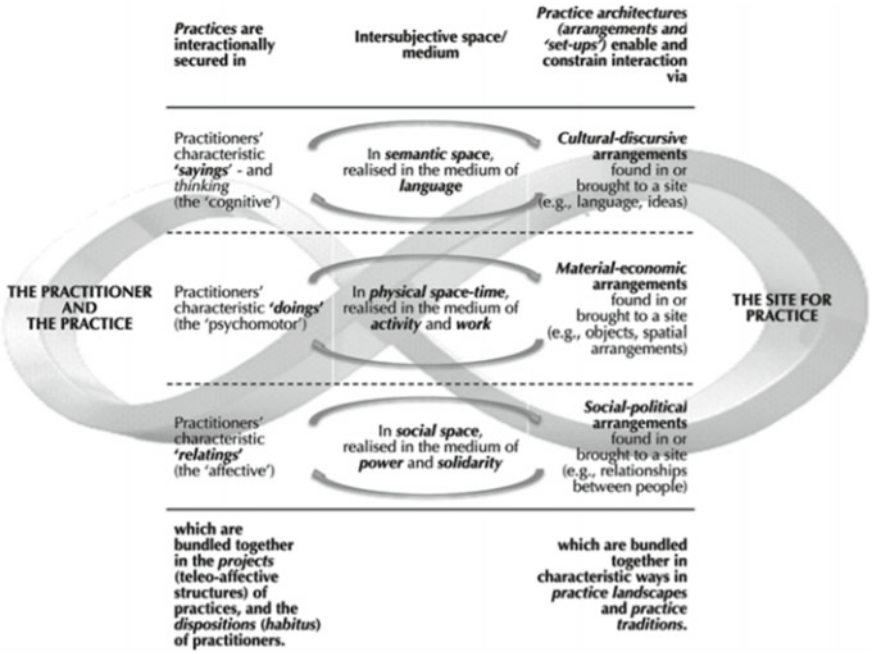

Fig. 2.1 Theory of practice architectures (Kemmis et al., 2014, p. 38)

This theoretical lens was used to explore some oppressive financial practices occurring inside and outside the Community. Gaining an understanding of the oppressive financial practices may help to expose the unjust financial practices. Educating for agency in a financial context may help to transform oppressive financial practices.

Oppressive Financial Practices Within Communities

Oppressive financial practices occur within First Nation communities. Ignoring this reality allows oppression to continue, and prevents the needs of Community members from being met. Examples of oppressive financial practices may include deciding on behalf of Community members what their needs are (instead of listening to the majority of the members' views), ignoring and/or delaying payment requests, and not paying invoices for work completed by members until they were queried. All of these issues require someone with agency to challenge why these types of decisions have been made and why some Community members are being ignored or denied a voice.

A lack of financial transparency within the Community oppresses Community members who do not know how Community funds are spent. Although the Band Office's financial statements are readily available, other Community financial statements were not immediately accessible. Hence, the focus of the financial literacy education activities to develop agency should have a focus on what financial statements exist and their location.

To combat the oppressive tactics within the Community, a peaceful protest occurred during my time on the Reserve (see Mendler, 2019). My decision to speak at the protest (that I did not organise) was to stand up for democracy and amplify the voices of other Community members who could not speak on the day. As the only Community member with a PhD relating to financial literacy education practices, my expertise were called upon by some of my relatives.

Table 2.1 details the sayings, doings and relatings based on my personal reflections about the decisions made by some Community members in power that other Community members were speaking publicly about. The protest (activity) brought Community members together to voice their understanding of unjust practices. By coming together, the individual becomes connected to other individuals with similar thinkings and sayings about the injustices being experienced. A collective is also formed where a shift from "I" to "we" occurs, and momentum builds as more and more injustices are shared and discussed.

Oppressive Financial Practices Outside the Community

Oppressive financial practices occurring outside the Community include the process required to use a tax-exempt card by a First Nation person when purchasing goods

Table 2.1 Practice architectures within Community

Individual	Practice arrangements	Collective
Sayings and thinkings I don't think this is right? Why aren't my concerns being heard?	***Cultural-discursive arrangements*** Voicing and thinking about the injustice	We know this is not right The voices of many should not be ignored The voice of many coming together and sharing stories of unjust practices
Doings Starting a petition, requesting a meeting, organizing a protest	***Material-economic arrangements*** Petitions, meetings, protest	Act of resistance by carrying out a peaceful protest at the Band Office Signs, sounds, chairs and water
Relatings Individual Community members with a shared vision for democracy joining together	***Socio-political arrangements*** Hierarchical politics with those elected making decisions for other Community members instead of listening to the majority of the members	New connections formed based on a shared need for democracy

or services outside the Community. First Nation Canadians have what is referred to as a status card. This card permits the individual to make "tax-free" purchases. For example, the Ontario portion of 8% of the harmonized sales tax (HST) is exempt but the 5% of GST still needs to be paid. Individuals must present their status card when making a purchase at a store. This action signals an alternate process at the checkout, as the Canadian Government or provincial government requires certain paperwork to be completed when the card is used. The status cards can expire, despite individuals' heritage never changes. If the expired card is not renewed, the store can deny the individual the tax saving. The purchasing process can be time consuming and may result in employees questioning the First Nation Canadian's rights and/or denying access to the exemptions those rights allow.

Dental work provides another example of oppressive financial practices occurring outside Community. A First Nation person with a status card has treaty rights to dental work. However, the process for determining whether a certain procedure is covered is not transparent and is left in the hands of the dental office. Unfortunately, this can result in individuals being incorrectly informed that a certain procedure is not covered. The process of questioning and/or complaining is not well advertised to First Nations people.

Educators need an awareness of the injustices Community members face in order to develop questions for discussion and/or address the financial dilemmas individuals are exposed to. For example, a financial literacy education workshop that focuses on dental procedures covered for status indians may not be an obvious choice without such awareness. A positive outcome about providing a dental-related financial awareness workshop is the potential to enable agency among the participants. Table 2.2

Table 2.2 Practice architectures outside of Community

Individual	Practice arrangements	Collective
Sayings and thinkings I don't think this is right? Why did another Community member have their procedure covered?	***Cultural-discursive arrangements*** Voicing and thinking about the injustice	We know this is not right
Doings Paying the bill, seeking answers from the dental clinic, peers and the government department Deciding not to go through with dental procedures if eligibility is checked first with dentist prior and coverage is denied	***Material-economic arrangements*** The bill/invoice, the ineligibility notice	Questioning the dental procedure and reporting the organization
Relatings Does anyone even care? Does anyone else question this practice?	***Socio-political arrangements*** Hierarchy in the relationships. Someone else deciding what they think you deserve/do not deserve	Having agency as a collective to put an end to unjust financial practices

outlines the sayings, thinkings, doings and relatings involved in having a dental procedure cost denied when it should be covered. Since the process of determining eligibility is not transparent, the individual may pay the bill or decide not to go ahead with the procedure. Questioning the care received and deciding to change dentists may occur as an act of resistance. As a collective approach, individuals who have the procedure approved may join individuals who were denied the procedure to report the unjust practice to the government. The relationship with the dental clinic will change as individuals acquire agency and are not afraid to question transactions.

Recommendations for Overcoming Oppressive Financial Practices

Educating to overcome oppressive financial practices warrants exemplar stories shared by participants that illustrate their personal knowledge of unjust financial practices. Through personal experience and experience working with some Community members, I became aware of unjust financial practices.

This chapter has attempted to provide educators working in informal settings with examples of how financial literacy education can be used to create financial agency. The importance of meeting participant's needs by connecting content to local policies demonstrates an approach used for teaching financial literacy from an Indigenous

perspective. The following recommendations offer five steps to constrain oppressive financial practices and enable financial agency using an ignored request for a direct deposit as an example.

First, identify the oppressive financial practice. These can be identified where there are insufficient reasons for the inconveniences caused by the practice. In this case, the individual has no choice but to collect a cheque from the office, when a direct deposit is easier for all concerned.

Second, explain what makes the practice oppressive. Ignoring the direct deposit request allows the oppressor to assert power over the individual, forcing them to come to the office. Those oppressing then control the nature of the relationship with the individual who is seeking payment. Having to collect a cheque allows others to question the cheque's purpose and assert their authority in locating the cheque.

Third, demonstrate how to overcome the oppressive financial practice. In this context, ask for an explanation as to why the initial request was disregarded. If requests are continually ignored despite assurances that direct deposit is an option, then the oppressive practice needs to be explicitly described to the individual responsible for the oppressive practice.

Fourth, identify steps to transform the financial practice. Repeat the requests for direct deposits if the requests are ignored, ask why. Follow up and request that all payments be made via direct deposit. If requests continue to be denied, demand that the payments be processed by another area of the organization and/or that the option for alternative payment methods reflects the actual options.

Fifth, transform the financial practice. Uncovering the unjust practice and showing how to change it allows transformation to occur. The importance of persistence in trying to transform the financial practice is essential for undoing unjust practices, as is collective action to overcome unjust practices. Sometimes, collective powers are required to come together for more just practices.

Concluding Comments

Some First Nation communities in Canada are acquiring wealth through modern treaty settlements, yet poverty persists for many members living both on- and off-reserve. For individuals living on low incomes, the simplified notion that acquiring financial skills and knowledge will achieve financial well-being is a myth, not a reality. Understanding the needs and experiences of both on- and off-reserve members helps bring Indigenous perspectives into financial literacy education practices.

Financial literacy education *with* First Nation peoples instead of financial literacy education *for* First Nation peoples means educators working *with* participants to understand their interests and needs *then* designing content that reflects an understanding of the context or site. Education *for* is about educators deciding that they know what participants needs are, paying little attention to participant's interests and using generic content. A key difference between financial literacy education, *with* or *for* participants, is the development of activities that are designed based on needs identified by Community members.

Financial literacy education can play a critical role in developing participants agency in a financial context. Further research is required to see how developing financial agency could develop through financial literacy education. Financial literacy education can be used to combat oppressive financial practices both inside and outside First Nation communities. However, for financial practices to be transformed (from oppressive to rationale and just), the practice architectures that make these oppressive practices possible must also be transformed.

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Chapter 3
Re-Conceptualizing Physical Health Education Teacher Education Through Haudenosaunee Values

Derek Wasyliw and Lee Schaefer

Abstract Historically, Indigenous ways of knowing have been excluded from contemporary educational institutions and other Eurocentric knowledge systems. Currently school disengagement is one of the most complex, perennial and protracted social and educational problems, while also being the least understood amongst Canadian Indigenous populations. This chapter articulates our experiences conducting community based participatory research (CBPR) alongside the Kanien'kehá community of Kahnawà:ke. The purpose of the study was to gain a better understanding of how Indigenous ways of knowing may be both practically and theoretically included within physical health education teacher education (PHETE) programs to attend to culturally appropriate teaching and curriculum. Through a CBPR narrative inquiry approach, traditional Indigenous storytelling and conversations were utilized to better understand the deeply contextual nature of Haudenosaunee ways of knowing and the importance of representing this knowledge in a non-generalizable fashion.

Sewatahonhsiióhst ken'nikarihwéhsha sewakwé:kon.

Listen very carefully everyone for a short time.

Teiethinonhwerá:ton ne Onkwe'shón:'a. É:tho kati neniohtonháke ne onkwa'nikón:ra.

We continue to offer our greetings to all the people.

There, then that is the way it will be in our minds.

Teiethinonhwerá:ton ne Iethi'nihstenha tsi iohontsá:te. É:tho ká:ti neniohtonháke ne onkwa'nikónra.

We continue to offer our greetings to the Earth, Our Mother.

There, then that is the way it will be in our minds.

Teiethinonhwerá:ton ne Kahnekarónnion. É:tho ká:ti neniohtonháke ne onkwa'nikónra.

We continue to offer our greetings to the waters of all the rivers, lakes and streams.

There, then that is the way it will be in our minds.

Teiethinonhwerá:ton ne Kentson'shón:'a. É:tho ká:ti neniohtonháke ne onkwa'nikónra.

We continue to offer our greetings to all of the fish life.

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There, then that is the way it will be in our minds.

Teiethinonhwerá:ton ne Ononkhwa'shón:a. É:tho ká:ti neniohtonháke ne onkwa'nikónra.

We continue to offer our greetings to all the medicine.

There, then that is the way it will be in our minds.

Teiethinonhwerá:ton ne Otsinonwa'shón:'a. É:tho ká:ti neniohtonháke ne onkwa'nikónra.

We continue to offer our greetings to all the insect life.

There, then that is the way it will be in our minds.

Teiethinonhwerá:ton ne Tionhéhkwen. É:tho ká:ti neniohtonháke ne onkwa'nikónra.

We continue to offer our greetings to all the different natural foods.

There, then that is the way it will be in our minds.

Teiethinonhwerá:ton ne kahihshón:'a. É:tho ká:ti neniohtonháke ne onkwa'nikónra.

We continue to offer our greetings to all the fruit.

There, then that is the way it will be in our minds.

Teiethinonhwerá:ton ne Kontíriio. É:tho ká:ti neniohtonháke ne onkwa'nikónra.

We continue to offer our greetings to all the animals.

There, then that is the way it will be in our minds.

Teiethinonhwerá:ton ne Otsi'ten'okón:'a. É:tho ká:ti neniohtonháke ne onkwa'nikónra.

We continue to offer our greetings to all the birds.

There, then that is the way it will be in our minds.

Teiethinonhwerá:ton ne Karonta'shón:a. É:tho ká:ti neniohtonháke ne onkwa'nikónra.

We continue to offer our greetings to all the trees.

There, then that is the way it will be in our minds.

Teiethinonhwerá:ton ne Kaié:ri Nikawerá:ke. É:tho ká:ti neniohtonháke ne onkwa'nikónra.

We continue to offer our greetings to the four winds.

There, then that is the way it will be in our minds.

Teiethinonhwerá:ton ne Iethinisthénha tsi Iohonstá:ke. É:tho ká:ti neniohtonháke ne onkwa'nikónra.

We continue to offer our greetings to our Grandmother Moon.

There, then that is the way it will be in our minds.

Teiethinonhwerá:ton ne Shonkwahtsi'a Tiohkehnékha Karákhwa. É:tho ká:ti neniohtonháke ne onkwa'nikónra.

We continue to offer our greetings to our Elder Brother, the Sun.

There, then that is the way it will be in our minds.

Teiethinonhwerá:ton ne Iotsistohkwarónnion. É:tho ká:ti neniohtonháke ne onkwa'nikónra.

We continue to offer our greetings to all of the Stars.

There, then that is the way it will be in our minds.

Tethsitenonhwerá:ton ne Shonkwaia'tíson. É:tho ká:ti neniohtonháke ne onkwa'nikónra.

We continue to offer our greetings to the Creator.

There, then that is the way it will be in our minds.

We begin this chapter with the Ohén:ton Karihwatéhkwen (*Words Before All Else*), also known as the Thanksgiving Address to offer thanks to the Creator, all living,

spiritual entities and the community of Kahnawà:ke[1] (Thomas, 1988). We do this on the recommendation of two Haudenosaunee[2] knowledge holders,[3] Amelia Tekwatonti McGregor and Philip Maxie Deering, the participants in this study. As they explained, the Ohén:ton Karihwatéhkwen is traditionally used at the beginning of important meetings with the intention to "bring our minds together" to acknowledge our responsibility and gratefulness to all creation and evoke empathy to all the interwoven intricacies within the world (Freeman, 2015). Thus, from Amelia's and Philip's perspectives, the process of "bringing our minds together" implicates all involved to participate fully, to listen, and to contribute to the discussion in a meaningful manner. In this way, fairness, accountability, and equality become the foundational principles of research as a process of knowledge translation which considers current and future generations. Guidance such as above was invaluable throughout this project for a number of reasons, including carrying out this work in an ethical manner. Additionally, we chose to begin this way to show respect to our Kahnawà:ke colleagues, mentors, and friends to whom we are eternally grateful for allowing us to live alongside them in research and in life. Throughout this project, we focused on the principal of reciprocity, as we worked alongside the Kahnawà:ke Schools Diabetes Prevention Project (KSDPP) and KSDPP Community Advisory Board (CAB) to ensure that the research supported the principles and desires of the community.

This chapter aims to illustrate a narrative inquiry alongside two knowledge holders in Kahnawà:ke (Place on the Rapids), a Kanien'kehá:ka[4] (People of the Flint) community of approximately 7200 people along the St. Lawrence River[5] near the Lachine Rapids, 15 km south west of Montreal, Canada. The purpose of the study, in a response to calls for more infusion of Indigenous knowledges, was to gain a better understanding of how Indigenous ways of knowing may be both practically and theoretically included within physical health education teacher education (PHETE). Through a narrative inquiry, conversations were developed to better understand the deeply contextual, cultural, familial, political, geographical, and complex nature of Haudenosaunee (People of the Longhouse) ways of knowing and the importance of representing this knowledge in a non pan-Indigenized fashion. Given the exclusion of Indigenous voices and stories from contemporary educational institutions, it

[1]Pronounced [gahna' wa:ge] "the place on the rapids," one of the seven communities of the Kanien'kehá:ka (Kanien'kehá) Nation.

[2]The people of the Longhouse, comprised of the Nations of the Iroquois Confederacy (Kanien'kehá:ka, Oneida, Onondaga, Cayuga, Seneca, and Tuscarora).

[3]Knowledge holder (Traditional Person) is a term used in Kahnawakà:ke to identify a respected individual whom encompasses generations of knowledge embedded within the cultural and epistemological worldview of that particular Indigenous community. Different interpretations exist depending on the individual.

[4]Kanien'kehà:ka (The People of the Flint) who have been traditionally referred to as Mohawk by European settlers.

[5]Fresh water lakes and rivers such as the St. Lawrence River have long served the Kanien'kehá:ka people as not only a food source but also a place where transferrable cultural values, ceremony, language, and physical activity occur.

was our intention to sit with Philip's and Amelia's stories. We include their words throughout the chapter as guiding points for the complex process of incorporating Indigenous knowledge and perspectives into university policy, and PHETE curriculum and pedagogy (Gaudry & Lorenz, 2018; McLaughlin & Whatman, 2015; Smith, 2013).

Introduction to the Canadian Context

The international nature of this book, as well as the books focus on reconciliation, makes it important to briefly lay out the history of Indigenous Peoples in Canada. There are currently over 630 First Nations, speaking a combination of more than 60 distinct languages, within Canada (Belanger, 2010; Statistics Canada, 2019). Just as each Indigenous community is unique, so is their relationship with colonialism and reconciliation. Therefore, we gravitate toward Zembylas, Charalambous, and Charalambous' (2011) explanation that "reconciliation cannot be easily abstracted from the very particular context in which it is rooted" (p. 24). Thus, this project is grounded in the history and contextual realities of Kahnawà:ke. Kahnawà:ke is particularly significant to this study due to its leadership in Indigenous civil, political, and educational rights movements nationally and internationally. Kahnawà:ke is one of the six nations that together comprise the Haudenosaunee Confederacy—a historical alliance of Kanien'kehá:ka, Onondaga, Oneida, Cayuga, Seneca and Tuscarora.

Forged in 1570, the Haudenosaunee Confederacy is one of society's oldest participatory democracies and has been cited as a foundational underpinning to the United States Constitution (Grimes, 2017). Additionally, the Kanien'kehá:ka people were one of the first Canadian Indigenous populations to have contact with Europeans. Having such a long and storied history with colonialism, Kahnawà:kes' stories offer unique insights into progressive educational policies that are attempting to incorporate Haudenosaunee ways of knowing. The community's sophisticated system of Indigenous education centered around reflection, collective deliberation, and experiential learning (Tremblay, Martin, McComber, McGregor, & Macaulay, 2018) lead to the Indian Way School[6] (Morison, 2017); one of the first independent Indigenous education systems in North America. With a community belief that language is imperative to Indigenous education, pride in culture, and cultural sovereignty, Kahnawà:ke remains an advocate, and leader for Indigenous education systems and language revitalization (Morison, 2017). All current schools within Kahnawà:ke have a focus on cultural and linguistic immersion and academic excellence via a locally rooted, community-created curriculum. These are all important cultural components that have been dismissed within contemporary educational institutions and other

[6]Kahnawà:ke's Indian Way School was established in 1972 and is socially significant to Indigenous education as it inspired the Canadian government to implement the Indian Control of Indian Education Policy in 1973. The Kahnawà:ke Survival School was later established in protest of Bill 101 in Quebec which defined French, the language of the majority of the population, as the official language of the provincial government.

Eurocentric knowledge systems (Battiste, 2017; McKinley & Smith, 2019; Smith 2016).

Despite Canada being historically and internationally recognized as a nation which embraces multiculturalism as a core value, the Canadian government continues to remain colonial toward the Indigenous Peoples in Canada (Moore, Maxwell & Anderson, 2019). Since the Confederation of Canada in 1867, the relationship between Indigenous People and the Canadian government has been one-sided due to oppressive assimilatory policies and practices (Moore, Maxwell, & Anderson, 2019). One of the most pertinent policies to our research is the 1876 Indian Act, which attempted to assimilate Indigenous Peoples within Canada. The Indian Act currently dictates Indigenous rights and how Indigenous communities are operated. The Indian Act is most notably known for its historical dismantling of Indigenous self-governments, Indigenous services and education systems across Canada (Hurley, 2009; Moore, Maxwell, & Anderson, 2019; Virag, 2005). With Indigenous knowledge systems dismantled and outlawed, the Canadian government *utilized their* educational system to enforce a racist ideology to assimilate Indigenous youth into Eurocentric culture and ways of knowing (TRC, 2015). Official amendments to the Indian Act implemented laws that forced Indigenous youth to attend European schools which eventually lead to the formation of Indian Residential Schools (IRS).

The IRS and Day School system, which operated in Kahnawà:ke for over 120 years, was a mechanism in which the Canadian government attempted to assimilate Indigenous peoples into Euro-Canadian culture via government-sponsored religious schools (Bombay, Matheson & Anisman, 2013; Bombay, Matheson & Anisman, 2014). Although strictly enforced, IRS was largely ineffective at providing quality education to Indigenous young people; the ultimate goal was cultural genocide (Bombay, et al., 2013; Deiter, 1999; Friesen & Friesen, 2002). IRS also resulted in harsh living conditions, where on average 1 in every 25 adolescents attending IRS died. Others were subject to traumatic events including psychological, physical, and sexual abuse (TRC, 2015). The intergenerational trauma inflicted by IRS has had a ripple effect across Indigenous communities leading to national disparities in educational achievement, health, and poverty levels between Indigenous and non-Indigenous Canadians (Moore et al., 2019). To date, school disengagement remains one of the most complex, perennial, and protracted social and educational problems, while also being the least understood in the Indigenous population in Canada (Lewis, Schaefer, & Lessard, 2017).

The Truth and Reconciliation Commission of Canada (TRC) conducted a multi-year investigation into the residential school system in order to reconcile the impact of the IRS with the Indigenous population. The final report produced 94 Calls to Action with an important focus on the education sector. Most significant to this chapter and our work in Kahnawà:ke is the TRC's education for reconciliation section. This critically acknowledge that post-secondary institutions have played an inadequate role in preparing pre-service teachers to fulfill their responsibilities to integrate such Indigenous content and reconciliatory education into their practice (Lorusso, Watson, Brewer, Hubley, Lenders, & Pickett et al., 2019). Specifically, Call to Action #62 focused around providing "the necessary funding to post-secondary institutions to

educate teachers on how to integrate Indigenous knowledge and teaching methods into classrooms" (TRC, 2015, p. 238) helps to justify and situate the importance of this study.

Indigenizing the Academy

While Canadian post-secondary institutions are eager to address the TRC's Calls to Action (2015), the vast majority are currently struggling to ethically engage and incorporate Indigenous knowledge systems into a deeply Eurocentric system. The incorporation of Indigenous ways of knowing has been coined "Indigenization" by scholars working to decolonize Canadian post-secondary institutions (Kuokkanen, 2008). While not necessarily an agreed-upon concept, Gaudry and Lorenz (2018) state that there are three distinct approaches to "Indigenizing" or incorporating Indigenous ways of knowing into post-secondary institutions (see Fig. 3.1).

Gaudry and Lorenz (2018) argue "the Canadian academy has rhetorically adopted an aspirational vision of reconciliation indigenization, but is in fact largely committed to Indigenous inclusion; in essence, post-secondary institutions are attempting to merely increase the number of Indigenous people on campus without broader changes" (p. 4). With no generalizable model being adequate to Indigenize the academy, Canadian post-secondary institutions and PHETE programs alike are struggling to incorporate Indigenous knowledge and teaching methods in an authentic way.

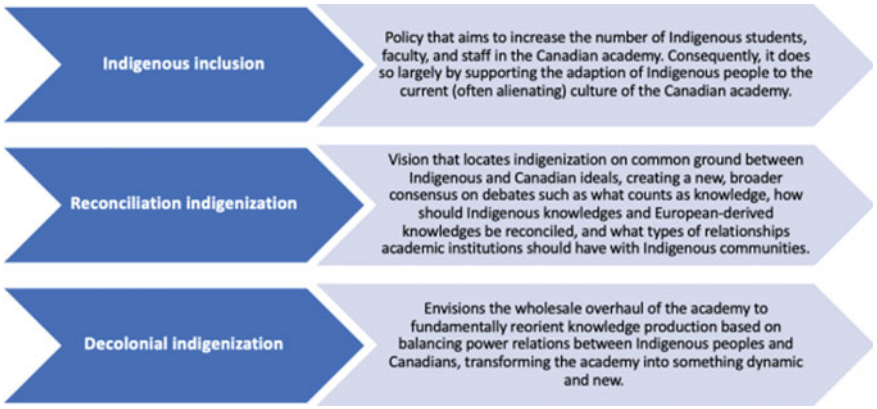


Fig. 3.1 Indigenization spectrum. Adapted from Gaudry and Lorenz (2018)

PHETE in the Shifting North American PHETE Paradigm

As society continues to evolve and become more diverse, the PHETE academic community remains divided on what constitutes "best practice" within teacher education programs. To date, these debates continue around how to best equip pre-service teachers with the knowledge and skills to teach, as well as the dispositions teachers should have in regard to a diversifying school environment (Cochran-Smith et al., 2009; Hill et al., 2018; Ovens et al., 2018). One such position is that when aspects like culturally relevant pedagogy, often included in social justice programs, become the focus of a teacher education program, subject matter knowledge and professional competence are lost through the programs' ambition to sway teacher candidates into a social justice ideology (Cochran-Smith, 2010). While opinions differ on whether social justice should be a part of teacher education at all, even those committed to social justice agendas are entangled in the political agendas, theoretical purposes of education, and the overall confusion of what a social justice agenda practically looks like. Without a clear definition, the term social justice is undertheorized and becoming widespread throughout academic landscapes with indefinite interpretations by the teacher education community (Hill et al., 2018; McDonald & Zeichner, 2009; North, 2006; Zeichner, 2006).

Whether the focus be on social justice, or the technocratic skills of teaching, the incorporation of Indigenous knowledge is often neglected. While scholars within PHETE are focusing their social justice efforts on challenging sexism, racism, ableism, homophobia, and identifying other populations (Schaefer, Lisahunter, & Murphy, 2017, p. 684), a call for an ideological repositioning toward race and culture within a social justice paradigm has emerged (Harrison & Clark, 2016; Hodge, 2014; Hodge, Brooks, & Harrison, 2013). Despite several scholars committing their research to race and social justice (Burden, Hodge, & Harrison, 2012; Chepyator-Thomson, You, & Russell, 2000; Culp, 2010; Halas, McRae, & Carpenter, 2013; Hodge, 2014), Harrison and Clark (2016) express their belief that the lack of commitment by mainstream North American PHETE programs is due to a value system that does not authentically value equity and social justice regarding race. To counter this, Harrison, Carson, and Burden (2010) suggest the pursuit of social justice through developing the cultural competency of physical education teachers. Despite becoming prominent topics within popular culture in recent years, culturally relevant teaching in regard to race and culture are still scarce within North American PHETE literature.

In the North American kinesiology and physical education literature, concepts related to race such as privilege and oppression are overlooked or generalized by more politically correct terminology such as multicultural issues, diversity, or social justice (Harrison & Clark, 2016). With the Indigenous population being the fastest growing sector of the Canadian population, several scholars advocate for Canadian researchers and educators to incorporate more culturally relevant pedagogies within physical education and PHETE programs (Halas, 2014; Halas, Butcher, Howe, & Clement, 2007; Halas et al., 2013; Halas, McRae, & Petherick, 2012; Statistics Canada, 2016).

The scant, but important, literature calls for more culturally safe physical activity promotion and programs (Halas et al., 2013) and expresses the benefits Indigenous knowledge and pedagogy can have on the wholistic wellness of all students and teachers (Halas et al., 2007, 2012, 2013; Kalyn, 2006). However, as Kalyn (2006), Robinson, Borden and Robinson (2013) and Lorusso et al. (2019) explain, Indigenous perspectives within Canada are currently being included in segregated ways such as a single dance, song, game lesson, or unit without any comprehension of the cultural context. These isolated lessons have been proven to be ineffective and express little to no attempt to shift the dominant discourse of the program or the structural issues that continue to marginalize other forms of knowing in academia (Gallavan, 2000). Given the complexity of the situation, Canadian physical education teachers and scholars require guidance around how to practically teach physical education in culturally relevant ways (Halas et al., 2012; Robinson, Barret, & Robinson, 2016).

Theoretical Framework

This study was a narrative inquiry into the experiences of two Indigenous knowledge holders in Kahnawà:ke. Narrative inquiry, from Clandinin and Connelly's (2000) framework is a social science research methodology that, put simply, is about understanding lived experience. Specifically, this study was grounded in John Dewey's theory of experience. A Deweyan theory of experience was well suited for this study for two main reasons. Firstly, Dewey's theory of experience states that "experience is the fundamental ontological category from which all inquiry—narrative or otherwise—proceeds" (Clandinin & Rosiek, 2007, p. 38). Secondly, Dewey describes experience as being continuous and interactive (Dewey, 1938). By valuing experience and stories, we refrained from seeing the participants' stories as reduced and certain; instead we focused on the rich contextual and complex nature of the experiences being shared through story. Stemming from Dewey's theory of experience, narrative inquirers are always attentive to the metaphorical three-dimensional space (Clandinin & Connelly, 2000). The three-dimensional narrative inquiry space encompasses, temporality (past, present, and future context of the experiences), sociality (personal and social conditions which comprise the experience), and place (concrete, physical, and topological landscape in which the experience takes place). The three-dimensional space components are woven throughout the entire study from research design to the analysis and creation of the final research texts. Extensively focusing on the three-dimensional space throughout the inquiry reinforces emphasis not only on the individuals experience but also on the "social, cultural, and institutional narratives within which individuals' experiences are constituted, expressed, shaped, and enacted" (Clandidin & Rosiek, 2007, p. 41). Thus, the three-dimensional space inherently highlights the relational ethics and the conception of living alongside

one another throughout the process of understanding complex experiences within rich contextual environments (Clandinin, Caine, & Lessard, 2018). Additionally, this narrative inquiry extended beyond institutional ethics boards and into the relational, ethical space that is interwoven into all aspects of the research (Clandinin & Connelly, 2000; Clandinin, 2013; Clandinin, Downey, & Schaefer, 2014). Reciprocity was at the forefront of this work as there was an emphasis on co-composing this work alongside community and the Kahnawà:ke Schools Diabetes Prevention Project (KSDPP) and the KSDPP Community Advisory Board (CAB). This reciprocity and collaboration was highlighted via the involvement of KSDPP and the KSDPP CAB in all aspects of the research process including the development of the research question, research methodology, the acquisition, analysis, and interpretation of data, and the dissemination of the experiences and results (KSDPP, 2007). Additionally, upon the completion of this research proposal, I (Derek) progressed through the Kahnawà:ke Schools Diabetes Prevention Project (KSDPP) Code of Research Ethics, which acknowledged how the research will benefit the community and other shareholders in the community. This included working within a community setting that fostered community involvement via actively participating in community advisory board (CAB) meetings[7] and maintaining constant dialogue with the KSDPP research council.

Methods

Field Texts: Gathering Data

Amelia and Philip, two knowledge holders with vast understandings of both community education and politics, volunteered to participate in the narrative inquiry. The relational commitment of narrative inquiry provided an opportunity to live alongside the participants through a series of social collaborations in different places over a span of 5 months during the fall of 2018 (Clandinin & Connelly, 2000). In-person conversations[8] ranging from two to four hours were recorded and then transcribed. Each conversation followed similar starting points to maintain consistency with each participant. The conversation themes are as followed:

[7]The PI (Derek) spent extensive time (150+ hours) in community volunteering and attending bi-weekly CAB meeting and KSDPP meetings.

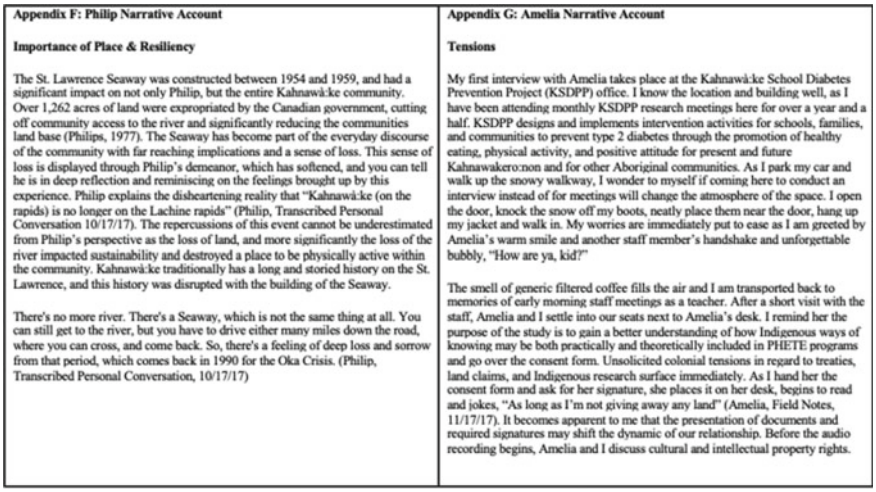
[8]I used a conversationalist approach. The rationale behind this was to avoid an authoritarian presence within the process that will diminish the relational bond between the researcher and researched (Clandinin & Connelly, 2000).

- **(Conversation 1)** participants created a timeline of experiences throughout their lives.
- (**Conversation 2)** participants were asked to bring an artifact that helped them to speak to their culture and how it shapes their lives.
- **(Conversation 3)** entailed the researcher and participant inquiring into Kahnawà:ke cultural beliefs in relation to health and physical activity.
- **(Conversation 4)** was an exploratory conversation revolving around how the participant's perceived of Kahnawà:ke cultural beliefs being interwoven into PHETE programs.

Although these themes were the starting points, each conversation meandered away from the topic, becoming richer and more meaningful. In addition to the recorded and transcribed conversations, other field texts were collected including photos, videos, audio reflections, and personal journal entries. We then considered the conversations and field texts alongside both Amelia and Philip using the three-dimensional narrative inquiry space. The inquiry followed a four-step process:

(a) The composition of the field texts into two narrative accounts. Narrative accounts are "interpretive constructions of individual experiences attentive to the three-dimensional inquiry space" (Clandinin et al., 2014, p. 51).
(b) The negotiation of the narrative accounts.[9] The negotiation of the narrative accounts alongside the participants attended to the commitment to relational ethics and allowed for further questions, further inquiry, and another opportunity to engage in a final research conversation. Each participants' narrative accounts were created separately by the primary investigator (Derek) then sent to the participant to review before a meeting was arranged for the participant's feedback and clarification. Figure 3.2 provides an exemplar section of a narrative account.
(c) Fluid reading was used to identify common threads in the narrative accounts. Fluid reading is the "dynamic reading and rereading of a set of field texts" (Christensen, 2013, p. 76) that explores the meaning and social significance of the experiences expressed (Clandinin & Connelly, 2000). In this project, we focused on the perception of health within Kahnawà:ke culture and the cultural beliefs surrounding physical health education as a way to better understand how these aspects may be incorporated into PHETE programming. These threads were then negotiated and co-composed with Amelia and Philip.
(d) Remaining attentive to the relational ethics of this work, the fourth level of inquiry involved presenting the research results back to the community including the KSDPP CAB and KSDPP research team. This allowed for another layer of response and acted as a knowledge translation opportunity. New knowledge gained from the research was shared in the public domain to aid in creating practical solutions to help improve the overall well-being of the community.

[9]Engaging in one-on-one conversations to ensure that the content and interpretation of the experiences are accurate.



Appendix F: Philip Narrative Account

Importance of Place & Resiliency

The St. Lawrence Seaway was constructed between 1954 and 1959, and had a significant impact on not only Philip, but the entire Kahnawà:ke community. Over 1,262 acres of land were expropriated by the Canadian government, cutting off community access to the river and significantly reducing the communities land base (Philips, 1977). The Seaway has become part of the everyday discourse of the community with far reaching implications and a sense of loss. This sense of loss is displayed through Philip's demeanor, which has softened, and you can tell he is in deep reflection and reminiscing on the feelings brought up by this experience. Philip explains the disheartening reality that "Kahnawà:ke (on the rapids) is no longer on the Lachine rapids" (Philip, Transcribed Personal Conversation 10/17/17). The repercussions of this event cannot be underestimated from Philip's perspective as the loss of land, and more significantly the loss of the river impacted sustainability and destroyed a place to be physically active within the community. Kahnawà:ke traditionally has a long and storied history on the St. Lawrence, and this history was disrupted with the building of the Seaway.

There's no more river. There's a Seaway, which is not the same thing at all. You can still get to the river, but you have to drive either many miles down the road, where you can cross, and come back. So, there's a feeling of deep loss and sorrow from that period, which comes back in 1990 for the Oka Crisis. (Philip, Transcribed Personal Conversation, 10/17/17)

Appendix G: Amelia Narrative Account

Tensions

My first interview with Amelia takes place at the Kahnawà:ke School Diabetes Prevention Project (KSDPP) office. I know the location and building well, as I have been attending monthly KSDPP research meetings here for over a year and a half. KSDPP designs and implements intervention activities for schools, families, and communities to prevent type 2 diabetes through the promotion of healthy eating, physical activity, and positive attitude for present and future Kahnawakero:non and for other Aboriginal communities. As I park my car and walk up the snowy walkway, I wonder to myself if coming here to conduct an interview instead of for meetings will change the atmosphere of the space. I open the door, knock the snow off my boots, neatly place them near the door, hang up my jacket and walk in. My worries are immediately put to ease as I am greeted by Amelia's warm smile and another staff member's handshake and unforgettable bubbly, "How are ya, kid?"

The smell of generic filtered coffee fills the air and I am transported back to memories of early morning staff meetings as a teacher. After a short visit with the staff, Amelia and I settle into our seats next to Amelia's desk. I remind her the purpose of the study is to gain a better understanding of how Indigenous ways of knowing may be both practically and theoretically included in PHETE programs and go over the consent form. Unsolicited colonial tensions in regard to treaties, land claims, and Indigenous research surface immediately. As I hand her the consent form and ask for her signature, she places it on her desk, begins to read and jokes, "As long as I'm not giving away any land" (Amelia, Field Notes, 11/17/17). It becomes apparent to me that the presentation of documents and required signatures may shift the dynamic of our relationship. Before the audio recording begins, Amelia and I discuss cultural and intellectual property rights.

Fig. 3.2 Two excerpts from Amelia and Philip's narrative accounts

Lessons Learned: For Now

Three of the most significant threads that emerged through our study are discussed here as individual concepts. However, we want to illustrate that these threads are interconnected, interwoven, and inseparable from each other.

A Story Before Time

"In Haudenosaunee culture we don't follow models we follow the basic principles" (Philip, field note, October 27, 2017). These principles, and the central tenants of Haudenosaunee worldview from Amelia and Philip's perspective, originate from the Haudenosaunee Creation Story. The Creation Story portrays the cosmos as divided into two worlds where there is a deep physical and spiritual correlation between all things connecting nature, wildlife, land, water, mind, body, and spirit. Amelia conveys this:

> We have two worlds: we have the spirit world, and we have the physical world. So we all come from the Spirit world to begin with. When we come into the physical world, we always come here trying to learn a lesson from that spirit world. (Amelia, transcribed personal conversation, December 15, 2017)

Amelia and Philip explained that the Creation Story has been passed down via oral tradition and sets a foundation of human existence, values, and morals through the worldview of the Haudenosaunee. "There are different ways of doing things and understanding the world. You know, because we're circle, and the world out there, a lot of people are linear" (Amelia, transcribed personal conversation, January

16, 2018). Amelia and Philip explain that the Creation Story is often orally told via traditional language and animation over a course of days, rather than written word in texts. I (Derek) made the connection here to how Amelia and Philip were trying to teach me about their culture. Our conversations often went in circles, which became part of the learning process. For example, the Creation Story was interwoven throughout all conversations but was originally shared with me off record in an intimate setting around kitchen tables with both Philip and Amelia. Amelia also shared with me a passage which provided further context:

> It was said that the earth began when Sky Woman who lived in the upper world peered through a hole in the sky and fell through to an endless sea. The animals saw her coming, so they took the soil from the bottom of the sea and spread it onto the back of a giant turtle to provide a safe place for her to land. This Turtle Island is now what we call North America. Sky woman had become pregnant before she fell. When she landed, she gave birth to a daughter. When the daughter grew into a young woman, she also became pregnant (by the West wind). She died while giving birth to twin boys. Sky Woman buried her daughter in the new earth. From her grave grew three sacred plants—corn, beans, and squash. These plants provided food for her sons, and later, for all of humanity. (Amelia, passage from artifact, January 16, 2018)

Entering this inquiry with very little knowledge regarding Haudenosaunee culture, Philip and Amelia's stories began to broaden my own stories of how we can know the world. This process shaped me in a way that allowed me to appreciate their stories, but also realize how different their stories are to my own. This was an important aspect of the inquiry as contextualizing their stories and ceremonies allowed them to become "humanized rather than exoticized" (Grimes, 2017, p. 8). An example of this would be coming to understand that the Haudenosaunee Creation Story is a shared activity as opposed to a solitary act with underpinnings of collaboration and equality. Reflecting on Amelia and Philip's words and my time spent with them, I developed the understanding that traditional stories, ceremonies, and experiential learning opportunities are all integral parts of the learning process. Amelia shares this with me through her words explaining "traditionally and culturally, you learned it [language, ceremonies, songs] orally first, and you come to understanding what that means by doing" (Amelia, transcribed personal conversation, December 15, 2017). Philip and Amelia shared the Creation Story in very different ways, and yet the themes of respect, love, generosity, responsibility, mindfulness, and gratefulness weaved their way through both retellings of the Creation Story.

Ohén:Ton Karihwatéhkwen: The Words that Come Before All Else

The Ohén:ton Karihwatéhkwen is the central address of the Haudensaunee that reflects the intertwined relationship between all living things, Mother Earth, and the cosmos. The Ohén:ton Karihwatéhkwen is not considered a prayer, as prayer has the western connotation of invoking god for intercession of time. Instead, Philip explained the Haudenosaunee say, "the words that come before all else" (Philip, field note, October 17, 2017), which is a communication between the human(s) and the

circle of life of the universe. The Ohén:ton Karihwatéhkwen teaches that although all life forms are different, they remain equal and are interdependent on each other. Therefore they must be valued and thanked. Philip shared a passage with me (Derek) to articulate this process:

> We understand that we share our time here with many different forms of life. From the smallest micro-organisms and the insects that live in the body of our Mother Earth, it is your responsibility to keep the body of our Mother healthy and strong. It is your duty to fight the effects of pollution. We know your task is great at this time because of the demands we, the two-legged, place upon you. And yet, despite this, you continue to struggle with the weight of the burden we place upon you. You fight to carry out your responsibilities and fulfil your obligations in accordance with the original instructions. Because of this, the cycle continues. And so it is, we turn our minds to you, we acknowledge you and we give thanks. So be it in our minds. (Philip, passage from artifact, Thanksgiving Address)

Similar to the Haudenosaunee Creation Story, the Ohén:ton Karihwatéhkwen, values our different strengths and weaknesses and reminds us that it is our responsibility to use our strengths for the betterment of the collective. The Ohén:ton Karihwatéhkwen celebrates individuality, mindfulness, and embraces diversity in a way that opens our minds to learn from what is different as opposed to attempting to make everything the same. Philip often spoke of how he had been influenced by a number of non-Indigenous scholars and teachers but also noted that "you don't have to be Indigenous to benefit from Indigenous ways of teaching" (Philip, field note, October 17, 2017). Often times in universities, in our case PHETE, we see certain types of knowledge take on hierarchical importance. Speaking from personal experience, we become hardened with stereotypes, daily routines, and a narrow vision of what is important. Philip's telling of the Thanksgiving Address, and his reflection on the story keeps us awake to how narrow the curriculum can become when we are simply worried about skilling up pre-service teachers (Downey, Schaefer, & Clandinin, 2015). Philip's words also urge us to consider the problematic nature of teaching pre-service teachers to be culturally relevant, without bringing their attention to the unedited truth about the land they are situated on and its historical and contemporary relationship to Indigenous culture.

Sha'tetionkwathe—We Are All the Same Height

Similar to the Ohén:ton Karihwatéhkwen, the thread of Sha'tetionkwathe illustrates the way in which Haudenosaunee ways of knowing value the experiences, individuality, giftedness, stories and the lived experiences of everyone. Philip spoke on several occasions of how he believes hierarchical curriculum-driven schools, such as PHETE programs, are contradictory to Haudenosaunee values of respecting everyone as knowledge holders.

> Everybody says it's the system, but nobody can identify, "Well, what's the system?" There's flaws in the system. Yeah, the flaw is that it's hierarchy. So basically, for me, curriculum-driven education is, by definition, hierarchy. Somebody's sitting someplace in Quebec City, Ottawa, or whatever, Regina—I don't know—has decided what you should learn, and when, and how. (Philip, transcribed personal conversation, October 17, 2017)

From Philip's perspective, everyday hierarchical components within schools that do not value student autonomy—such as curriculum, teaching strategies, and evaluation—play a significant role in devaluing students as gifted and generating inequalities through a deficit mindset.

> So they have to be taught. And this is where we end up with different school philosophies. We must have curriculum because how else would the child have any idea where to go? They couldn't imagine their way on their own even. (Philip, transcribed personal conversation, October 17, 2017)

Philip's sarcastic fragment above illustrates how narrow our thinking becomes when students are always positioned as deficit. From this deficit lens, students are seen as lacking curriculum knowledge and teachers must provide it for them. If we are always giving students knowledge, we may not focus on the knowledge they already have. Although curriculum is a broad term, and some may conceptualize it as everything to do with teaching, in most cases, the curriculum is a set of outcomes in a variety of disciplines that makes up the knowledge seen as important in schools. Sha'tetionkwathe bumps with this dominant story of curriculum and, as Philip explains, prescribes a much broader notion of knowledge transmission. It embraces *how* knowledge is gained, *when* it is gained and *by whom* it is gained. Considering curriculum in a narrow way, immediately presupposes milestones where kids should be at certain times. Philip describes this as "a metaphorical dragging from point A to point B, with a test at the end" (Philip, transcribed personal conversation, December 15, 2017). In contrast, the Sha'tetionkwathe positions knowledge in a much more fluid, less linear way. This way of viewing the curriculum shifts everything from who becomes a knowledge holder and decides which knowledge is important, to who gets to evaluate this knowledge and specifically how this knowledge is evaluated.

Both Amelia and Philip have immense experience within the Kahnawà:ke education sector. Hence, they both focused on the strengths of Sha'tetionkwathe in action within the community. As a past administrator in Kahnawà:ke, Philip expanded on his experiences of pragmatically implementing the concept of Sha'tetionkwathe. "Indian Way School went well beyond the Free School system. It was more of a Sha'tetionkwathe', [We are all the same height] School" (Philip, transcribed personal conversation, June 14, 2018). He recalls viewing students as gifted and placed a high importance on relationships.

> They [other schools] were under so much pressure to follow the curriculum they would sometimes leave students behind. In Indian Way school, when a student was falling behind, you stopped. You didn't continue to follow the curriculum even though the schools followed the curriculum, it's still the student at the center, you know. So if the students fall behind in other schools, it's too bad you don't have time for that. Maybe you could send them to the office or something, to the specialists or something but in Indian Way School you take care of that. And from the parents' perspectives, they would tell me Indian Way School took care of issues that no other schools would touch. (Philip, transcribed personal conversation, October 17, 2017)

While positioning the student at the center of their learning seems cliché, positioning them in the middle allows for an understanding that relationships will allow

you to see what students do not know, what they do know and how that can be shared with teachers, with peers and with the community.

> They have to have input into whatever you're trying to get them to do. If it comes more from them, you've empowered them to make a decision for themselves. But they also become mentors for other students in a positive role model scenario. That's where that comes from and it's so much better than, dragging them by the scruff of their neck and making them or forcing them to do something. (Amelia, transcribed personal conversation, January 16, 2018)

Learning from Philip and Amelia raises the possibility of shifting to adopt a Sha'tetionkwathe approach to education. Through this process, students become the teachers, and both teachers and students are equally responsible for learning from each other. Amelia and Philips' focus around teaching to the wholistic health of the student shares a relational and humanistic endeavor that often times seems to be lost within the grand narratives of what education is and ought to be. It becomes quite easy to understand why Sha'tetionkwathe bumps hard with a hierarchical system that seldom places individuals, within a school, at the same height.

Discussion

Considering the three threads—*A Story before time*, *Words before all else* and *We are all the same height*—raised a number of new questions, rather than providing concrete answers. We entered the study seeking examples, or practical applications that could be implemented into PHETE programs. However, as the inquiry proceeded it became clear that Philip and Amelia were not going to tell us, in a linear way at least, what we should do. For this reason given the guidelines for the chapter, we attempted to include their stories and experiences and leave the interpretation up to the reader in regards to what this might mean for PHETE programs and education as a whole.

As the literature reiterates, PHETE programs are vastly different internationally and across Canada. These programs vary in curricula, structure, field experience length, philosophy and organization. These programs include teachers who have complex backgrounds with varying levels of expertise and experiences within physical and health education (Schaefer & Clandinin, 2011). With a lack of consensus on what quality teaching in PHETE even entails, it is clear that PHETE programs are in the midst of negotiating their own identities and values. Although struggling with an "identity crisis" (Belcher, 2008), the literature has begun to show a consensus that PHETE programs need to shift to accommodate a new generation of beginning teachers and diverse students (Belcher, 2008; Melnychuk, Robinson, Lu, Chorney, & Randall, 2011; Schaefer et al., 2017; Siedentop & Locke 1997; Tinning, 2004; Tinning, Macdonald, Wright, & Hickey, 2006). Current post-modern times in Canada require that pre-service teachers learn to both personally and socially challenge the dominant discourses (Melnychuk, 2003; Melnychuk et al., 2011). Despite this, North American

PHETE programs continue to place high emphasis on sport, fitness, and kinesiology classes, while neglecting critical pedagogy and social justice issues (Ayers & Housner, 2008; Ovens et al., 2018). PHETE literature and programming continue to be dismissive of Indigenous peoples' knowledges and pedagogies—a trend that remains despite the TRC that includes Canada's explicit calls for action to reduce the Indigenous/non-Indigenous gaps in education and to develop more culturally appropriate educational programming for future pedagogues and their students.

When thinking forward, scholars may benefit from turning to researchers from Australia and New Zealand contexts for insights. Although different Indigenous communities cannot be generalized, there is merit in exploring how other post-colonial nations have looked at embedding Indigenous knowledges into different sectors of education. From an Australian perspective, Dinan Thompson, Meldrum and Sellwood (2014) suggested utilizing inclusive pedagogies and inquiry models to engage with Indigenous culture. By doing so this may present an opportunity for inclusion and reconciliation through a better understanding of, and respect for, Indigenous cultures. Additionally, education which includes Indigenous knowledge systems also refrains from excluding other ways of knowing and ensures all students have the opportunity to be exposed, not only to the strengths of Indigenous culture, but to a variety of cultures. Thus, Indigenous knowledges encourage a culturally responsive instruction which honors and values the strengths of differing viewpoints and ways of knowing.

The Mäori Indigenous context provides a practical example of how Eurocentric PHETE curriculums have been altered to benefit both Indigenous and non-Indigenous students (Fitzpatrick & Burrows, 2017). In Angus Macfarlane's book *Kia hiwa ra! Listen to culture - Māori students' plea to educators* (2004) the primary recommendation is for teachers and pre-service teachers to be attentive to the diverse cultural landscape of their classrooms. Producing this inclusive space directly links to Amelia and Philip's words and to research which concludes that students with a sense of belonging and connectedness at school thrive in their learning, are more engaged, and attend school more often (Alberta Education, 2015). Macfarlane's (2004) work resonates with Amelia and Philip's words as it urges teachers to place a primacy on relationships and build upon students' cultural and experiential strengths to facilitate success via an Indigenous lens. Indigenous voices and viewpoints surrounding education are diverse, multifaceted, and complex; they are locally rooted in the fabric of the community and must be incorporated into educational programming (i.e., PHETE) with this in mind. Thus, the building of relationships, both personal and professional can lead to a better understanding of the complexities and intricacies of Indigenous cultures, knowledges and identities. Investing in these relationships may offer an opportunity to better explore how Indigenous knowledges can inform education and PHETE programs on appropriate pedagogies to support and enhance learning for all students (Moreton-Robinson, Singh, Kolopenuk & Robinson, 2012). Additionally, multiple scholars, pedagogues, and Indigenous community leaders have advocated for primacy to be placed on Indigenous voices, contexts and histories to better understand the nuance and complexity involved when attempting to move past

tokenistic representations of Indigenaity (Battiste, 2017; Denzin, Lincoln, & Smith, 2008; Kovach, 2015; Madden, 2015; Smith, 2013; Tuck & Yang, 2012).

Our work adds to the limited research that draws on including Indigenous ways of knowing into PHETE programs in Canada. Through our review of the literature, we discovered the majority of Indigenous physical education scholarships in Canada are limited to a small cluster of academics (Halas et al., 2012, 2013; Kalyn, 2014; Robinson et al., 2013). Halas et al.'s (2012) culturally relevant physical education teaching model is one of the studies we found around incorporating more culturally relevant forms of pedagogy into PHETE within Canada. Our findings relate to Halas et al.'s (2012) model, particularly the focus around creating meaningful and relevant curriculum. Like the principles of Ohén:ton Karihwatéhkwen and Sha'tetionkwathe, Halas et al's work promotes an attention to the students' lives that then enables the teacher to understand the significance of what is actually relevant to pre-service teachers and the students they teach. An extension to this, Amelia and Philip's words advise to position students and teachers at the same height, to have PHETE programs situate pre-service teachers as knowledge holders and allow them to be involved in the creation of what they see as relevant curriculum.

Although Halas et al.'s (2012) model provides a solid starting point, Amelia and Philip, along with other scholars (Battiste, 2017; Gaudry & Lorenz, 2018; Robinson et al., 2013) are wary of one-size-fits-all approaches that attempt to encompass Indigenous knowledge. Our findings resonate with Halas et al.'s (2012) work and advocate for a wholistic approach to education; where teachers are allies who understand students' day-to-day cultural landscapes and adopt instruction to provide meaningful and relevant curriculum. Indigenous knowledges are complex, nuanced and are, for the Haudenosaunee, locally-grounded in the fabric of the land, water and community. Amelia and Philip's words pushed back against conceptualizations of Indigenous physical culture as homogenous. Instead, they emphasized its innovation and fluidity which welcome other ways of knowing as opposed to excluding them.

Throughout the inquiry, Amelia and Philip advised against generalizable models which encompassed "Indigenous ways of knowing." Their words illustrated that Haudenosaunee ways of knowing alone are complex, land based, place based, and culturally diverse. This is important when considering the incorporation of Indigenous ways of knowing in Canadian educational institutions such as PHETE programs. With over 630 First Nations speaking more than 60 distinct languages, we encourage each individual PHETE program to situate itself within the deeply contextual, cultural, familial, political, and geographical histories of their region. By doing so, PHETE programs can avoid the practice of pan-Indigenizing, simplifying, and generalizing Indigenous ways of knowing.

Philip and Amelia's recommendations for PHETE programs to situate themselves in place resonates with Gutiérrezs' (2008) notion that the development of culturally relevant teachers begins when teachers, in this case, PE teachers "are grounded in the historical and current particulars of students' everyday lives, while at the same time oriented toward an imagined possible future" (Gutiérrez, 2008, p. 154). Diaz-Rico and Weed (2010) argue that a person's culture is unique beyond elements of food, dress, traditional games, and celebration. Engaging in conversation with

Amelia and Philip, we came to understand that Indigenous ways of knowing are multi-faceted and complex constructs that are conceived and expressed in a variety of different ways depending on the history and geographical circumstances of each individual Indigenous culture. Given this diversity, it becomes more problematic to see Indigenous knowledge and cultural activities being placed under the same tokenistic umbrella (e.g., Pow-wow, lacrosse). This reinforces Kalyn (2006) and Lorusso et al.'s (2019) claim that there is a need for PHETE programming to pay close attention to cultural context and the implications of place and land. The first step in moving away from tokenistic incorporation is the development of relationships with Indigenous partners in Indigenous communities.

Collaboration with Indigenous partners requires a primacy on place, Indigenous voice, and history if we are to enable a more nuanced and complex understanding of Indigeneity (Battiste, 2017; Denzin et al., 2008; Kovach, 2015; Madden, 2015; Smith, 2013; Tuck & Yang, 2012). As for the current landscape of universities within Canada, Gaudry, and Lorenz (2018) conclude that Indigenous inclusion policies have begun to shift the landscape of Canadian universities, but reconciliation indigenization initiatives within Canadian universities remain unseen. Based on our experiences working within the rich contextual and historical landscape of Kahnawà:ke, we can relate to Canadian universities and PHETE programs alike, who are struggling to incorporate Indigenous knowledge and teaching methods in an authentic way. As PHETE scholars argue, anything other than Eurocentric norms in relation to the fixed portfolio of a sporty, fit, white PHETE teacher is seen as deficiency (Azzarito, 2009; Garrett & Wrench, 2016; Whatman, Quennerstedt, & McLaughlin, 2017; Wrench & Garrett, 2012). Philip and Amelia's stories surrounding Indigenous ways of knowing help us to see the richness that comes from valuing diversity and other ways of knowing and advocate for the incorporation of these ways of knowing into PHETE.

This study echoes the calls of the Truth and Reconciliation Commission of Canada[10] for universities and PHETE programs alike, to prioritize Indigenous ways of knowing in the most earnest and explicit way. Although we have not offered actionable aspects that could be immediately incorporated into PHETE programs, we hope we have offered the reader the opportunity to learn from the stories being shared in a transactional way. Amelia and Philip's words opened the door for complicated questions around the types of relationships fostered between universities and Indigenous communities in order to authentically incorporate Indigenous knowledge within the current systems. Furthermore, Amelia and Philip's words encouraged PHETE programs to undertake a reflexive process that allows them to implicate themselves in the reconciliatory process. By consulting with community knowledge holders of the area, PHETE programs may better understand their personal relationship to colonization and attend to an ethical reconciliation that incorporates Indigenous ways of knowing alongside the peoples and places upon which PHETE programs are situated. Once these bridges and relationships are built, PHETE programs can then ethically

[10] A commission which conducted a multi-year investigation into the residential schools system in Canada.

move forward alongside community in determining how Indigenous knowledge can both strengthen and support the education of future physical educators.

In closing, we would like to thank those who contributed to the coordination and success of this work and pay our respect to the land on which these conversations took place. We would also like to offer our thanks to you, the reader, for taking the time to engage with the lessons being shared and allowing our minds to become one, if only for a little while. It is our hope that you will metaphorically pick up, analyze, interpret, criticize, and, in a transactional way, learn from the stories on these pages.

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Part III
Indigenizing Practice—Case Studies from School Settings

Chapter 4
Community and School Collaboration: Initiatives that Enable Primary Students to Embed Indigenous Knowledges

Elizabeth Tailby, Susan Whatman, and Alison Sammel

Abstract This chapter shares a reflexive narrative account among the authors of a project whereby Aboriginal and Torres Strait Islander primary (or elementary) school students in Queensland, Australia, modeled relational and respectful engagement between Indigenous knowledge systems and Western science knowledge. We engage in this retrospective conversation in order to highlight the design features of a Government-funded Indigenous student engagement initiative called the *iDream* Challenge, including what made it effective in its approach. This chapter illustrates how the students attempted and succeeded in embedding Indigenous perspectives in Western science education. These students modeled pedagogy that all educators can learn from.

Introduction

This chapter shares a reflexive narrative account among the authors of a project whereby Aboriginal and Torres Strait Islander primary (or elementary) school students in Queensland, Australia, modeled relational and respectful engagement between Indigenous knowledge systems (hereafter referred to as IKS[1]) and Western science knowledge (WSK). As a part of a state-wide tertiary aspirations scheme called the *iDream Challenge,* which was in part a university-government partnership scheme, participating students were required to create a multimedia product that integrated the perspectives of local IKS and WSK around a particular topic or issue. This chapter is a retrospective critique from two of the co-creators of the challenge and the Education Department senior education consultant of the way the

[1]It exists in relation and sometimes tension with an emerging body of international literature which refers to the knowledges held by First Nations peoples around the world as "Indigenous knowledges." We use the terms Indigenous knowledges and Indigenous knowledge systems (IKS) to indicate how we believe the work described in this chapter aligns with this international academy—see, for example, Nakata (2002).

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Science Challenge in particular unfolded, and of the overall *iDream Challenge* program itself. The *iDream Challenge* invited students to co-research and share stories from their community around animals or "entities" (Martin, 2008) misunderstood by Western society, such as crocodiles, bats, and sharks. The research and dissemination processes and digital artifacts produced by the students in partnership with Elders and other community members show that the students were able to navigate this intercultural terrain and demonstrate how IKS and WKS can co-exist, and complement learning, providing different educational insights in the ways such animals can be understood and valued. These young learners modeled for their teachers how to engage with Indigenous knowledges and find ways to bring them to life in mainstream school learning experiences—in ways that many non-Indigenous teachers are yet to attempt. The narrative approach adapted from the narrative methods of Clandinin and Connelly (2000) in this chapter enabled the reflections of the Indigenous[2] mentor and non-Indigenous mentors of this project to be interwoven with the analyses of the content of 10 audiovisual presentations featured in the project. A detailed critique of the Science Challenge has been reported elsewhere (Sammel & Whatman, 2018), but this chapter focuses upon the processes modeled within it and their potential for embedding Aboriginal and Torres Strait Islander peoples' perspectives, histories, cultures, and knowledges. Beth, as Senior Education Officer, was responsible for the strategic implementation of such perspectives and knowledges into school curricula for this particular region of Queensland in which many *iDream Challenge* schools and student participants were located (see Tailby, 2012). As such, Beth was a senior Indigenous curriculum and pedagogy advisor to all the schools and teachers in the region and a critical friend of the project. Susan and Alison were university educators who designed four of the state-wide multimedia challenge topics and the evaluative criteria that encapsulated the requirements to model respectful, relational, cross-cultural teaching and learning approaches when completing the challenge. The chapter includes selected vignettes from this three-way, retrospective conversation to highlight the critical moments that shaped the project and to foreground the commonalities in the approaches taken by students. We engage in this retrospective conversation firstly in order to highlight the design features of the *iDream Challenge* that made it effective in its approach, and secondly, to illustrate how the students attempted and succeeded in embedding Indigenous knowledges in a particular case study here of Western science education in ways from which *all* educators can learn.

[2]In Queensland, Australia, it is preferable to use the phrase "Aboriginal and Torres Strait Islander peoples" over "Indigenous peoples." However, for consistency with the use of the term Indigenous knowledges throughout this book, we also will refer to Indigenous peoples, taken to mean Aboriginal peoples and Torres Strait Islander peoples. In this case, our mentor identifies as Aboriginal (Kamilaroi).

Tertiary Aspiration Programs for Aboriginal and Torres Strait Islander Students

Over the last four decades, there has been evidence of increasing policy support and curricular guidance for embedding Aboriginal and Torres Strait Islander peoples' philosophies, perspectives, and knowledges, otherwise known as Indigenous knowledges systems or IKS, in Australian curricula and pedagogy (cf. Berendt, Larkin, Griew, & Kelly, 2012; Bin Sallik, 1990, 2000; Nakata, 2011; Tripcony, 2000; and Whatman & Duncan, 2012) and professional teaching standards (Ma Rhea, Anderson, & Atkinson, 2012). The growing support for embedding IKS in policy and national curriculum texts is reflective of widespread recognition that IKS has been neglected in Western forms of education and should be restored in national curricula for all students (Macfarlane, Glynn, Grace, Penetito, & Bateman, 2008; Ma Rhea et al., 2012; McLaughlin & Whatman, 2015). This has created new impetus for school communities to provide opportunities for students to engage with IKS. It is thus developed from the premise that IKS needs to be centrally placed in all levels of schooling for all students as valuable and legitimate content within the Australian Curriculum. Finding new and innovative ways to embed IKS not only allows Aboriginal and Torres Strait students to see themselves, their knowledge, and their world in their formal learning, but also allows non-Indigenous students to see themselves in relationship with others and the Australian community (Phillips, 2012). However, we acknowledge there are uncertainties and tensions around embedding IKS in schools, and these are founded on historical hegemonic priorities, policies, practices, and experiences. The project shared in this chapter offers one example of how primary school students negotiated these complexities and tensions and blended IKS and WSK in order to better understand a question posed to them in a tertiary pathways program called the *iDream challenge.*

What Was the iDream Challenge?

Susan: What's really interesting I think for you is that you've been around it as someone in the Department, someone working in the academic space *and* reflecting on the project and representing it as a conference paper. So, what did you think was unique or different perhaps about the *iDream* project when you think about all the other things the Department has done before?
Beth: I think, at the time that project was run, they hadn't done anything around … creating a space where they could use technology to express their identity and then take it back to a school and share it … and it was run by Aboriginal people. So, at that time, they didn't have anything like that so that was probably what was unique about it. That was good.

Too numerous to mention every initiative here (cf. Burridge & Chodkiewicz, 2015), the Queensland Government most recently implemented the Embedding Aboriginal and Torres Strait Islander Perspectives in schools (EATSIPS) (Department of Education and Training [DET], 2011) policy, from which the *iDream Challenge* was developed. The Indigenous Schooling Support Unit for Queensland was responsible for launching the *iDream Challenge* in 2011 for Aboriginal and Torres Strait Islander students from year levels 4 to 7. It was designed to support the implementation of EATSIPS by building student capacity to achieve academically by working in teams "to develop skills such as resilience, persistence, creativity, confidence, goal setting and team building while participating in challenges with an Aboriginal and/or Torres Strait Islander perspective" (DET, 2011). The project also aimed to provide clear pathways for Aboriginal and Torres Strait Islander students to university and to nurture high expectations of themselves.

Susan: The *iDream Challenge* really appealed to me as someone who has witnessed the launch and demise of many Indigenous tertiary aspiration programs since I started working in Indigenous tertiary education in the early 1990s. This one was different. It seemed to take account for why other programs were unsustainable and returned the decision-making power to students and communities.

Aboriginal and Torres Strait Islander students in this region of Queensland (South East) represent 8.5% of all Aboriginal and Torres Strait Islander students enrolled in Queensland state schools[3] (February 2014 data collection; DET, 2014), which is noticeably greater than the proportion of the national population, which stands around 2.8% (Australian Bureau of Statistics, 2016). While many Aboriginal and Torres Strait Islander education projects are often geared toward rural and remote students (cf. Altman & Fogarty, 2010), this program catered for a significant cohort of students in urban and urban fringe areas. In essence, the *iDream Challenge* brought primary schools and Indigenous primary school students into communication with universities, allowing universities to deliver a new form of market outreach (universities are *always* interested in attracting more Indigenous students to their campuses), and primary school students the opportunity to form potentially long-term relationships with post-compulsory schooling providers:

Susan: We supplied prizes, we did all the in-kind work for designing challenges and … you'd hand it back to the people in the university and say "tell us who's won your challenge," but there was a lot of things about that which I thought were really good partnership approaches, like really making universities, for example, put their money on the table to say "we'll support this initiative in schools."

Beth: And I think that was the start of that concept around introducing university to (Indigenous primary) students, where it didn't happen before that … that hadn't happened before that I know of … they do now but didn't back then.

[3]State schools are Government funded and operated. A primary school is also known as an elementary school and enrolls students from Prep or Foundation to Grade 6 (typically with students aged 5–12 years). A secondary or high school enrolls students from Grades 7 to 12 (typically with students aged 12–18 years).

The challenges we set for the students over the 3 years of the program (2011–2014) required them to conceptualize, plan, script, film, edit, and submit a short DVD (to a maximum of 5 min) addressing the nominated topic with the support of their school-based facilitator, either a classroom teacher or teacher aide, depending on the resourcing available at the school. This chapter takes a closer look at one of four challenges co-designed by the authors, the Science Challenge of "Misunderstood Creatures." Students were asked to investigate a Western scientific understanding of an animal/creature which would be hegemonically typical in the Australian Curriculum, and could also draw upon typical media or popular culture representations, and the Aboriginal and/or Torres Strait Islander understanding of that animal/creature, drawn from the knowledge within their community. The aim of this challenge was to encourage students to investigate, value, and respect ways of knowing, of two (or more) knowledge systems.

Alison: We envisioned this challenge to create a place where the epistemologies and stories of IKS and Science could be exchanged, discussed, and co-exist by providing opportunities to explore multiple contextual understandings of phenomenon, rather than just seeking to communicate the "right" Western Science story.

In this particular challenge, the students were invited to choose an animal or creature that normally receives "bad press" and to share local Indigenous knowledge and WSK about those creatures. So, for example, the winning school of this particular challenge nominated the crocodile as their misunderstood creature, critiquing in their video how crocodiles are represented in both these knowledge systems. They scripted a high-quality DVD that included a crocodile dance performance from peers who were given (and included acknowledgment of) permission to share their knowledge of the dance, as well as an intriguing blend of Aboriginal knowledges about the crocodile as a respected entity and non-Indigenous "facts" about the importance of the crocodile to the Australian ecosystem.

The Ethics of Representation

Evelyn Araluen Corr has noted that, since colonization, images of Aboriginal people and Torres Strait Islanders that end up in "the archive" have not served their interests, whereby the "construction and circulation of tropes, stereotypes, caricatures and catalogs since first contact with Europeans denies … the right to experience and articulate contemporary and ancestral heterogeneities" (Araluen Corr, 2018, p. 487). She also noted that such an archive is potentially a source of family history with a restorative function and often supported by community and government initiatives to reclaim control of Indigenous representation in media (p. 487). The *iDream Challenge* was a Government-sponsored, university-community partnership that attempted to hand control of audiovisual representation to Aboriginal and Torres Strait Islander youth and their extended community members. It honored the children's human rights to represent their views on the topics, but also required the kinds of community negotiation that any educator would also be required to undertake.

The ethical considerations around the reporting of this project are a perfect illustration of the tensions and agency of competing knowledge systems in what Martin Nakata calls "the cultural interface" (Nakata, 2002, 2007), which was explained earlier in Chap. 1. As no actual interviews with people were included in the research evaluation by the university educators, only reviewing of archival footage, our university did not require formal ethical clearance. The development of the program meant that the concept received approval and endorsement from appropriate Indigenous education departments and the Minister for Education. Permissions for interviews with Elders and students to be recorded, and subsequent audiovisual media release permission forms, were handled at each individual school, with consent forms held by the Department of Education. Everything was conducted *ethically* according to the legal and ethical norms of Western education systems. But, would it also meet Aboriginal and Torres Strait Islander protocols? To facilitate the need to address relevant protocols, we added an extra dimension to our challenge criteria based on our understanding, just as Araluen Corr (2018) has highlighted that particular readings of the representation of Aboriginal and Torres Strait Islander peoples and cultures would be enabled by subsequent viewings of the submissions by different audiences both at the time of production and in the future. Thus, each school located in different communities across Queensland was given clear guidelines that their submissions should honor and respect the right for Indigenous people to control their representation, drawing upon broader ethical guidelines in Aboriginal and Torres Strait Islander research, including the right to have their knowledges claimed and identified in wider dissemination (Martin, 2008; National Health and Medical Research Council of Australia [NHMRC], 2003).The first such guideline was that "appropriate Community Elder permission to use terminology and Indigenous knowledge from your local area/country" must be included, via recording in the audiovisual material itself or listed in the credits. From our perspective, documenting community permission to reproduce the story, and to "represent it" in a particular way, was important for future viewings and potential adoption in classroom contexts, indeed, as future family archive resources. However, recording such permission was never a straightforward solution to ensure the Western construct of consent, or to respect protocols, or even honor intellectual property.

Susan: (Do you) think it's about people being challenging whether or not those children had the right, or those people had the right, to tell those stories or share those stories?

Beth: Sometimes, there would be political tension depending on who that storyteller is, so, there would be fear around that. The other thing is that some of our Elders would like to give the story, give consent, have it written down and that's fine, but just don't want to go on camera…. it depends on the region too. Some regions have people in their regional offices who manage *iDream*, and they may have felt like they were gatekeepers of the knowledge (but) they didn't really have the right.

Thus, it may well be that permission to re-tell the story was given, but the knowledge holder was not actually the one doing the telling. Thus, the assumed reading or representation of that person as the Elder or even as the designated "knowledge

holder," as defined by Wasyliw and Schaefer in Chap. 3, may not be accurate, which does have implications for future viewing and uptake in educational settings.

One more consideration arises from the Association of Moving Image Archivists (AMIA) ethical guidelines, reminding us that we must "respect the value of moving images for their cultural, historical and/or artistic significance as a primary goal" (Rao, 2010, p. 106). Each stakeholder in the creation of the videos brought a different sense of purpose, and there would always need to be ongoing ethical negotiations arising from community concerns about the future purposes for which these archives may be used. We, as authors, saw their potential as educational artifacts to support embedding Aboriginal and Torres Strait Islander perspectives and knowledges in the Australian Curriculum, which is an expectation for teacher professional practice. The students created the videos to demonstrate their understanding of a key question about misunderstood creatures, using their information technology skills, ultimately to win a competition on behalf of their school. The Elders and knowledge holders who gave consent to record their knowledge may have had multiple reasons for doing so, possibly for regaining control or "sovereignty" (Gaudry & Lorenz, 2018) over the sharing of their histories, cultures, and knowledges as a community resource and re-centering such knowledges in the Australian Curriculum (Phillips, 2012). As productions owned by the Department of Education and Training, the videos remain inside a password-protected learning repository for teachers—a restricted-public archive—which can assist with how ethical use unfolds in the future.

"Practical" Epistemological Analysis of Multimedia Content

Multimedia or video content analyses have been frequently used to examine how images can communicate stereotypes and bias, as well as attitudes toward numerous topics, and they offer a window to watch how participants co-construct meaning by the messages (speech or text) they choose to share and the corresponding images or artifacts they select. Ohman and Ostman (2010, pp. 4–5) argued that the meanings derived from video content analyses are "practical" in the sense that "meaning emerges in the process of doing and undergoing the consequences of action." Practical epistemological analysis is well used in science education as a way to better understand how learners learn and teachers teach. Wickman (2004) described learning as a series of experiential encounters, or "educational events (which) can be viewed as practices with their own epistemologies (and) such epistemologies that are used in a specific practice, I will refer to as practical epistemologies" (p. 325). Wickman argues that we cannot be inside the minds of learners, so we infer what they are learning from what they say and do. In this project, then, practical meanings were interpreted from the students and teachers' purposeful construction of multimedia to answer the question posed in the challenge. The sample comprised the 10 multimedia submissions, some as videos and some as animated PowerPoint slides with audio, entered by partner primary schools for the *iDream Challenge*.

The videos were watched once individually by Alison and Susan as members of the design team for the purposes of ranking against criteria for prize allocation. Alison and Susan then discussed our ranking and understandings of why we thought some schools addressed the challenge better than others, ultimately choosing the winner by consensus. At a later time, Alison and Susan reviewed the videos separately again, now with a reflective lens, to come to understand how the students represented IKS and WSK for discussion in this paper. Thus, the earlier ranking process preceded the coding process and, in many ways, oriented our thinking about what each school submission "did well" in crafting a response, which in turn influenced our coding. For example, one of the schools who scored high had a breadth of IKS sources and formats, including recordings of Elders and students sharing stories, either orally or from a book; a welcome/goodbye song in language—Yulu Burri Ba—(c.f. Quandamooka Festival, 2017) and dance performance; art installations; poetry, singing and voice-overs, all in one 5-minute submission.

The analyses of these representations of Indigenous knowledges drew upon social constructivist and interactional/transactional ideas about learning (cf. Dewey, 1929/1984) and practical epistemological analysis (cf. Wickman, 2004; Wittgenstein, 1969) which is commonly adopted for making sense of what is going on in a learning and teaching setting which, in contemporary research, could be from live field observation or recorded observation (Ohman & Ostman, 2010; Ostman, 2010; Quennerstedt, 2011; Wickman, 2004). What follows now is the meaning-making that we as authors and judges synthesized from viewing the student work around the dominant representations of IKS and WKS. This chapter firstly presents what and how IKS and WKS appeared to be, and then, we reflect upon these representations, post-program, in terms of implications for embedding Indigenous knowledges as a means to Indigenize education.

How Did We View Dominant Representations of IKS in the Science Challenge?

IKS as Respecting Elders' Perspectives and Knowledges

Each school prepared a submission featuring a creature commonly maligned by non-Indigenous society, including crocodiles, sharks, bees, and bats. Six of 10 of the videos represented IKS as "being retold with permission" by a community member who spoke to the class. They achieved this by featuring an Aboriginal or Torres Strait Islander Elder or knowledge holder who was indicated (stated or listed in the credits) as allowed to share the information. Such information could have been in a question-and-answer style session about the creature, reading aloud a published story, or orally reciting a story about the creature. Even though many of these Elders were not formally introduced, the students treated them with deep respect. This respect was represented in the videos by the way the students and Elders were seated—the

students usually on the floor in a semi-circle around the Elder seated on a chair—and how they listened quietly without interruption, which would contrast with the student-teacher behavior in many elementary classrooms. On some occasions, Elders interpreted a painting to the students. Whether the knowledge was shared orally or via text or paintings, the Elder contextualized the local community knowledge underpinning the story or painting. During the instances where the Elders answered questions, they drew upon their own experiences—their perspectives—to provide the students with appropriate answers.

In meaning-making, we drew upon practices and actions we could see in the videos that we would recognize as universal ways to accord respect to someone, such as listening intently, not interrupting, and waiting for permission to ask questions. The seating of the Elders on chairs and students on the floor took particular educational meaning, in that the configuration of the physical space meant the person with higher knowledge status had the chair. Many of the knowledge holders recounted their information without notes—some read stories from publications—so the meaning we inferred was that they deeply knew the information from experience or an educational process, making them the appropriate person to share the knowledge.

IKS as Knowing and Respecting Societal Rules

In some of the submissions, Elders were not recorded reciting the stories in the video, so the students constructed a representation of a Dreaming story in their entry. In two of these videos, the student groups thanked local Elders for permission to share their story on camera, and in one case, in writing, during the credits of the video. One video showed images of an Elder speaking to the students but did not include the audio. As these students told the story with permission, they reflected on the *underlying morality* embedded in the story. For example, one school contributed an oral rendition of Oodgeroo Noonuccal's *Ballad of the Totems* as an authoritative source as to the importance of misunderstood creatures, the opening verse of which is below:

> My father was a Noonuccal man and
> kept old tribal way,
> His totem was the Carpet Snake,
> whom none must ever slay;
> But mother was of Peewee clan,
> and loudly she expressed
> The daring view that carpet snakes
> were nothing but a pest
> (Noonuccal & Walker, 1966).

This poem points to the importance of totems, and in this case, a snake, who is considered part of the clan and therefore an equal entity with people and other

entities (such as waterways and skies; cf. Blair, 2015; Martin, 2008). The underlying morality of the poem shared by the students is that the carpet snake has rights and obligations in the clan and deserves respect. Thus, Indigenous knowledges were represented as local, community-held knowledge, which was relational, in that there was a respected "knowledge holder" and the students knew to seek a relationship and negotiate permission to share the knowledge with this keeper in an agreed, respectful way. Similarly, Indigenous knowledges could take the form of story that told of a deeper moral message. While all the entries told a story that included relations with the misunderstood animal, they also focused on a deeper, moral story about what it means to live as an individual or "being" alongside other beings within a community. Thus, engaging with Elders in this relational way enabled a broader understanding of community, and who is in that community, and how they relate to each other.

The representations of misunderstood creatures enabled the students to represent an important and often misunderstood part of Aboriginal identities and Torres Strait Islander identities—that as equal entities among entities, just as the students achieved with their winning composition about the crocodile. Beth attributed this to the administration of the program by Aboriginal people:

Beth: … the work with community was different, because they (the program administrators) were Aboriginal people, they were able to bring community into help the students to be able to express their identity in different ways.

Susan: And that was just a joy working on those. We had thought—coming up with a criteria that by saying you've actually got to include in your reporting, proof of consent of community involvement and show who's been involved in your project, either on film or in the credits—was a way of recognition … a way of showing that it was a collaborative in community and with consent, you know, not something that people had no idea was going on.

Dominant Representations of WSK in the Science Challenge

In all 10 videos, WSK was represented as short factoids. These facts were not linked to any community or social construction, as though they were a-cultural. The facts focused only on specific information about the animal in question. Once found or "learned," these facts seemed to be able to be communicated by any person—they were not represented as cultural property, but rather, as universal truths. As such, these facts were perceived as independent unto themselves and represented the "truth" about that misunderstood animal. Similarly, to IKS, WSK was presented as uncontested:

Alison: WSK presents knowledge that is isolated or divided into bite-size, age-appropriate chunks which are taught as if divorced from everything else. WSK expects mastery of these chunks and assumes students will bring other chunked ideas together to form a more complex appreciation of how larger systems relate. Science education's focus is on understanding these knowledge chunks rather than understanding how everything is interconnected and related.

In all of the representations, the students combined WSK and IKS to make some kind of social commentary about their misunderstood creature. The Elders, students, and knowledge holders featured in each video addressed the social vilification of their chosen animal and used this combination of knowledges to justify why this should not be the case. This blended justification about the importance of their animals (for example, the crocodile or shark) was claimed both as their perspective and as "scientific fact." In addition to emphasizing the relational considerations—beings alongside other equally important beings—they also communicated the importance of sharing this information as one way to protect the animal, their natural environment, and, ultimately, themselves as equal beings.

Alison noted that there was little attempt to explore what was learned through the combination of both knowledge systems by regular classroom teachers or teacher aides involved in creating the videos, or the Indigenous knowledge experts who featured in some of the presentations. The teachers may not have wanted to edit the work of the Indigenous guest presenters, in order to present alternative explanations. They may also have not known where and how this knowledge "fitted" in the disciplinary box of WSK, given their own lack of IKS.

Alison: There were aspects of teaching depicted in the videos which would not normally be taught that way from Western Science knowledge perspective but there was no interrogation of this in the creation of the videos. There was a missed opportunity to reflect the learning that could be enabled by generating an understanding of the different ideologies of both knowledge sets.

Susan: Did you get any sense of feedback from people (teachers) that they felt was happening or did they always really just look at it as a student aspiration project?

Beth: I think that's the problem though … is that quite often when these projects are … run for Aboriginal kids, schools perceive them as being an isolated project. They let them go … "there you go, there's your little bit of culture" and then that's it, it's finished.

Discussion

Students in the *iDream Challenge* represented WSK as made up of objective facts that were perceived as truth and not subjectively constituted or developed. IKS was represented as "belonging to" the local Aboriginal or Torres Strait Islander community that described what it means to be human (a being) alongside and in relationship with their "misunderstood creature" (another being) in a way that celebrated subjectivity. This reflects what many researchers (see Martin, 2008; Nakata, 2002; Nakata & Langton, 2005; Thorpe, 2013; Whyte, Brewer, & Johnson, 2016) perceive as one of the main philosophical differences between IKS and WKS: Rather than devising and testing a theory for the functioning of the universe (as promoted in WKS), IKS invites us to know ourselves as humans in relationship with all aspects of the universe. Baker (2016) suggests that generating literacy in IKS enhances students' sense of kinship with living and non-living aspects of the biosphere. Rather than being oppositional

or contradictory, the primary school students' videos illustrated how they combined both knowledges as a complementary way to explore their world. In all 10 DVDs, it was the relational understanding of the animal to self, the natural environment, and their society that became their take-home message. The students seemed to find a common goal in highlighting the two differing epistemologies: They reflected on the plight of these animals and made visible the dominant social beliefs that had led to their marginalization. A strong pattern emerged across the projects: the need to become aware of your own thoughts and beliefs, alongside the knowledge base of the community, in order to speak back to moral issues such as marginalization. Rather than focusing on validity, or what knowledge base was more correct than the other, or associated epistemic tensions, the students used what they wanted from both knowledge bases to make sense of their misunderstood creature. All projects modeled how to openly embrace both knowledge systems to generate an advocating stance toward the creature.

The students in the *iDream Challenge* modeled the kind of relational teaching and respectful engagement that all teachers should follow when considering how to embed IKS in their curriculum, as per Australian Curriculum requirements. Even though research into embedding (cf. McLaughlin & Whatman, 2015) highlights teachers' lack of confidence in embedding IKS, reflections on the 10 *iDream Challenge* projects show that students can and did negotiate this space of embedding IKS without the fear of "not doing it correctly" or not being adequately prepared. Specifically, the *iDream* videos illustrate strong examples of student agency, engagement, and enjoyment within their learning journey in this cultural interface.

One of the more frustrating aspects of policy initiatives to support Aboriginal and Torres Strait Islander education aspirations, pathways, and access is that they continually change. For example, the initiative and the entire department which supported *iDream* have been dismantled. For this project, Beth attempted to collect archival data about the success of the initiative. In conversation with Susan, Beth discussed her initial shock and frustration that there seemed to be nothing publicly available about the *iDream Challenges*:

Beth: I asked about the data that was collected for *iDream* and all of our internal database had been wiped from not only *iDream*, but also the entire (Department) has been closed down … that project's been taken down so it's null and void, basically.

Susan: Well, there's the one issue of collecting data around how successful was that as a program that encouraged students to think about tertiary pathways, I mean that was obviously one of the points of this program, but the other thing is the production of all these knowledge resources that could continue to inform schools and teachers, which is also just as important and potentially has more reach. That's why I'm certainly frustrated … where did they go, what happened to them, can I put them on YouTube and share them? And I probably can't. It's the idea of this resource, rich resource driven by students and community people not being made more available, especially when we're supposed to be embedding these knowledges in the curriculum.

Beth: With the change of governments and with the change of people in town (Head Office), that's what happens is that things are taken out, people just decide on their own without consultation that something's null and void.

Susan: They come in and they wipe the slate clean and go back to "We're going to go back to step one, give Indigenous aspiration programs or whatever, and you think ughh! … I've anecdotally seen lots of different versions of things, usually aimed at secondary schools, over the last 30 years, but you can't find any record of them. They're gone!"

Political agendas attached to policy funding ensure that replacement governments remove most if not all traces of successful programs which have come before them. Removing all traces of past programs (and successes) is to be able to claim that a new program is "the first of its kind." Governments are also quick to remove from public view any evidence of their past attempts to address complex problems in which they think they have "failed," which diminishes the achievements, however small, that people in the sector have made. It is the erasure of successful Indigenous education student initiatives from public record that is the axis around which stories of Indigenous under-achievement are perpetuated. One key consideration about the long-term use of multimedia resources is that of future viewing of deceased contributors. We reflected upon this issue, but returned to the original intent of the *iDream Challenge* design, which was to foreground community permission to share knowledge in the first place and to respect Aboriginal and Torres Strait Islander multimedia protocols, such as warning future viewers that the persons depicted may be deceased (see, for example, National Indigenous Television Special Broadcasting Service [NITV/SBS], 2017):

Beth: I don't understand why (the Department) would hide these videos. You're right … media release has been done, there's no reason.

Susan: The only thing, I have thought about this later, if they might all need to have an overlay of the warning, the deceased person's warning on the video.

Beth: That should have been put in anyway … we have these projects that go through. You can continue that, it'll never get old, and same with kids' stories. So, you might use student stories but you may also then in 20 years' time: use the same student's stories, where have you been, what have you done? That would have been fantastic! How's your identity changed? That would have been really nice to do.

This observation by Beth identifies another key consideration also raised by Rao (2010), Thorpe (2013), and Araluen Corr (2018) regarding the temporal mis-readings of images in archival footage: What is an acceptable representation of peoples and views today may not be approached in the same way in the future. Re-purposing the *iDream* videos as curriculum resources for future use by educators would generate a new set of ethical and representational dilemmas and require responses or protocols in place for which the project staff and Department of Education and Training have not been properly resourced.

Conclusion

Our critique of the *iDream Challenge* videos was intended to highlight important lessons for all educators. As Gaudry and Lorenz (2018, p. 223) point out, the students have delivered "affirmation of Indigenous worldviews alongside the practical reclamation of Indigenous educational practices and on-the-land learning," modeling respectful and relational pedagogies and curriculum development practices. We suggest these practices can assist to decenter WSK hegemonic norms and turn the gaze back upon the disciplines themselves (Nakata, 2007), in incremental ways that can empower Indigenous communities to regain educational sovereignty. The pedagogies to research, negotiate, develop, and produce these multimedia resources modeled what Māori educator Angus Macfarlane and colleagues argue as essential for creating educational experiences, particularly in science education (cf. Macfarlane et al., 2019), that are "holistic, collective, experiential and dependent upon a free exchanging of teaching and learning roles" (Macfarlane et al., 2008, p. 102). Depicting the right of Aboriginal clans to welcome and farewell peoples from visiting their land in a science lesson, as some of these primary students have done, can redress what Moreton-Robinson (2015) described as migrant/settler attachment to Australia as their property which, since colonization, has always sought to deny pre-existing and ongoing Indigenous ontological connection to land, as discussed in Chap. 6. Sharing a performance revering the crocodile, as other students did, centers the worldview that creatures are entities equal, if not superior, to humans—a worldview shared with Canadian Métis, as revisited in Chap. 5.

Our final comment here extends to the fit between the purpose of this chapter, with a retrospective narrative approach to critiquing the learning possibilities of the *iDream Challenge,* and the use of practical epistemologies to unpack the multimedia representations. As Wickman (2004, p. 326) noted, focusing upon the practical epistemologies that appear to be in use in a learning and teaching setting "can be used as an aid toward finding out how simple changes of existing practice might improve teaching." The additional complexity of *whose* epistemologies are used to make meaning in science education (as discussed in Chap. 6) has been illuminated in the re-telling of these multimedia representations via reflective conversation with Beth as an Aboriginal educator and Susan and Alison as non-Indigenous educators, all of whom were positioned within the midst of the experience (Lewis, Schaefer, & Lessard, 2018; Schaefer, 2018) as curriculum advisor/critical friend, partners, and co-designers of the *iDream Challenge.*

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Chapter 5
Teaching Reconciliation and Treaty Education Through a Leveled Reading Series in Primary Schools in Canada

Calvin Racette and Alison Sammel

Abstract This chapter discusses how Indigenous ideologies and perspectives are being embedded in schools in Saskatchewan, Canada, through Reconciliation and Treaty Education projects. Through dialogue, Alison explores practical ways Calvin Racette, a Métis Elder from Saskatchewan, has worked on projects to Indigenizing education. This chapter outlines how Calvin worked with teachers and his wider community to do an art project and student conference entitled *Treaty4 Project* which won the 2018 Canadian Governor General's History Award for Excellence in Teaching. His second project, called *Under One Sun* addresses Treaty education through a series of 54 books, and Elder videos, for Kindergarten to grade eight students, published by Nelson Education. In this book series, Calvin and his cowriters introduce key concepts to re-educate and re-shape the history of the Indigenous peoples in Canada while also awakening new ways of negotiating reconciliation. They present information in a way that focuses on healing, reconciliation, and a collaborative way forward. These classroom materials included a teacher's guide to assist with understanding and embedding the teaching outcomes of Treaty education agendas. Each book is designed to be used as a leveled reading strategy to improve literacy while embedding Indigenous histories and cultural competencies and perspectives. Throughout this chapter, Calvin provides a glimpse of what it was like to grow up as a Métis child and how the support of his family encouraged him to become a teacher, a community leader, and ultimately be recognized as a community Elder.

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Dialogue can be the midwife of inspiration, reflection, and understanding. Yet, in our very busy teaching practices, little time is available for deliberate academic dialogue with our peers. Much of our conversations tend to focus on administration or logistic functions and rarely do we focus on thoughts and emerging ideas from our chosen disciplines. This is an academic tragedy, as many pedagogic insights emerge from the rich, dynamic interplay started over a cup of coffee. Gadamer's (1989) concept of the fusing of horizons speaks to the importance of these kinds of dialogues. When Gadamer (1989) writes of horizons, he is referring to conscious and subconscious perceptions, beliefs, and biases that are brought into any discussion. These horizons are twofold: a historical horizon (defined by the past and the traditions that have resulted from it) and a present horizon (that encompasses all that is believed and understood by a person at this moment in their current situation). They are interconnected as the historical horizon influences the present horizon and as such and must be acknowledged and examined so that the present horizon can be better understood. The explorations of these horizons result in what Gadamer (1989) refers to as their fusing. In this fusion, the historical horizon remains fixed, while the present horizon "is continually in the process of being formed because we are continually having to test all our prejudices" (Gadamer, 1989, p. 306). It is through dialogue between the two horizons that understanding can grow. Gadamer (1989) proposes that developing a rich understanding is not something that can be achieved individually, but through dialogue when people lay open their experiences and horizons, and entertain the possibility of change and growth. In this chapter, Calvin and I seek to enter into this type of Gadamerian dialogue where historic and present horizons "fuse" in an attempt to capture understandings of what it means to Indigenize education.

Alison: By way of an introduction, can you tell us about your life and your link to teaching and learning?

Calvin: I grew up in a prosperous rural community in Saskatchewan on the proverbial wrong side of the tracks. There were about 10–12 Métis[1] families living in the community. We were all marginalized by the larger society. Up until the 1940s, the Métis were not seen as citizens. They were excluded from the education system; were not allowed to live in towns because they did not pay taxes. Growing up in the 1950s and 60s, the exclusion was very much part of life.

Although we were disenfranchised by the wider community, I would say I grew up in a conditional environment: conditional on the fact that I played by the rules and conformed to the majority society's value system. This was especially the case when I was in school, as I was a different person than I was at home. At school, I learned and followed the norms of the school community. This allowed me to fit into some degree with the other students. It was also in school that I discovered the teachers who were interested in me as a person and they encouraged me to be a successful learner. They understood that the odds of a successful graduation were against me, but they were willing to help me all they could. The statistics from previous graduations

[1]Métis are people of mixed European and Indigenous ancestry, and one of the three recognized Aboriginal peoples in Canada. For more information please see: http://firstpeoplesofcanada.com/fp_metis/fp_metis1.html

and dropout rates showed very few Métis students completed high school. The lack of curriculum relevance and basic teacher support was not there. I believed some teachers would help me as long as I gave them my best effort. I was able to see a type of role model that I liked, but I also was able to see many teachers that I did not want to emulate.

Back then, it was normal for the Métis boys to leave school at Grade 8 or age 16 and make their way into the workforce. However, I chose to stay in school and graduate. After I finished school, I joined the other Métis men in the workforce. My high school education proved to be very useful during the years I spent in the construction industry. I was able to read manuals, fill out the forms, and take a lead role on the work crew. Several years later and the father of three children, I entered into university with the help of a government bursary. I was determined to become a teacher as I was fascinated with how my children learned. Upon graduation, I was told by one of my university instructors and also the Area Education Committee from the Métis Community that I was a change agent. This meant that I had a responsibility to make life better for myself and Métis children. I started teaching and quickly recognized the disparity that existed and set out to make education better for Métis and First Nations children.

I worked in the area of Indigenous education for 34 years. I continually challenged the status quo and was determined to level the playing field for these marginalized students.

Alison: Growing up, what were your family's understandings about education?

Calvin: Growing up, education was considered a much-desired thing. My mother was a firm believer in education and was determined that her children would go to school and have a better life than she did. My mother worked as a house cleaner and did sewing and laundry for people. She believed that her children deserved better and that they were equal with the other children from the town. She recognized the path that the students who did not graduate from school were only able to travel. She believed we were capable of more and could be leaders as opposed to simply workers.

My mother died of cancer when I had just turned 13. I elevated her to a pedestal and was determined to get my Grade 12 as a means of honoring her. My siblings and I adopted her philosophy on education and continually told ourselves that it was a case of *when* we graduate, rather than *if* we graduate from high school. My father, however, was a farmer and time spent in school meant less time that we spent working on the farm. We would miss blocks of time during the planting and harvest season. This was not an uncommon practice for all the farm students. I preferred to go to school and would only miss school when I had to work on the farm. Upon reflection, I believe it was my unwritten agreement to my teachers who believed in me and also to the promise I made to myself to graduate to honor my mother. I would work hard to catch up on the work I missed and learn the new content. I especially enjoyed how Math connected things. I was good in Math and actually enjoyed the challenge.

Alison: Did you see your Métis heritage in the curriculum you taught—and what did you think about that?

Calvin: Métis content was never taught in school. I think in Grade 5 we studied Canadian history and spent a lesson on the Northwest Resistance.[2] At school, we were told this resistance was a rebellion, and Louis Riel was a traitor against Canada and was hanged for opposing the government. It was in university that I learned about Métis history and its place in Canadian history. It was here I learned that Louis Riel was central to the struggle for Métis identity in Canada. He became a very polarizing figure and challenged the Western status quo. He was educated, and he used his knowledge and skills to oppose the Canadian legal and political system in an effort to give Métis people equal access to Canadian life, education, and the workforce. If this perspective of Riel and Métis history were taught in schools, I believe more Métis students would have stayed in school. I believe that if students were educated about Métis history and their struggle against unfair government infrastructure and policies, then students would have understood and fought to maintain the rights that Riel gave his life for. It is our nature, as Métis people, to not go easy into anything without a fight.

It was also at university that I learned about the role of the church, the subjugation of the First Nations and Métis people, and their struggle to survive. I learned that First Nations children were forcibly sent to residential schools and Métis children were marginalized and not allowed to go to school until 1940. Learning this made me angry to see what happened, but it gave me a sense of pride. The Indigenous people were pursued in a genocidal manner and they survived. I championed their resilience and became a champion of the underdog.

Alison: What assumptions do you think your parents and the community had about Western knowledge? And do you think they would have liked to see Métis content knowledge or processes taught at your school?

Calvin: I think my parents believed that Western knowledge was superior and that in order for us to be successful, we had to conform and learn those things. Also, education was something relatively new to the Métis community and they were just grateful that we were learning to read and write and being given a chance at success. I think the Métis parents of my early school days looked at the community in terms of who treated them decently and who accepted their children. In my adult working career, I learned that the education system is also seen as a commodity in terms of cost and length of attendance. That success in education could be viewed as a product that could be translated into a wage. You went to school to get an education, so you could get a job. The more education you got, the better job you could get. It was never viewed as a process of learning where life skills, citizenship, or parenting skills were developed.

In Canada today, children are not held back so attendance is not considered a factor. Children are not held back in schooling. They are promoted and remain with their age cohort. Mastery of the appropriate grade level skills is considered secondary and the hope is that the next teacher will catch you up as your willingness to attend

[2] In 1885 there was a brief but unsuccessful uprising against the government of Canada by the Métis people led by Louis Riel in Saskatchewan. Riel was charged with treason, was tried by a biased jury and executed. See https://library.usask.ca/northwest/background/riel.htm.

or work harder improved. Therefore, we have many children entering high school without appropriate reading, writing, comprehension, and math skills. Their work habits are poor from an inconsistent attendance and they simply lack the skills to succeed. As a result, the exodus of students at high schools is overrepresented by Indigenous students who have received limited educational support.

When I was growing up, failing a grade was common and was seen as a detriment to your progress as a person and to your position in society. It was perceived that you had something wrong with you and the result was to stream you into a special classroom. This led to society assuming you were not a capable learner and therefore, you would be a substandard employee. The Métis community also felt it was their lot to have limited access and to be grateful to be allowed laboring positions. In retrospect, I know that the Métis people I knew and worked with had amazing survival skills. The men were all master carpenters and had no training. The women were amazing seamstresses and cooks. I think they believed that learning the Western ways would allow them to have a better life. As I learned during my entire life, that fitting in wasn't an option. I had to work at least at 110% to be considered acceptable in every position I ever held. I was scrutinized because of my ancestry (being Métis) and doubts were always raised as to my ability to succeed. I knew that having both Western and Métis knowledge helped me to become the change agent that was outlined for me because I graduated from university. Although, I believed I had to know everything to be considered equal to the non-Métis community.

Alison: Where did you learn about Métis knowledge and how did you learn it? In hindsight, how did you make sense of both these knowledge bases?

Calvin: I learned a tremendous amount from my uncles. They were my mentors in the workforce. I also remained connected to my Métis community. I learned about relationships, survival, and I also learned many traditional skills, such as cooking, hunting and fishing, and carpentry skills. I learned about Métis history from the Gabriel Dumont Institute of Native Studies and Applied Research library when I was in university. It was there I learned about the theory of Canada's colonial history and the oppression and subjugation of the Indigenous people. It was also where I learned how to understand the power relations that created Indigenous and Métis oppression, and how to navigate my way through this space to help myself and Métis children. It was there, I also found many allies, both Indigenous and non-Indigenous. By learning Métis history, I realized that in order to change the dominant historical storyline, Indigenous people needed to become the authors of their own stories.

Alison: What does colonization mean to you?

Calvin: Colonizing is the onslaught of European values that were imposed on the Indigenous peoples of the world. European countries that had navies sought out foreign lands where they subjugated the Indigenous peoples and seized their wealth and took it back to Europe. They imposed their language, their value system, their government, and their religious views onto the Indigenous people. Over a long period of time, they eroded the identity of the Indigenous people and placed them in a role of being subservient.

Alison: I feel such profound pain when I read this. As someone who is not Indigenous, I cannot fathom the reality of this. What was the reality of this like as a child, and

as an adolescent? And what was the experience like when you first started to come across the "theoretical understandings" of colonization?
Calvin: Being one of the first cohort of Métis children to be given access to formal schooling in town, I felt happy to be given the chance to go to school. Even at my young age, I was happy to be offered the opportunity to do more with my life than what the older members of my community had been given. I believed in the power formal education offered Métis students to integrate into the wider community. I had older siblings who also believed in education and shared our mother's dream. They always knew that things could be better and encouraged me.

When I was studying at university, I realized the long-term impacts of colonization and who benefited while others suffered. When I learned this, I felt a certain amount of anger. But, from that anger, grew determination to be that change agent and level the playing field. I encouraged others to graduate from school and go to university. One of my mantra statements was "they can't take it away from you". I also learned about the power of relationships and the importance of allies and friendships. These bonds go beyond the community and I realize that the struggle to make changes is not mine alone. There are many who share that struggle and most of it comes from wanting to be a good person. I realize there are many teachers who want to share another side of Canadian history. Like me, they believe that presenting a balanced view can build a shared history that benefits all.

What I have learned is that Métis history and voice needs to be included in the history of Canada. And all people need to understand what happened in order to heal and move forward. I learned that in order to challenge the colonial views on history, I needed to create a strategy or a business plan that would allow me to work on behalf of my Métis community. I believed we needed to reshape how the wider community understood our identity. In order to do this, I knew that I needed allies and support. I found this support in the Métis community as well as my university community.
Alison: Who are the Indigenous peoples of Canada and what does Indigenizing education mean to you personally?
Calvin: There are many different peoples in Canada who are referred to as Indigenous peoples—these are the Inuit, the Métis, and the First Nations peoples. There is a wide range of worldviews that exist within the Indigenous community, so there is not one straightforward answer. What is common to these Indigenous worldviews is that the Creator, the heavenly bodies, the elements, the plants and animals all have a sacred place and exist in relationship with each other. Humans also are connected in this relationship but are considered the lowest because we need the rest of Creation to exist. They, however, do not need us.

Therefore, I think the term "Indigenizing education" has different meanings to different people. From an education perspective, Indigenizing education is often seen as taking Indigenous content and teaching it through a Western lens to be evaluated in a Western reporting system. This is a common approach to the school systems, and I believe that it is a wrong approach. For Indigenous people, every concept that exists in the education system for Western society has a parallel teaching in the Indigenous world. Mathematics, Science, History, Health, Language, Literature are subjects that are common in school. The Indigenous peoples of the world have all these within

their teachings. Indigenizing means to learn these concepts from the Indigenous people's viewpoint. Without these Indigenous perspectives being included in formal education, it sends a message that Indigenous content and history have less value.
Alison: What do you believe an educator could do if they wanted to Indigenize their teaching practice?
Calvin: I can see there are a few different ways teachers could Indigenize their educational practice, meaning how they could learn about Indigenous perspectives relating to what they are teaching in their classrooms. There are many other ways of Indigenizing education, but I offer these three approaches as examples. The first would be to ***develop relationships within their local Indigenous communities***. One way of doing this would be to spend time with an Elder and learn about Indigenous perspectives and teaching approaches. Not all teachers have access to an Elder but for those that do they can collaborate with an Elder about concepts that are mandated to be taught in a classroom; you can gain an understanding of these disciplinary concepts through an Indigenous lens and drill down into them and learn them. Once you begin to learn them, you begin to understand the processes of how to see the world from an Indigenous perspective. This perspective is underpinned by teaching interconnections and relationships (rather than isolated facts or information) which is very important not only to sustaining a culture, but also to sustaining the planet. By understanding the concepts, we teach in Western schools from an Indigenous perspective, a teacher can then incorporate and interpret these perspectives into their classrooms so they make sense to the learners.

However, Indigenizing education is not just about adding Indigenous perspectives but also understanding Indigenous pedagogy. By working with an Elder, a teacher can learn how Indigenous people look at the teaching and learning process. In the Métis community and, arguably, other Indigenous communities, central to a pedagogic process are strategies which communicate how things relate to each other. This concept is so important that it was a key theme in the *Under One Sun* project I will talk about later. Unfortunately, in Western schools, too often, the content is delivered in a manner that requires memorization of isolated information: connections are not identified or focused on and historical relationships are not made. This method of delivery is seen as foreign to the Métis.

By understanding school concepts through a dual lens, teachers can then help their students understand interrelated relationships within their community (this is another theme in the *Under One Sun* project). I have found that when students are exposed to this method of teaching, they realize they only have been learning half of the story, and even though the story is presented as fact, it reflects a biased point of view. When students understand that there are multiple perspectives, they often start to think differently and begin to ask different questions. They ask their teachers different questions. When teachers seek to understand the world from an Indigenous perspective, and engage with Indigenous pedagogies, they will find lots of support from like-minded thinkers. Locally and globally, there is a growing body of literature and resources to assist in their understanding of Indigenous perspective.

The second approach to Indigenizing education is by ***accessing and utilizing current, high-quality resources***. Teachers need to access high-quality resources that

offer Indigenous perspectives around the concepts they are teaching. If the resources are supported by their school system, and teachers have access to professional development on how to use these resources, then teachers are more likely to feel comfortable embedding this knowledge into their lessons. The project that I have been working on for the past few years aimed to support teachers in feeling comfortable and confident embedding Indigenous perspectives in their classrooms. The resource that my colleagues and I developed is called *Under One Sun*[3] and it offered an Indigenous perspective of Canada's history through the exploration of Treaties. We did this by writing levelled reading materials in the form of children's story books. Our aim was for teachers to be given the resources, professional development, and time needed to work towards learning or incorporating Indigenous perspectives into their literacy educational practices. I will explain more about this later in the chapter.

The third way of how teachers could Indigenize their educational practice is to ***build a school community that is culturally safe for students***. If a teacher creates a space where Indigenous perspectives are taught, valued, and respected alongside Western knowledge bases, then I believe Indigenous students will engage more with what they are learning. Teachers can formally incorporate their Indigenous student voices, perspectives, and knowledge bases into lesson plans. When students feel safe, they are more likely to share the information they are learning in their homes and communities about the concepts being studied. Building healthy relationships with the students and their families is vital to this work and may encourage family members of the Indigenous students to share their knowledge with the class. Rather than being a one-off thing, if this is included for each concept, it will signal to the community that Indigenous people and their knowledge are valued.

Alison: Can you provide us with an example of these practices?

Calvin: There are two projects I have worked on that illustrate how a teacher can Indigenize their practice that I will talk about in this chapter. The first one is called *Under One Sun* and it is published by Nelson Education. This project is K-8 with six titles available for each grade level. It is a levelled literacy project and the content is about Treaty education. The other project is called the *Treaty4 Project,* which I will explain in a moment. It was a student conference that involved an art project at the high school level. This project received the Canadian Governor General's History Award for Excellence in Teaching.

A good example of how Indigenous people and their voice can be valued in schools is through our Treaty 4 Student Conference Project. This project developed because two teachers in an affluent high school wanted their students to know more about Treaty 4, how their students have benefited from Treaty 4, and how they could be good treaty citizens. The project used an art theme of the 4 Directions or the Medicine Wheel (Fig. 5.1).

The students built a mural from 264 small pieces of artwork that they did after participating in the student conference. The student conference hosted workshops about issues affecting the Indigenous community and the impact of these issues. Issues such as murdered and missing Indigenous women and girls, land claims, treaty

[3]For more information about *Under One Sun* see https://school.nelson.com/under-one-sun/.

Fig. 5.1 Four directions of the medicine wheel. Permission from Leia Laing and Naomi Fréçon

rights, Métis people who live outside of a treaty. To more fully understand what they had learned, the students did follow-up work in their school and community (such as interviews with community members, research assignments, blogs, and a writing project). The mural formed part of their expression about what they had learned.

As background, we live in the southern part of Saskatchewan, Canada. In 1874, Treaty 4 was negotiated between the British Crown and the First Nations of Southern Saskatchewan. It had clauses that provided a way forward in which European settlers and the First Nations could share a common future. This treaty was seen as a "forever existing" agreement that would be good for all and allow for a prosperous life for all. However, over the decades, the clauses of Treaty 4 and the other Numbered Treaties have been disregarded by the governments and their partners in industry as they implement developmental policies that focus on economic development.

Recently, there has been a huge emphasis in Saskatchewan on the treaties and fair and equitable interpretation of the treaties. One of the huge focuses has been

on the environment and sustainable energy practices. This focus was also key in the Treaty 4 Student Conference Project. This project provided an opportunity for Indigenous and non-Indigenous educators (who worked very hard to put together a safe learning experience for high school students) to explore their roles as responsible citizens in the Treaty 4 area of Saskatchewan. This project was recognized by Historica Canada (Historica Canada is the largest independent organization devoted to enhancing awareness of Canadian history and citizenship) and received a Canadian Governor General's History Award for Excellence in Teaching.

This Treaty 4 art activity was also incorporated into the Grade 7 book within our other project (*Under One Sun*) as a way for students to learn about treaties in Canada. This second project, called *Under One Sun,* is a K-8 levelled literacy project. There are six titles around key Indigenous themes for each grade. This project is a resource that comes with the children's books, cards, or magazines for each grade level, a teacher's guide, Elder videos, and various online and paper-based supports. *Under One Sun* is connected to the Treaty Outcomes for K-8 from Saskatchewan. The Saskatchewan Curriculum uses outcomes that they wish the students to learn for the subject areas. Treaty Outcomes were created for the teaching of treaty education. This resource provides Canadian teachers with an accessible way to explore Indigenous perspectives and Treaty education in the primary and middle years.[4]

Alison: Can you tell me about the relationship between Indigenizing education and communicating an accurate understanding of the history of Canada in schools?

Calvin: This a very broad question. Perhaps, the best way to explain this is to use the *Under One Sun* project. Canadian history has been taught from a very European perspective. This biased story is what I call "Celebratory Canadian history". A perfect example is Canada became a country in 1867; last year Canada celebrated their 150th birthday and for the most part ignored the previous 15,000 years of history. Other examples are the lack of acknowledgement of traditional Indigenous land claims, borders and boundaries of territory, languages, and lifestyle choices. The lack of respect for Indigenous history tells me that this viewpoint speaks of treaties as things that happened in the past, with little relevance for today.

In the most recent past, when the history of the residential schools was exposed and truth and reconciliation became topics of conversation, the concept of treaties emerged; they were seen as historical documents that did have relevance for present-day Canada. Even though the treaties were set up in good faith, the main benefactors of the treaties over the centuries have been the settler society that came to Canada. Therefore, Indigenizing the topic of treaties is to struggle against that long-established, Western-biased narrative. The project that we undertook has been a negotiated story, one that moves the narrative to the left. By this I mean that I understand a story or a history as a continuum. There are right-wing and left-wing perspectives. The current state of teaching treaty education in Canada has come from government's perspective. This viewpoint is based on majority society and their voting status. Hence, the treaties have always been interpreted to benefit the newcomers from Europe. Moving

[4]To explore the Saskatchewan curriculum please see https://www.curriculum.gov.sk.ca/webapps/moe-curriculum-BBLEARN/index.jsp#.

it to the left will allow it be less biased and presented in a much fairer perspective to show that Indigenous people did not benefit as they were supposed to when the treaties were negotiated. I believe there is much more to do and successive generations will have the task and responsibility to further change this biased narrative. I suppose it is like learning to walk: we must begin with slow tentative steps that grow stronger as we go along.

Alison: What are the benefits associated with Indigenizing education?

Calvin: The benefits are many. The most important benefit is that the Métis children will begin to see themselves in the curriculum. Until they do that, formal school learning will not be of value to them. Once they realize they have a place and a role at school, only then will they truly become engaged. I believe the children will become more eager to engage in the school community because they see value in themselves, they see that they belong, and that the best version of themselves is what is needed. It is also important to engage the parents. When they support their children in their learning, they promote participation and encourage their children to attend school. I have witnessed how this leads to higher success rates at school. Belonging and being nurtured is fundamental to success. When Indigenous children feel part of the larger society, they will respond by becoming more engaged and involved in their future, and their society. I have seen how this ultimately promotes a better standard of living when they leave school.

Let me expand upon this—education has been deemed one of the main indicators of success in life. I can use my own self as an example. My parents were not high school graduates. My mother did not get professional employment and my father was a farmer who inherited the land from his father. I have graduated from high school and then university. I was able to help and support my four children to graduate from high school and go to university. They have all graduated and have been able to get professional employment and earn a decent wage. As a result, my nine grandchildren have a better life where they live in stable housing, eat decent meals that are a balanced diet, and are involved in a lifestyle that promotes a healthy life. I explain this process as "doing well". Education has allowed me to do well, and as a result, my children have been allowed to do well, and as a result my grandchildren are doing well. My success has broken a cycle and created a better standard of living for me and my family. There are many Indigenous families that have yet to enter this process or are at the early stages of this process. I am not saying that Métis values and lifestyles have not promoted or allowed for Métis to "do well", but what I am saying is that since colonization, traditional lifestyles, values, and customs have been disrupted, and new infrastructures have been put in place that have not supported the Métis or allowed the continuation of our traditions. Doing well was achievable in our traditional ways, but in this new infrastructure, doing well is not so easy. Since colonization, doing well is now linked to education success. If Métis students do not see themselves in what is taught at school, they will not engage as deeply, and they may not be as successful as they could be, and so this is one way in which the cycle continues.

Another huge benefit is that Indigenous cultures have a huge richness to their history and stories. Teachers who collaborate with the Elders learn about this richness and form valuable relationships. While learning about our Métis history, our

Elders help teachers become better educators. Spending time working with an Elder encourages the teacher to become a learner again and they are able to see the power of engagement that an Elder brings to Indigenous youth. As teachers learn to master the skills the Elder communicates, they enhance their teaching repertoire, not just of Indigenous knowledge and perspectives, but also their pedagogical knowledge and their ability to strengthen relationships with the Indigenous community.

Alison: Do you believe that a non-Indigenous teacher can understand the Métis content? What role do you believe they can they play?

Calvin: Non-Indigenous teachers become allies to the Indigenous community and are able to become the bridges to the Indigenous community. They build relationships with the children and to their families. It is these relationships that create optimal learning environments. Mastering the content takes dedication and a lot of hard work. What is important is that you are open to the content and interact with it. I have found that when Métis students and their culture are valued in a classroom, they become open to sharing their Métis knowledge and traditions. Therefore, if you work to create this safe space, much of the learning will come from the students. The trick is recognizing this fact and building a relationship with the child, their knowledge, and the wider Métis community.

Alison: What are the challenges associated with Indigenizing education?

Calvin: The challenges are many. It takes time and energy on the part of the teacher to develop relationships not only with the students but also with parents and the community. The past has shown that Indigenous parents often did not have successful or pleasant educational experiences, particularly their experiences with teachers. This may mean that building effective relationships can be even more difficult. It needs to be understood that historically, formal Western education was used as a colonization tool in residential schools and Indigenous children were punished for being Indigenous. They were subjected to an onslaught of European values and teachings, but more than that, they were denied their own history, language, and culture. They were taught these things were wrong, often morally wrong. To teach this, the Canadian government partnered with the churches to assimilate the Indigenous children into mainstream society and to deny their own history and heritage. For Indigenous people, education had been the tool of assimilation and led to the disenfranchisement of their own value systems. For children outside of residential schools, the purpose of education was to give you a chance for a better life and a career. For Métis children who for the most part went to mainstream schools, their knowledge and value systems were ignored. They were taught a Western-based value system that devalued who they were and what they thought and denied their family values and traditions. This led to many Métis children feeling ashamed of who they were and when they became adults, they denied their heritage.

These negative aspects of parents or grandparents' own education will influence how they view their own children's education. Therefore, the Métis community are often unwilling to approach the teacher or confront the school. This can be perceived as Métis parents not being interested in their children's education. This is not the case. Based on their history in mainstream education and the ones that attended residential

schools, many Métis parents fear that teachers may expect less, or even punish their children because they are Indigenous.

Often times there are many other dynamics that involve stable housing and food security that take on a more active role. With the dissolving of traditional support structures and resources due to colonization, transience is a huge problem in the Métis community. Métis parents often live in rental housing. They move frequently to access better or more stable housing or employment or access to food security. Often times, there is not a grocery store in their neighborhood, or access to a community agency that provides a food program for the students. This fragments and disrupts their children's education and stable links to a school community. Despite all this, there are still many successful Métis families who engage with the school and teachers and are very involved in the revitalization of their language and culture.

Further, teachers who have good rapport with Indigenous children are often placed in the most difficult classrooms with extra students and fewer resources. Another problem is that the schools in lower socioeconomic areas where there is a higher percentage of Indigenous students are often not the schools experienced teachers want to work in. The system often places new teachers into these environments. The history of public education where I live is that Indigenous parents do not complain about teachers who do not know how to engage their students as often as non-Indigenous parents complain.

From a theoretical or curriculum perspective, the system might support teachers Indigenizing their curriculum, it might even be viewed as an important goal, but practically teachers might not be given the resources, professional development, and time they need to work towards learning or incorporating Indigenous perspectives. It is because of this that the *Treaty4 Project* was developed to support teachers.

Alison: If you were to explain treaty education to someone who has not heard of that term, how would you describe it?

Calvin: Treaty education is a contemporary term. I would explain it by using the historical treaties. Treaties were part of the history of Canada and were signed between the British Crown and the First Nations leaders at certain times in history. All of these treaties had clauses that covered land, rights, education, health, and behavior. Treaties were legal documents that require the descendants of both historical signatories to honor them. In Saskatchewan, the province of Canada in which I live, we all reside on land that was historically negotiated on, as part of a treaty, or is currently being negotiated. Learning about these treaties, the role we play in honoring the clauses of these treaties and interpreting the clauses in a fair and respectful way is a very good way for children to see the effects treaties have on the lives of all people who live on treaty land. It also enables all children to understand that the disenfranchised circumstances many Indigenous people currently live and have grown up in, have been the fault of the wrongs from the past. Teachers have a responsibility to teach about Canada's colonial history as this understanding and acknowledgement is foundational to a fair and equitable society. It is easy to examine what was proposed and agreed to in the treaties and look at the inequities that occurred and realize that the treaties were not, or have not, been implemented in a fair manner as they were intended. It is important to recognize that First Nations were recognized as being

sovereign nations under the Royal Proclamation of 1763 and that was the main reason for treaties to be required to be negotiated.

Alison: Were the early treaties (starting in 1871 CE) seen as the framework for peaceful co-existence—and if so, would you say they currently still reflect this intention?

Calvin: The first thing I would say is that the treaties were signed by both parties, so we are all treaty people and everyone deserves to know the truth and history of our province and country. There are several categories or clauses which flesh out the terms of the treaties. There are commitments and obligations from each side to each other. The first clause of the treaty negotiations is peace and goodwill. This clause continues to have value. It has always had degrees of strain on it but there have been very few incidents in history where the First Nations and Western society have not been able to negotiate in meaningful ways. What continues to be exposed through research and court challenges, is that the treaty obligations have not been fairly interpreted in relation to Indigenous populations. What is interesting is the more treaty relationships are explored and negotiated, the majority of criticism towards treaties is coming from non-Indigenous society as they are being required to share some of the benefits they have enjoyed. Modern Canadian society conveniently forgets or were never told of the huge benefits that they have enjoyed because of the treaties. The standard of living enjoyed by most Canadians rates very highly in world standards. Indigenous Canadians live at third world standards. When non-Indigenous peoples are asked to honor the intended clauses of the treaties, they are often offended and certainly one of the first reactions is that they are unwilling to share or "give back" some of that privilege. They perceive that Indigenous people are trying to "take away what is theirs", what they or their parents and grandparents have worked hard for. They forget (or were not told) that what they gained was originally taken (mostly through violent or murderous means) from Indigenous people whose parents and grandparents, going back thousands of years, all worked hard for it as well. It is important for all Canadians to understand this history and what is currently being explored to honor the legal agreements that were made in good faith by both parties involved in the treaty development process.

Alison: Why do you believe Treaty education is important?

Calvin: Treaty education is important because it creates a place to start the process of reconciliation and healing. Treaties are fact-based documents that come from a historical place. They are historical Canadian documents that are now being seen as foundational documents on which Canada was built. Treaties outline the big-picture items that can then be researched and studied. Teachers and students can examine, discuss, and interpret what they meant at that time and how they would translate 150 years later. They are agreed-upon clauses and it is very easy to look at the clauses and their interpretations to see if they have evolved in a fair and equitable manner. Teachers need to understand that Treaty education is part of Indigenous education in Canada. Treaties talk about a relationship between European newcomers and a wide array of Indigenous cultures. Understanding Indigenous worldview is critical to understanding Indigenous education and Treaty education as part of the bigger picture. Learning the impacts of how the treaties were implemented reveals very

much about the society in which we live. Canadian celebratory history takes a great deal of pride in presenting Canada as a *just* society and they pride themselves on their role in the world as being fair and equitable. A certain amount of discomfort occurs as the topic of treaties and how they evolved is explored. When one group of people benefits more than another group of people, it tells you that the treaties have been unfairly interpreted and it suggests that as a society we must work to together to find solutions. Students see these inequities and when they take what they have learned in school home to their parents, there is often an uneasiness created at the parental level.

I believe the children in our school systems have a remarkable sense of social justice and they quickly see the wrongs of the past. They do not look at things just in terms of economics and career options; they see things as fair and in terms of how it benefits all. Children are the leaders of tomorrow and it is through the learning of these disparities; they often strive to right them as they become adults.

Alison: Can you tell me about your *Under One Sun* project?

Calvin: The *Under One Sun* project began as a Community of Practice. I have worked closely on Treaty education and how to teach treaty outcomes to teachers and students for many years. One of my co-workers proposed we do a Community of Practice and invite K-8 teachers to come and work with us on how Treaty education can be incorporated into teaching, in all subject areas, and what activities and resources can be used to make this possible. It started as a session to unwrap the Treaty education outcomes. We felt it was key to unwrap the outcomes, so the teachers could better understand what they were supposed to be teaching. There are many things that have caused the treaties to be misinterpreted or misunderstood. There is also a huge disjoint in the worldview of the different parties. It is a very challenging area.

Alison: Tell me more about a Community of Practice.

Calvin: In theory it is where a group of like-minded individuals come together to discuss topics that they have a shared interest in. It is through this process, they can learn from each other and become much more informed learners from the process. We had hoped that teachers would come with many ideas on how they taught Treaty education to their students. The ideas they brought were few and my colleague supplied most of them. Jackie had taught from K-8 over her career and had a wide range of incorporating Indigenous content into the existing curriculum. As previously stated, it started to unwrap the Treaty education outcomes; the second part was connecting learning opportunities/activities to the outcomes.

Alison: How did the Community of Practice event go?

Calvin: We billed it as a Community of Practice but in order to make if work we had to prepare background information that had not been pulled together before. After many hours of preparation and discussion, my co-worker and I hosted a Community of Practice for all grade levels from K-8. Teachers were invited from our entire system which has 44 elementary schools. The school division is located in Regina, Saskatchewan and has approximately 1000 elementary or K-8 teachers. The meetings were held at the central district board office and were held after school hours. The meetings were hit and miss in respect to attendance: some grade levels were fairly well-attended, and some were not as well attended as we hoped for. Regardless, the

attendance level was lower than I believe it should have been. What was successful were the presentations themselves. I consider my colleague a master teacher and she has amazing teaching ideas. She also has many years' experience at the K-8 level. She identifies as Métis and has spent over 25 years teaching in an inner-city environment with the majority of her students being Indigenous. Myself, I am more of an historian and I have a very good grasp of Canadian history, the treaties, and how Canadian confederation has impacted Indigenous people. I felt we had put together a very good starting point in which to engage the classroom teachers and we saw the potential to support teachers as they explored what this topic meant for teaching and learning. During the process of delivering a session of the Community of Practice, we were visited by two members of a publishing company. They quickly saw the potential of how this project could turn into a classroom teaching resource and approached us on what they thought was possible.

Alison: How did this project come about?

Calvin: The project came about by luck or fate. The individuals happened to be at the board office meeting with our resource purchase people. For Indigenous materials, I was included into the process. We were delivering a Community of Practice session that day and I invited them to attend. They came and enjoyed the session. They asked if they could return and came back the following week to participate again. From our sessions and in discussion with them, the possibility of a project emerged and then evolved. For my colleague and I, it came about because of frustration with the lack of classroom resources that were age appropriate for students. There was a lack of teacher-friendly materials. Our idea was to create a resource for Saskatchewan teachers that helped teachers teach the Treaty Outcomes. Teachers want literature and resources that connect to the lessons to help them teach. We believed this was an important thing to support.

Alison: What were the publishers looking for in this resource? Were there any differences in your beliefs and the publishers?

Calvin: The differences in belief systems between the teachers, publishers and us, as writers, were many. I don't speak for the non-Indigenous educators but can only assume their beliefs. However, teacher beliefs seemed to emerge as a fundamental theme in this project. Teachers very much want a well-planned resource with lessons and teaching activities that would help them teach Indigenous content or show an Indigenous perspective from a secure place with no potential for backlash from parents or society in general.

One of the main themes that I observed was the idea that Western organizations or power structures believe they have been given the authority to speak for everyone within their jurisdiction. For example, an elected official or Chairperson of the Board of Directors will speak on behalf of people, with the assumption that they all think the same way. Indigenous people believe that you can only speak for yourself and that you do not, and should not, speak for anybody else.

In relation to what the publishers were looking for, as they were a large Canadian publisher, they first and foremost were looking for an Indigenous product that was a levelled literacy resource that was unlike any other resource that existed in Canada. They said that there was nothing out there that included a balanced approach with

all the literacy components; including read aloud, shared reading, guided reading, Elder videos, all focusing on reading, writing, listening, speaking, viewing, and representing strategies. They also wanted the resource to include Treaty education and Indigenous ways of knowing and to be a balanced literacy approach. Further discussion led to my colleague suggesting we highlighted the content that spoke to the Truth and Reconciliation Report that had just been released and they could be a marketing tool. They had their own processes, staff in place across the country and had some very definite plans and goals for this resource.

I believe that the publishing company felt there was a great need to provide revised curriculum resources that reflected a more modern Canada: a Canada that had just gone through a major reawakening of its social political history. The Royal Commission on Aboriginal Peoples[5] was undertaken in 1991. It was a huge report that was published in 1996 and had over 400 recommendations. I believe it was a huge study on the history of Canada and the role of churches in relation to the persecution and dismantling of Canadian Indigenous peoples through residential schools. It revealed a past that the majority of Canadian society had not heard. It revealed a 120-year period where Indigenous children were placed in residential schools and often abused. They were denied the right to speak their language and practice their culture and for the most part lost aspects of their identity. This sparked controversy and a need for a political reawakening with a determination to make things right by the Canadian people from all backgrounds. This process requires an examination of the past in order to understand how to move forward.

In relation to the differences, there was a huge disconnect in the beliefs of the publisher and the Indigenous community. They looked at things in terms of products while the community thoughts were about a process of being heard and understood. Also, the reviewers were all Western trained and looked at the content from an academic, journalistic perspective. A difference in the worldview existed and this was evident in all aspects. One example was how terminology was used and understood. Understandings of "colonizer", "visitor", or "newcomer" varied greatly between these communities, which led to discussions about how they were applied and understood.

Alison: How does this project link to the Truth and Reconciliation Commission in Canada?

Calvin: The Truth and Reconciliation Commission emerged from the Federal Apology on Residential Schools and became a blueprint on how Canada could resolve its past practice and history on residential school and the treatment of Indigenous peoples. The Government presented a report that outlined what happened and made 94 recommendations of how Canada could move forward in the areas of education, health, justice, child welfare, language, and culture.[6] Many of the recommendations

[5]For more information on The Royal Commission on Aboriginal Peoples please see https://www.bac-lac.gc.ca/eng/discover/aboriginal-heritage/royal-commission-aboriginal-peoples/Pages/final-report.aspx.

[6]For more information on The Truth and Reconciliation Commission of Canada: Calls to Action, please see https://nctr.ca/assets/reports/Calls_to_Action_English2.pdf.

were then acted on based on how it could or should be done in the Canadian and international context. It called on agencies and systems to assist in the process. It also then called on the churches to apologize for their role in the residential schools and to create educational materials to teach about that history and to provide opportunities for Indigenous people to participate in that process. It encouraged the creation of programs for youth. Museums and archives were requested to upgrade information to better represent Indigenous people and to more fairly reflect history. It called on a recognition of Indigenous people who attended residential schools and those who perished and were buried. It called on the media, business, and the sports world to become more involved in recognizing Indigenous history and improving relationships.

The 400-plus recommendations led to investments in Indigenous education. It led to apologies by the churches and the Canadian Government. It created a process that allowed for Aboriginal healing at the community level and many community hearings occurred that allowed for Indigenous peoples to tell their story of their experiences. This led to the Truth and Reconciliation Commission. This most recent report came out with 94 recommendations of how Canadian society, their government, and Indigenous peoples could work together to create a better society that was fair and just for all Canadians. This report was released in the summer of 2015.

Large amounts of investment were required to ensure the Truth and Reconciliation Commission recommendations were enacted, and the Federal Government signaled and committed huge investment in Indigenous education and research. The publisher saw a market for a resource that we were talking about at our Community of Practice. Our resource was developed by and for teachers and took the Treaty education outcomes that had been updated and released in the province of Saskatchewan and made them accessible and usable in classrooms. The publishers asked if we could write classroom materials in book format that could be marketed as a resource that met the teaching outcomes in Treaty education. The teaching outcomes are set by the Saskatchewan Ministry of Education for all grade levels K-12 and all subject areas. Specifically, they requested a focus on Indigenous perspectives and Indigenous ways of knowing through children's story books that offered a leveled reading strategy to improve English literacy. They also requested a teachers' guide, so we shared the Community of Practice materials for inclusion into the guide. The project then expanded to having Elder videos and direct connections to the Truth and Reconciliation Commission.

Alison: Can you provide us with a few examples of the *Under One Sun* books and what you wanted to achieve?

Calvin: The early years K-3 format was of little, leveled books that introduced different themes around relationships: relationships with self, with family, with Elders, with community, with animals, and with nature or the environment. However, the stories were not neatly divided into these categories. For example, in the Grade 1 book, *What Do You Share?*, a young child asks the garden, the rabbit, the fish, a berry-bush, the beaver, the bee, and his grandmother what they all share with him, and each communicates what they share (Figs. 5.2 and 5.3).

Fig. 5.2 What do you share Grandmother? Permission from Nelson Publishers Canada

This illustrates how all relationships are interconnected and how everyone depends on each other (including nature). The book *What Does Mother Earth Share?* extends this theme. We used photos of a worm, a goose, and a beaver and showed their daily contributions to the ecosystem. This reflects the Indigenous way of seeing how everything is interconnected. In the books we very much focused on Indigenous worldview and how this worldview centers on connections to the Earth and the value systems of Indigenous people. This philosophy can be seen in every book.

Next, I see a rabbit in the field.

"Rabbit, what do you share?" I ask.

"I share my meat," replies the rabbit.

Fig. 5.3 What do you share Rabbit? Permission from Nelson Publishers Canada

The book *What Is A Family?* was written for Kindergarten children and shows how all families are different but yet the same. We represented different kinds of families—a family with: a mother and a father; two fathers; one mother; one grandmother; one moose and her calf; and a mare and her foal (Fig. 5.4).

We wanted to teach that families can look different and for students to understand that animals have a family too. We also want students to see that we all share common ways of living, we all belong, and we all are necessary to make the world function as the Creator intended; we are all connected (Fig. 5.5).

The middle grades (Grades 4, 5, and 6) had a card-style format with four-fold-out cards (8.5 by 11 inches). In these cards we focused on explaining treaty clauses, what they mean, how they were interpreted, and how they varied in Canada over the years.

Fig. 5.4 What is a family—Humans? Permission from Nelson Publishers Canada

In the cards (Grade 5) *What Treaties mean to you?* we used a student blog format and had students from different places respond to a student's blog. Our aim was to show that treaties across Canada mean different things to different people and that they impact people differently. We used a student perspective to show that treaties have a place within today's society (Figs. 5.6 and 5.7).

In Grades 7 and 8 we used an 8–12-page magazine format. We encouraged students to examine their own value system and perhaps become better citizens by exploring diversity through art, music, blogs, interviews, and personal research. In Grade 7 the *Mother Earth Edition* looks at Indigenous worldview and looks at the clash between an environmental perspective and sustaining Mother Earth or an economic perspective. The image is the Cree worldview and shows how we are all part of the Creator's plan (Fig. 5.8).

Alison: How much autonomy did you have over the project?

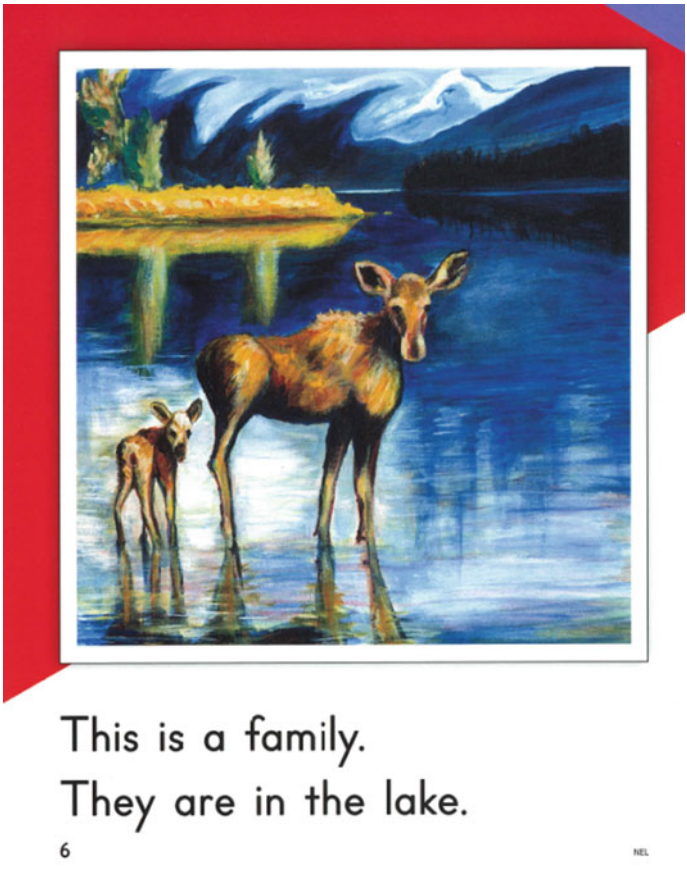
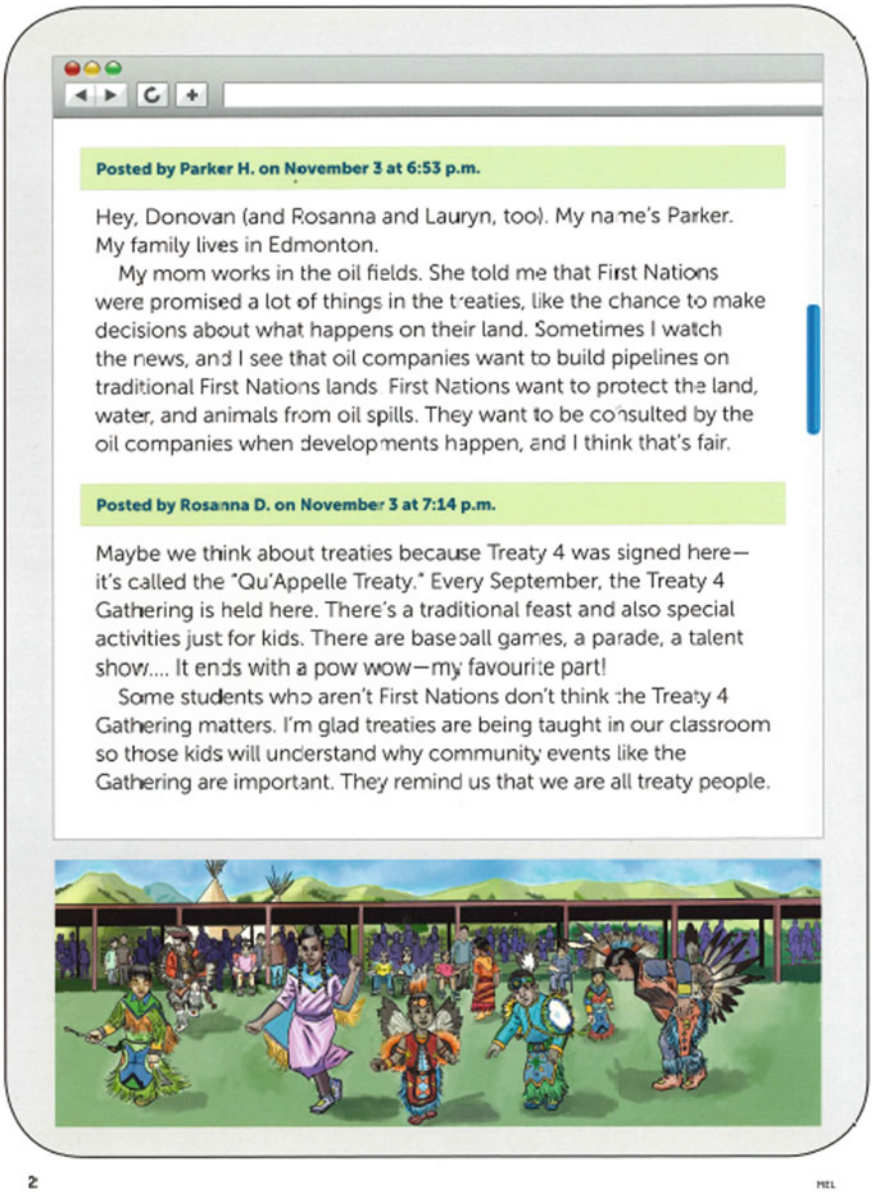


Fig. 5.5 What is a family—Moose? Permission from Nelson Publishers Canada

Calvin: The publisher had a strong sense of what they wanted, and they believe the market was there for what they had in mind. They needed it to be written by Indigenous writers and illustrated by Indigenous artists. They wanted a newer version of Canadian celebratory history that spoke of the wonderful composition of Canada that presented treaties in a positive light and that all was well in Canada. They did recognize that a newer story needed to be told, one that could be told to children that spoke of the evils of the past but could be presented in a way that provided a way forward. They also felt that the Canadian education system was ready for this and a huge appetite existed that they could market a resource of this nature.

As writers, we wanted to present stories that spoke of the evils of Canadian history and told how treaties were not being implemented fairly: stories that showed how First Nations, Métis, and Inuit people had not benefited from treaties and that all the benefits went to settler Canadians. The disparities were obvious to us and a reality that we had all lived. We desperately wanted to tell our side of the story.



Posted by Parker H. on November 3 at 6:53 p.m.

Hey, Donovan (and Rosanna and Lauryn, too). My name's Parker. My family lives in Edmonton.

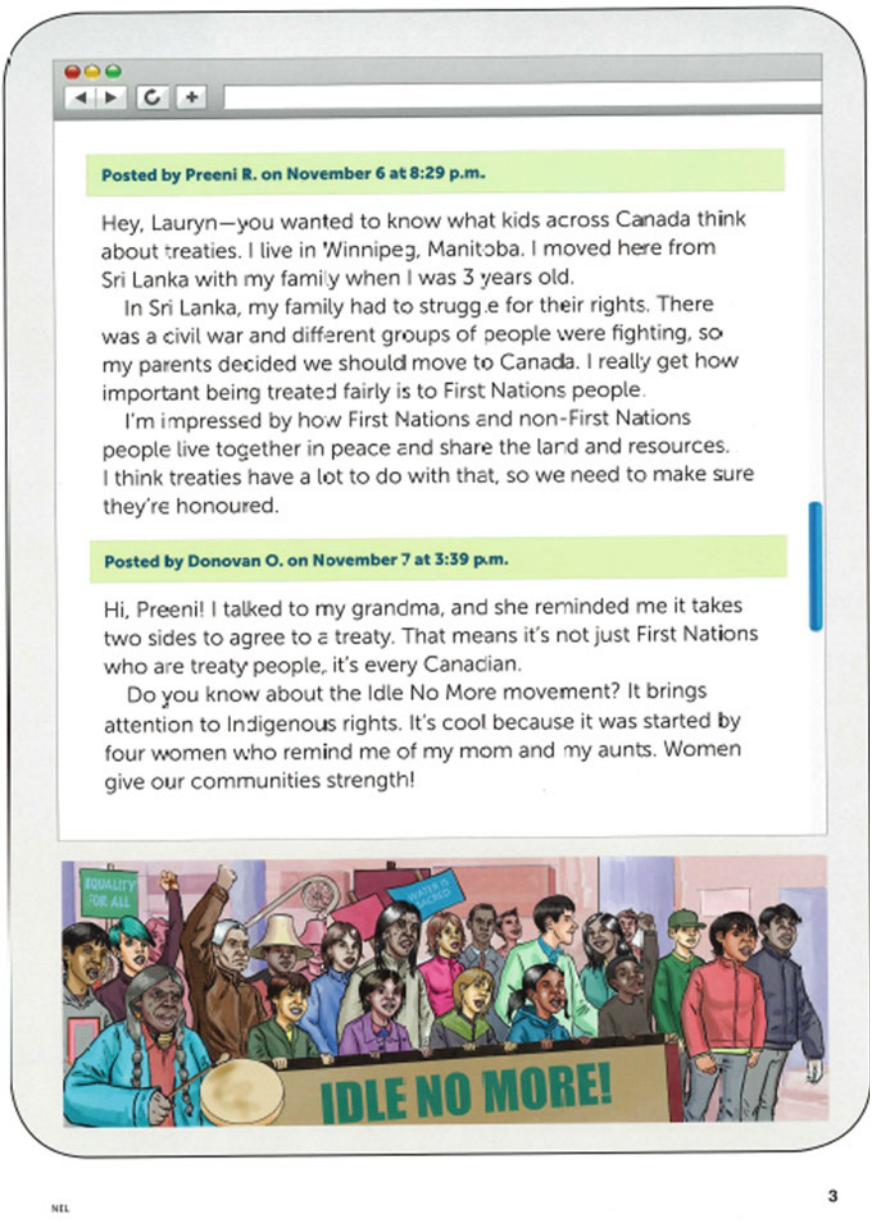
My mom works in the oil fields. She told me that First Nations were promised a lot of things in the treaties, like the chance to make decisions about what happens on their land. Sometimes I watch the news, and I see that oil companies want to build pipelines on traditional First Nations lands. First Nations want to protect the land, water, and animals from oil spills. They want to be consulted by the oil companies when developments happen, and I think that's fair.

Posted by Rosanna D. on November 3 at 7:14 p.m.

Maybe we think about treaties because Treaty 4 was signed here—it's called the "Qu'Appelle Treaty." Every September, the Treaty 4 Gathering is held here. There's a traditional feast and also special activities just for kids. There are baseball games, a parade, a talent show.... It ends with a pow wow—my favourite part!

Some students who aren't First Nations don't think the Treaty 4 Gathering matters. I'm glad treaties are being taught in our classroom so those kids will understand why community events like the Gathering are important. They remind us that we are all treaty people.

Fig. 5.6 What treaties mean to you? Permission from Nelson Publishers Canada



Posted by Preeni R. on November 6 at 8:29 p.m.

Hey, Lauryn—you wanted to know what kids across Canada think about treaties. I live in Winnipeg, Manitoba. I moved here from Sri Lanka with my family when I was 3 years old.

In Sri Lanka, my family had to strugg.e for their rights. There was a civil war and different groups of people were fighting, so my parents decided we should move to Canada. I really get how important being treated fairly is to First Nations people.

I'm impressed by how First Nations and non-First Nations people live together in peace and share the land and resources. I think treaties have a lot to do with that, so we need to make sure they're honoured.

Posted by Donovan O. on November 7 at 3:39 p.m.

Hi, Preeni! I talked to my grandma, and she reminded me it takes two sides to agree to a treaty. That means it's not just First Nations who are treaty people, it's every Canadian.

Do you know about the Idle No More movement? It brings attention to Indigenous rights. It's cool because it was started by four women who remind me of my mom and my aunts. Women give our communities strength!

Fig. 5.7 What treaties mean to you? Permission from Nelson Publishers Canada

Fig. 5.8 Eagle is a very important bird and is considered a protector of the world. Permission from Leah Marie Dorion, artist. http://www.leahdorion.ca/

We soon learned that because the publishing house owned the project, they made the rules. However, they were willing to work with us to find compromises. We wrote stories that allowed for an understanding of a new reality, one that told some truths and ultimately exposed the Canadian education system to a new perspective.

Alison: Can you talk through an example?

Calvin: One of the examples that we were constantly at odds with the publishing company over, was that of treaty negotiations. The publisher and the editors were quite happy with saying that the treaties were signed by the settlers and the First Nations. They felt that this was an easy way for children to understand the process of two different peoples making a deal or a treaty. We, on the other hand, had gone through many years of university classes on Indigenous history and the struggle for Indigenous rights, land claims, identity, and even being recognized as human beings according to European law. We insisted that it be recognized that treaties were made by First Nations leaders and the British Crown on behalf of the settlers. This recognized a nation-to-nation negotiation and that First Nations were sovereign and had the ability to negotiate treaties. Settlers were not sovereign and required a government to negotiate on their behalf. We repeatedly would have our stories and wording edited to change the intent in the text and also in the teachers' guide. We repeatedly would insist that this be reversed. It was more problematic at the lower levels due to the complexity of participants and process. It became easier as the grade levels increased. They did not feel it was a big issue. We had many years of personal history that mattered to us and we felt it very important. However, we would rewrite passages to compromise or change content in order to avoid the conflict. There were other examples but that is one that was easy to explain.

Alison: What other obstacles did you come across?

Calvin: The obstacles were not what we expected. The biggest obstacle was that we really never had a blueprint to follow. We were not trained as writers or authors. We had to write to leveled text requirements; we had to use certain sight words; we were

limited to the number of words we could use and word choice. We were asked to write to a formula that we didn't know and that we had to learn it on the go. We were introduced to a world that existed but predominantly had no place for Indigenous viewpoints and worldview. We were asked to create this.

We entered into a process that was founded on Western models. We had editors and reviewers from the Indigenous academia. This was an interesting area. All feedback came in a critical format and came from the historical academic viewpoint that they learned from journal articles or Western-based history. The feedback was not community based and as a result, did not prove very helpful. We were trying to tell a story that did not simply rehash the same tired version of Canadian history that we had all learned.

Alison: Is there an example that you could share from the historical legal or political area that caused you difficulty while working on the project?

Calvin: The Canadian political system has the Indian Act which is a good example.

The Indian Act was passed in 1878 by the Canadian Government. It was passed by the elected legislators (all non-Indigenous) and there was no consultation or involvement of the Indigenous peoples. This piece of legislation had three main purposes. Firstly, it identified the criteria that the government would use to recognize the individuals that they deemed as "Indians". Secondly, it was created to civilize and Christianize the "Indians", and finally to control the lands that were "reserved for Indians". It placed First Nations people in a position where they could not make decisions that affected their lives and basic actions required permission from the Federal Government (First Nations people were seen as wards of the government and did not have any citizen rights such as voting rights or land ownership rights and therefore could not make decisions without government approval.) **The Indian Act has had many revisions, but it still exists!!!! And it still has many negative barriers for First Nations people. This piece of legislation is deemed racist and it still totally governs the lives of First Nations people**. Our political system, education system, health system, justice system, kinship system, and economic system are all heavily influenced by the Indian Act. The results of what we can and cannot do can be seen in the statistics between different Canadian societies. Canada is deemed to be in the top five for living conditions for mainstream Canadians. However, First Nations peoples are deemed at a level of 67th in the world, or similar to many third world countries, and this is a direct result of the Indian Act.[7]

There certainly was no shortage of issues to write about, the problem almost became which ones *to* write about. Canada is a large country, and there are many areas that have never been included in the treaty process but any First Nations people who lived in those regions were still affected by the Indian Act. To offer a resource that explored these issues with an audience wider than Saskatchewan, the content of the *Under One Sun* books had a national focus and reflected the realities and the role of treaties in different parts of Canada. We were acutely aware of how the

[7]For more information about the Indian Act please see https://indigenousfoundations.arts.ubc.ca/the_indian_act/.

misapplication of treaties, as well as the Indian Act, negatively affected First Nations people all over Canada.

To develop the books, we continued to use the Saskatchewan teaching outcomes for Treaty education as our guidelines. The outcomes are mandatory for the teachers to cover in Saskatchewan. Treaty education is also considered mandatory, but the outcomes are separate from the subject area outcomes and the teachers are expected to weave them into the course of their teachings. The teachers may or may not include the Treaty Outcomes because they are not required to be on the report cards. The Saskatchewan curriculum uses outcomes instead of objectives. The outcomes are applied to each grade and there are specific themes or outcomes that the teachers must cover. The teacher is allowed to use whatever means they wish to teach the outcome, but it is expected that the students will know them by the end of the grade level. These outcomes are reported for the student assessment which we refer to as report cards. These outcomes are predominantly Western based and treaty education is mostly ignored.

The Métis and the Inuit have different realities in relation to the treaty agreements, as governments did not include them in the treaties. These groups were not seen as "viable" citizens and so were not to be included into mainstream society. The Inuit were later given similar rights as First Nations in 1939. The Métis recently won a court case that may lead to similar rights.[8] These communities, the community of my peoples and the Inuit, were marginalized and their needs and issues were never considered significant or important in the decisions of the larger society. However, it was hard to directly say this in the books as we had to negotiate the political correctness that we could write, the reading levels of our audience, and the ability of creating a marketable product.

We also realized that the Indian Act and the Federal government still control and make the decisions for First Nations people. We found many examples that we could not write about. The stories of failed projects, unfair treatment, suicide, and social malfeasance were many. Actually, it was much harder to find positive examples.

Alison: How has *Under One Sun* been received in Canada?

Calvin: *Under One Sun* is being marketed by Nelson Education. It has been on the market since 2017. It came out two grade levels at a time, starting with the younger years. The Grade 7 and 8 resources have only been out since 2018. The Nelson team have done a very good job on promoting, supporting, and marketing it across Canada. They recognize that this is the "first out of the chute" and that other publishers are frantically creating resources. It is being well received by teachers. Teachers have long recognized the need for resources of this nature. They always talk about having to adapt or use non-specific resources that are outdated. Teachers have also complained that they may access needed teaching content but do so without proper supporting materials. The teachers are happy to receive this resource but also quickly remind us that this is the first of the many resources that seek to Indigenize education that are needed to close the gaps. One of the strengths is this is a levelled literacy resource

[8]For more information about Canada versus Daniels 1999 please see https://ablawg.ca/2014/11/21/supreme-court-of-canada-grants-leave-to-appeal-in-daniels/.

and is being incorporated in new provincial curriculum outcomes as a dual resource to teach literacy as well as Indigenous education. The project is being well advertised and seems to be well received across Canada. As a writer, I receive a royalty payment and other writers have told me that I am doing okay in the area of royalty fees. One of the Nelson representatives said that *Under One Sun* was their top-selling product for that time period.

Alison: The resource seeks to support teachers to include Indigenous perspectives into their practice. How does this relate to decolonizing pedagogies, and what does this term mean to you?

Calvin: A pedagogy is how we teach our children our value system. We need to look at what we are teaching and why we are teaching what we do. We need to decolonize our teaching. What I mean by that is that our history has been written from a Western-based worldview and it offers the narrative that all good things come from Europe. To decolonize we need to share the values and the contributions of the Indigenous people in the curriculum. The teachers need to show the richness of the history of Indigenous people and to use a balanced approach. Indigenous children must be able to honor their ancestors and their worldview.

Teachers need to look at the low success rates for Indigenous students that colonized teaching methods have brought about. The statistical data show the huge gaps that exist. It is so easy to see the need for resources that speak to Indigenous students. Children need to see themselves in the things they are learning. If they see no place for them, they disengage. I worked as an educator for 34 years and every day of my professional life was dedicated to levelling the playing field, in that I offered Indigenous students a way into the curriculum. I firmly believe that most teachers are like doctors. They take a Hippocratic Oath to perform their jobs to the best of their ability to every student that walks through their door. In order to meet the diversity of cultures and to address the gaps that exist, they need all types of teaching resources: resources that allow students to see themselves in what they are learning.

Decolonizing materials is a nice term. We have to remember that we all live colonized lives. It doesn't matter if you are the colonizer or the colonized, we have a colonial view. In order to move beyond, we need to see the bigger picture, other perspectives, and learn the full extent or range of the experience. We have to understand that we all put our pants on one leg at a time and that economic advantage does not give you the right to dismiss another person.

Alison: What advice would you give to educators new to Indigenizing their practice?

Calvin: Indigenizing education is not easy. There are many challenges brought on by Canada's colonial history. It takes a great deal of effort on the part of the teacher. It is a place where you will find all sorts of challenges. But once you achieve a level of success, you can never go back. Teachers enter the profession to be the best they can be, they want to make a difference. In this area, the struggle is real, and it has many turbulent times. However, teachers are finding that the addition of Indigenous content into the curriculum enhances their content, makes it more interesting, and provides a link from the historic to the contemporary.

The rewards are not hard to come by if you work at it. You get rewards when you see Indigenous and non-Indigenous children very engaged in the content and interested

in what you are teaching. It is wonderful when you experience the lightbulb moment when they start to make connections. You get a great deal of internal gratification because you know that you are making a difference and when the parents engage, it is even better. The greatest rewards I have found have occurred since my retirement. I am often contacted by a former student through Facebook, or I run into them at my grandchildren's sporting events. They tell me that I was the reason they came to school or that I was their favorite teacher and that I have an honored place in their world. There is nothing more special than being introduced to their children as their favorite teacher when they were in school. They tell me that they and their children are doing well, and they believe that I had an important role to play in it. Indigenous education has many peaks and valleys but the relationships you form along the way last a lifetime.

Indigenizing education is an education that highlights the beliefs and perspectives of some of the oldest cultures in the world and gives you a wonderful opportunity to be the best teacher you can be—one that acknowledges you as a caring human being.

My final thought is that you need to know that Indigenous education is not an easy area. The university system did not teach us very much in the way of Indigenous content. Many of the Indigenous teachers may not necessarily have been brought up with an Indigenous value system. It requires work and you will make many mistakes along the way. But you can't worry about making mistakes because they are an important part of the learning process.

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Calvin Racette is a Canadian Métis man who has recently retired after 34 years of working in many different levels of Indigenous education. He feels very fortunate to have received his Master's degree with a total emphasis on Indigenous education and Indigenous values. He has written several publications and served as a resource for many video productions. His goal to level the playing field is ongoing. His four children all have successful careers and his nine grandchildren are immersed in learning their traditional values.

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works on, Yugumbeh/Kombumerri traditional lands in Australia. She spent 15 years in the Southwest region of the Anishinabek Nation in Canada (Ontario) and five years on Treaty Four lands in Canada (Saskatchewan). In 2008, she was a Smithsonian fellow in Washington, D.C., where she collaboratively investigated Indigenizing science education. Prior to her tenure at Griffith University, she was the chair of science education at the University of Regina, Saskatchewan, Canada. Here she investigated the impact of Whiteness and White privilege in formal education and how it disenfranchised First Nations students. This led to collaborative work with local First Nations communities to co-develop curricular materials that respectfully incorporated local Indigenous ideologies and perspectives in the teaching and learning of science. Her publications include three books, and many peer-reviewed papers and chapters in the field of education, plus two government reports on First Nations science education. Over the past two decades, she has presented more than 50 international conferences and received awards for her teaching. She has been the principal researcher on many successfully completed competitive grants and has supervised many graduate students.

Chapter 6
How Embedding Indigenous Knowledge Systems Will Help the Teaching and Learning of Western Science to Evolve

Alison Sammel

Abstract This chapter speaks to the author's belief that Science education needs to evolve. In an era where human activities have changed planetary ecosystems, Western Science and its associated technologies have played a role in humans becoming the dominant driver of accelerated changes in the Earth's climate. Science and Science education need to transcend the thinking that has led to this situation. Both need to be more relational in their perspectives. As such, Western Science has much to learn from Indigenous knowledge systems (IKS) (This paper will use the term Indigenous knowledge systems (IKS) to acknowledge there are as many knowledge bases and systems of developing knowledge as there are Indigenous peoples (IP). This plurality recognizes and values the many ideologies, philosophies, practices, protocols, forms and types of Indigenous knowledges globally. Traditional ecological knowledge is one aspect of IKS). This chapter will present different ways of integrating IKS in classrooms but ultimately suggests that Indigenous ideologies, rather than Indigenous "facts or practices," should be infused throughout the teaching and learning of a relational Science education agenda. By exploring a case study of how the author's own preservice students understood what it means to embed IKS into their future teaching practices, the author reflects on her teaching practice to imagine how spaces could be created where Western Science and IKS can be exchanged, discussed, and can co-exist.

This chapter speaks to my belief that Science education needs to evolve. In an era where human activities have changed planetary ecosystems, Western Science and its associated technologies have played a role in humans becoming the dominant driver of accelerated changes in the Earth's climate. Science and Science education need to transcend the thinking that has led to this situation. Both need to be more relational in their perspectives. As such, Western Science has much to learn from Indigenous

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knowledge systems (IKS).[1] This chapter will present different ways of integrating IKS in classrooms.

The integration of IKS within formal school curricula has received compelling support from the United Nations, in international forums around key issues such as sustainability and climate change (UNESCO, 2010), and in terms of Indigenous people's rights (Ma Rhea & Anderson, 2011). The inclusion of IKS is further supported by the Australian Curriculum, Assessment and Reporting Authority (ACARA) which sets the formal schooling educational expectations for Australia (ACARA, n.d.). Specifically, Aboriginal and Torres Strait Islander histories and cultures is one of three national cross-curriculum priorities within the Australian Curriculum. It was developed to provide "the opportunity for all young Australians to gain a deeper understanding and appreciation of Aboriginal and Torres Strait Islander histories and cultures, deep knowledge traditions and holistic world views" (ACARA, n.d.). Similarly, in Canada, the many Provincial Ministries of Education, to varying degrees, endorse and support the inclusion of Indigenous knowledge and perspectives in the formal curriculum. Many Ministries of Education, including in the province of British Columbia, emphasize the incorporation of local examples of traditional knowledge and promote collaboration with Elders and other Indigenous knowledge holders (Snively, 2016). This is also reflective of a growing number of textbook resources in both Canada and Australia that promote and acknowledge IKS through the inclusion of traditional ecological knowledge (TEK). Snively (2016) provides an overview of how the Science text, *BC Science Probe 7* (Mason et al., 2005, p. xxi), perceives TEK:

> The spiritual connections among all living things, combined with the centuries of Aboriginals' experience and observation of their environments, means that vast bodies of knowledge about their environment have been gathered. Traditional Ecological Knowledge, as it is called today, is important to a full understanding of environments, species, and ecosystems. TEK is based on the following ideas:
>
> - Creator made all things one.
> - All things are alive, related, and interconnected.
> - All things are sacred and should be respected.
> - Balance and harmony are essential among all life forms.

Based upon the discussion of strategic essentialism discussed in Chap. 1, I am not advocating that all TEK from local communities are the same, but suggest that sometimes to aid in understanding complexity, it is helpful to temporarily essentialize the foundations of TEK in order to draw attention to a different way of coming to know the world from that of Western philosophies. As such, this essentialized concept of TEK communicates a common underlying cultural philosophy shared

[1]This paper will use the term Indigenous knowledge systems (IKS) to acknowledge there are as many knowledge bases and systems of developing knowledge as there are Indigenous peoples (IP). This plurality recognizes and values the many ideologies, philosophies, practices, protocols, forms and types of Indigenous knowledge globally. Traditional ecological knowledge is one aspect of IKS.

by Indigenous peoples, where IKS stems from a deep and sacred interconnection between all aspects of the planet (Snively, 2016). What is acknowledged in this framing of TEK is how Indigenous peoples understand, interact with, and deeply recognize how their survival depends on the totality of their environment. This survival rests upon understanding how biological, cultural, and linguistic manifestations of community life are interrelated and have co-evolved together to form complex, adaptive socio-ecological systems. In other words, in order to survive for thousands of years, Indigenous peoples have engaged in holistic, analytical observations of the natural environment, built awareness of natural patterns and relationships, and deeply integrated this knowledge of the local ecology into their cultural processes, languages, and stories (Cocks, Alexander, & Dold, 2012). To varying degrees, each Indigenous culture continues to maintain and practice what has been learned from their Ancestors while adapting to present-day understandings and conditions. As they adapt, they continue to enhance the knowledge base of their local communities. The knowledge, stories, language, and ideologies of these communities reflect the biodiversity of that specific location. Preserving the rich, holistic knowledge of local ecosystems will only be effectively retained if cultural diversity through ideology, language, and story is conserved. To do this, Indigenous peoples' cultures, languages, and stories must be understood for their uniqueness and prioritized as essential within all communities globally (Toledo, Boege, & Barrera-Bassols, 2010).

From this perspective, TEK refers to more than just language, grammar, and syntax, but constitutes a repository of cultural memories that underpin what Krauss (1992) calls *the intellectual web of life*, which is not only essential to human survival, but crucial to the healthy functioning of the biosphere. TEK recognizes kinship: that all aspects of the biosphere are a part of a complex relationship. And all are linked to spirit. This recognition of the connection of spirit to all living and non-living components (as classified by Western Science) of the biosphere allows the cultivation of respectful, responsible, and moral relationships between these diverse parties. Baker (2016) suggests that understandings of kinship are common practice among Indigenous peoples as they acknowledge plants, animals, water, mountains, earth, moon, sun, and sky as relatives. Humans, therefore, need to be mindful of the responsibilities associated with maintaining these relationships (Whyte, Brewer, & Johnson, 2016). Martin (2003) advised that "we are part of the world as much as it is part of us, existing within a network of relations amongst Entities that are reciprocal and occur in certain contexts… our Ways of Being are about the rights we earn by fulfilling relations to Entities of country and self" (p. 209). Part of these relationships are the reciprocal responsibilities other beings and entities have to humans. As such, there are practices and protocols that must be observed to ensure humans learn from other beings, entities, and nature itself. Whyte et al. (2016) advise that humans must be humble and recognize their deep interconnection to all things, as "it seems Indigenous protocols may approach the human condition as not a struggle to know the universe; the condition rather is to know ourselves well enough so we can act morally in the universe" (p. 31). Baynes (2016) states, "Indigenous knowledges are more holistic than Western modern Science, linked to unified cosmologies of being, collectively generated and contextually, rather than universally understood" (p. 81).

Knowing ourselves as humans *in relationship* with all aspects of the universe, rather than just *knowing the functioning of the universe*, may be one of the great philosophical differences between TEK and dominant Western Science. Even though both seek to make sense of the natural world in order to understand patterns, Western Science and TEK are underpinned by different epistemologies and ideologies. For this reason, this chapter differentiates the ideologies and epistemologies of Western Science and TEK. This acknowledgement does not imply that the processes in Western Science are superior to the process of generating knowledge in TEK. Indeed, I argue the opposite, and seek not to misappropriate TEK by using the rhetoric of colonialism (by insisting it should be somehow subsumed or integrated into the word "science"). What I am stating is that the Western discipline of Science has its own set of rules that are acknowledged and endorsed by the Western scientific community, which is privileged in the Australian school curriculum. In the same way, TEK has its own foundational beliefs, processes, and validation mechanism that are supported and endorsed by their own communities; however, they are not privileged in school curricula. Tension arises when these knowledge bases are compared and contrasted in unreflected ways, as problematic binaries reflect issues associated with power, privilege, validity, and marginalization. These emerging knowledge hierarchies are rarely dealt with responsibly (Sammel, 2008a, 2008b).

Historically, Western civilizations have dismissed TEK. The many processes of knowledge generation and the communication of findings through oral histories have been viewed as unscientific, unreliable, incomplete, and not credible (Nicholas, 2019). The very terms "Traditional knowledge," "TEK," and "IKS" are supposed to differentiate knowledge systems that are separate from dominant Western systems of knowledge (Simons, Nicholas, Andrews, & Carr-Locke, 2016). However, far from being unreliable or invalid, TEK employs disciplined processes of investigation and relies on empirical observations. The processes involved in knowledge collection and mobilization had to be accurate, evidence-based, and reliable, especially as the very survival of the community was at stake. Speaking to the process of how Indigenous peoples generate knowledge, Cajete (1999) states:

> Observation is emphasized. Indigenous people carefully observed aspects of Nature such as plants, animals, weather, celestial events, natural structures and ecologies of natural communities. They experimented with applications of their knowledge in the context of the environment or situation which was appropriate. (p. 84)

If change within the local ecosystem was needed, careful observations, over long periods of time, were conducted before initiating any change. Environmental modifications led to enhanced cultural knowledge. This process of developing specialized cultural knowledge is evident in Indigenous communities throughout time (Matsuura, 2005). These processes of coming to understand the natural world parallel the ways Western Science comes to understand the natural world. The differences stem from how the evidence is understood and processed through cultural beliefs, perspectives, and philosophies. For example, in Indigenous cultures, the reason for gaining an understanding of natural processes was not to control or manage nature, but to establish a deeper working relationship that would maintain harmony and

balance. Snively (2016) states, "generally, Indigenous societies stress order and harmony, but they also acknowledge diversity, chance and the unexpected" (p. 21). Western ideologies have deviated from this framing.

Background of Dominant Western Science

Since the industrial revolution, Western civilizations have been founded on the assumption that the natural world is inert or mechanical (that actions are not of free will but due to a stimulus-response). In this way, nature (aside from the human mind that allows free will) operated like a grand machine, and by investigating the specific functions and functioning of each part of the machine, it was believed that Science could come to understand how the whole machine worked. This reductionist understanding (reducing the machine down to smaller parts) assumed that the whole could be understood by isolating and investigating parts. To various degrees this assumption still frames Science and the teaching and learning of Science. In Science education, scientific concepts are chunked into distinct sections and taught for the mastery of each section. It is assumed that students will inherently connect learned sections together to gain a fuller picture of how the natural world works. This process of learning about the workings of nature by separating knowledge into distinct categories is reflective of the Enlightenment period more broadly.

In the Enlightenment era, alongside this reductionist science, the Christian church continued to espouse that humans were the only species with intelligent souls and divinely connected. Constructed as being less significant than humans, the rest of nature was ultimately viewed *in service* of humanity. Philosophy was also built on this understanding, with Aristotle advocating that only humans possessed a "rational soul" that provided access to the divine. Descarte proposed "the Great Chain of Being" that provided a hierarchy of living things, dichotomizing unthinking, mechanical objects (the human body, non-human animals, plants. etc.) and the thinking human mind (that being reflective of the divine). With humans perceived as the top of this Earthly hierarchy, Western civilizations progressed with the belief that by virtue of their intellect, humans were exceptional in regard to other species, and above or separate from things classified as "nature." This dualistic thinking of humans as distinct from nature still justifies the exploitation of those classified as objects (nature), and the dismissal of cultures who were perceived as being closer to animals and nature. Legacies of these beliefs still circulate in the collective consciousness, policies, and infrastructures of contemporary colonial cultures such as Australia and Canada. As highlighted throughout this book, this colonial culture needs to be challenged for multiple reasons. One of these reasons, as focused on in this chapter, is how these limiting beliefs, underpinned by systems of power, have brought about the Anthropocene and the Chthulucene.

The Anthropocene

The Anthropocene is the name given to this historical era (geological epoch) in which human activities have changed planetary ecosystems, such as generating mass species extinction and changing the composition of air, water, and land globally. In this era, humans have become the dominant driver of accelerated changes in the Earth's climate. However, the Anthropocene era is not just about weather patterns, or the disappearance of flora or fauna, or even the social or political unrest that follows these kinds of changes. This era is about the unpredictable effects that unsustainable human ideologies and practices are having on deeply integrated social/natural systems. The deeply integrated, complex relationship humans have with all aspects of the planet is not easily understood by Science or Western cultures; indeed, the English language does not have a word that captures this embeddedness. Even the concept of "humanity" defines our separateness from nature.

Far from being separate and superior to nature, our relationship with nature is complex, as the emerging consequences of Western ideologies and actions illustrate. Morton (2010) suggests humans share an "unbearable intimacy" (p. 50) with all of nature and the ecological emergencies we are now facing illustrate how deeply our actions influence this complexity and how wrong Western ideology is that distances humans and their beliefs and actions from nature. However, Haraway (2016a) suggests that it is not really humans per se who are to blame for this environmental crisis, but the era of Capitalocene or hegemonic world systems. She suggests that the narrative of Anthropocene points to a destructive ending and proposes a reframing of the way we think about this era through her use of the term Chthulucene. The Chthulecene explores how multiple species connect and interact in this multispecies world. She believes that the world is made up of ongoing multispecies stories and practices that highlight how we are all beings from, with, and of the Earth (Haraway, 2016b). Similar to the recognition of kinship (described above), Haraway believes that "all earthlings are kin" but "making and recognizing kin is perhaps the hardest and most urgent" challenge for humans (Haraway, 2016b). Interestingly, Western Science has always shown that humans have co-evolved with and are connected to ecosystems, yet within this understanding lurked a disconnection from nature. This disconnect was and is underpinned by the ideologies of humanism, reductionism, and the belief of humanity's unique and privileged position above animals, plants, and all other objects classified as natural. Foucault (1983) describes these ideologies as a set of themes that, though varied in their content, form an almost invisible thread that ties together our individual and social thoughts, understandings, actions, and infrastructures. In other words, these dualistic beliefs have shaped how Western cultures have come to understand ourselves and our place in the world. They speak to power relations and value judgments that support certain ways of knowing that are viewed as *natural*. Therefore, as much as Science shows we are part of nature, it seems *normal* to perceive humans as distinct or above nature. This perception of separateness is endorsed in many people's everyday experiences, as large populations in Canada and Australia live in cities where natural systems may be rendered

invisible and the infinite ways humans are supported by what Science classifies as nature can be ignored or discredited.

Formal education unfortunately perpetuates this dualistic perception as being normal. Historically and contemporarily, education is structured and restructured to suit particular political agendas which, most often, perpetuate the dominant norm. Educational aims, agendas, and structures reflect social *common-sense* practices which underpin curriculum content and design, classroom strategies and techniques, and evaluation and reporting methods. By reflecting on these common-sense assumptions in Science education, it is possible to recognize and reflect on what is constructed to be normal assumptions and practices, and to reimagine how things might be otherwise. For example, if we explore how the concept of breathing could be taught in traditional school Science education, you would find a focus on the lungs and other biomechanical mechanisms of the human body that enable air to be taken in, transported, utilized, changed, and released (linking to the concept of cellular respiration). Most of the time, it would be taught in relation to the students' own lives and the lives of other humans. Some teachers may mention that other animals share this mechanical ability to breathe, while animals without lungs have a variety of ways to transport oxygen into their cells so they can undergo cellular respiration. It could also be stated that cellular respiration is one of the characteristics that Science uses to classify something as *living*. This way of teaching Science is human-student-focused. It presents Science knowledge in age-appropriate chunks and expects mastery of these concepts. It assumes students will bring other chunked ideas together to form a more complex appreciation of how larger systems relate. The focus, however, is on understanding the knowledge chunks rather than how everything is interconnected and related.

Relational Thinking and Ecological Sustainability

Instead of seeing separation, making meaning though chunked knowledge, or identifying humanity as above nature, we need to see ourselves and our futures connected with non-human animals, plants, and ecosystems. To find a way through the challenges that climate change will bring, we need a different way of thinking than that which caused it. But how do we start to generate the magnitude of change that would be needed in order to do this in education? Stefan Herbrecher speaks to this challenge (FreshED with Will Brehm, 2018):

> So how to train humans to develop a self-understanding that is not based on an idea of humanity that is exclusive or exceptional. That is a great challenge, I think, for education now, because most curricula are all about and "centering" the human. The human is always at the center of these things, of course, and how could it not be? It seems like common sense. And humans, of course, are running the world and therefore they need to be brought by education to a position where they can run this world in a way that, on the one hand, prolongs, on the other hand, legitimates their role, but of course, in a humane way. Now, if you wanted to scratch at that consensus, that this is what education is about, producing little humans, then from a posthumanist view, you'd have to start very early, wouldn't you? You'd

> have to rethink the whole process of hominization that education is supposed to replicate, to perpetuate, and so on. That involves really everything. So looking at new relationships between humans and their environment, you'd have to start in primary school, maybe even before, right? The whole socialization process, if you want, needs to change. If we want to develop a new, a better, more ecological relationship with our planet for example. (podcast 21:04)

Introducing students to cultural ideologies that model agendas of ecological sustainability, such as TEK, offers students another way of seeing and making sense of the world. In speaking to this point, UNESCO (2010) highlights the importance of including TEK in all educational endeavors:

> Indigenous people have a broad knowledge of how to live sustainably. However, formal education systems have disrupted the practical everyday life aspects of Indigenous knowledge and ways of learning, replacing them with abstract knowledge and academic ways of learning. Today, there is a grave risk that much Indigenous knowledge is being lost and, along with it, valuable knowledge about ways of living sustainably. (p. 1)

Traditional ecological knowledge is based upon this interconnectivity and theoretically and practically models this framing. Both Science and Science education need to value TEK and be open to learning and incorporating this ideology if we are to find ways of living ecologically sustainable lifestyles. I am not advocating that the key to becoming ecologically sustainable will come from TEK alone, but TEK does provide contemporary examples of thinking and acting in ecologically connected ways. If local TEK perspectives and the local ideologies contextualizing them are authorized to be shared, then respectful local curricular co-development must become a priority in local education programs. Generating citizens who are literate in, and respectful of, their local TEK may help to promote what it means to live in relationship with all aspects of the biosphere. This transformation is needed if humanity aims to live sustainably on this planet. Therefore, the inclusion of Indigenous ideologies into Science classrooms is needed to provide students with opportunities to learn ways of thinking and ways of working embedded in local, ecological sustainable agendas.

But what does inclusion imply? To answer this question from my own perspective, inclusion begins long before classroom activities are employed. Inclusion does not simply imply adding selected isolated (or chunked) Indigenous facts, stories, or activities into the already chunked Science content, even if a *natural* link can be identified or is endorsed by the national curriculum. My experience has highlighted that inclusion begins with self-reflection. I encourage educators who would like to engage in embedding TEK into the teaching and learning of Science to take time and reflect on the beliefs and assumptions they perceived as *normal* in this space. As Science, and its foundational beliefs, are a subculture of Western culture and serve, and are served by, Western patriarchy (Aikenhead, 1997), they inherently promote infrastructural racism.

Four Approaches to Incorporating TEK in Science Education

Racism is underpinned by relationships of dominance and subordination that play out in social institutions like schools (Hollinsworth, 2006). It is important for teachers to reflect on what they consider natural and to deconstruct taken-for-granted beliefs, processes, and practices that are regarded as normal within established procedures or professional duties. Specifically, for Science education, it is important for educators to understand how education privileges Western scientific knowledge over TEK. This means understanding how a colonialist mentality has categorized TEK as "the other" and has ignored and denied TEK in education as a way to justify, protect, and perpetuate its own privileged position. It will mean recognizing the colonial myth that may frame TEK as deficient, or Western Science as truth.

However, do all educators undertake this reflection when they include TEK in their Science education? Are there patterns within different approaches to including TEK in the teaching and learning of Science? Based on Howard's (1999) and Sammel's (2008b) work, I pose four possible scenarios for how teachers could perceive the inclusion of TEK in the teaching and learning of Science: the contributions, additive, transformative, and the community-engaged approach (Table 6.1). These four approaches offer one way to map the terrain of the different mindsets, perspectives, actions, and levels of community support and engagement associated with embedding TEK in curricula. They present a continuum from left to right, each with its own benefits and limitations that considers specific ways to embed TEK. I offer this table as part of a continuing conversation around what teachers can reflect on when they engage in this important work.

Table 6.1 provides examples of how traditional ecological knowledge could be included in Science education as a way to open conversations for educators who do not know where to start to reflect on their practice. The ultimate goal is for teachers, schools, and communities to work together to collectively support Indigenous ideologies and perspectives being infused throughout the school environment. The contributions and additive approaches highlight that good intentions to integrate TEK in Science education are not enough. Even the most well-meaning teacher, without understanding and discussing the effects of colonialism, can perpetuate positions of dominance, exclusion, marginalization, and dismissal of TEK within Science education. Consistent with the perspective of many researchers in this field (see Donavan, 2018), the community-engaged approach illustrates the need to engage and involve local Indigenous community/ies to incorporate locally specific cultural ideologies, perspectives, and practices in educational endeavors. It also suggests that the context and intent to embed TEK are important. This approach emphasizes working with local Indigenous communities and understanding TEK within the context of that culture, and its role and connections to Country and language. This implies not detaching TEK from its culture, as detachment undermines the knowledge system itself (Nakata, 2002). It also means not engaging with this knowledge for capitalistic gain or viewing this knowledge as something that can be commodified or mined and

Table 6.1 Four approaches to incorporate traditional ecological knowledge in Science education (adapted from Howard, 1999 and Sammel, 2008b)

	Contributions	Additive	Transformative	Community engaged
Content implications	Snippets of TEK are chunked or presented in an isolated manner Indigenous ideologies are absent, just the appropriation of specific TEK information Usually, a one-off inclusion of TEK in a science unit The focus is identifying isolated facts, heroes, important days, and cultural activities or practices TEK presented in isolation from the communities or ideologies the knowledge is located in There is no acknowledgement of colonialism or reflection of power privilege positioning of knowledge	Snippets of TEK are chunked or presented as an isolated factoid Indigenous ideologies are absent; just the appropriation of specific TEK information Indigenous content (facts, stories, art, dance) may be repeatedly included in the existing curricula Indigenous concepts presented without ideological context or discussion of knowledge generation There is no or minimal acknowledgement of power or privilege positioning framing TEK as other or deficit There is no critique of power, privileging Science knowledge or dominant ideology or curriculum support	Indigenous ideologies are explored, not just Indigenous information or activities Indigenous ideologies are explored in all science units There is acknowledgement of power and privilege positioning of science Teacher seeks to become educated around how colonialism, racism, and power influence their beliefs and play out in the curricula and classrooms Teacher seeks to become educated in the ideologies, content, epistemologies, and protocols of TEK Teachers may or may not focus on local TEK Teacher may or may not engage with local Elders or knowledge keepers	Elements of the transformative approach are included; however, this is achieved by building relationships and working with the local Indigenous communities TEK is ideologically different from Western Science knowledge and not inferior Structural and philosophical changes are made to the teaching and learning of Science to embed local TEK in collaboration with local Elders and knowledge keepers School demonstrates commitment to ongoing professional development of teachers with special emphasis given to local Indigenous knowledge School facilitates, encourages, and provides resources for teachers to build relationships with local Indigenous communities Content and evaluation developed and taught in conjunction with local Elders and knowledge keepers. Parents are included in transforming to this new mindset.

(continued)

Table 6.1 (continued)

	Contributions	Additive	Transformative	Community engaged
Pedagogic implications	Teacher makes value judgements as to the type of Indigenous knowledge that would "contribute" to the existing, unchanged Science content being taught Teacher may not communicate with any IP when making this choice Teacher may interpret and teach TEK themselves Teacher may not focus on local TEK There is no or minimal recognition of the differences between the nature of knowledge for both TEK and science	Teacher "adds" more TEK to existing Science content but does not change pedagogy Teacher may not communicate with any IP when making choices around "knowledge" inclusion Teacher may interpret and teach the TEK themselves without involvement of any Indigenous communities Teacher may not focus on local TEK There is no or minimal recognition of the ideological differences between the nature of knowledge for both TEK and science	School's leadership team encourages a systematic embedding of TEK The ideologies of both knowledge are recognized and valued Structural and philosophical changes are made to the teaching and learning of Science to seek respectful embedding of TEK Discussions of respectfulness may or may not be made in consultation with local IP Teacher includes an evaluation element around TEK Local Indigenous language may be taught to staff and students to deepen TEK understandings	Elders or knowledge keepers work with the teacher to co-develop curriculum and are given an honored (and funded) position in the classroom Students critically reflect on what is taught and actively engage with their local Indigenous communities School and community model positive attitudes and perceptions around TEK and ensure correct protocols TEK is placed within local ideologies, context, and language Dedicated space within schools given to Indigenous Elders, knowledge keepers, and resources Different ideologies underpinning local TEK and Science are discussed in order to promote a deep understanding and valuing of both knowledge The school and teachers ensure Science pedagogy learns, changes, and evolves with the embedding of TEK ideologies

(continued)

Table 6.1 (continued)

	Contributions	Additive	Transformative	Community engaged
Consequence	It is tokenistic and othering Presented as a comparison, with students not seeing or understanding TEK in its designated local context Student dismiss or undervalue TEK and give privilege to the science knowledge they are learning It may promote negative stereotypes about IP and TEK	Isolated TEK information may be introduced more than once throughout the year IK may be directly compared to "Scientific truth" and may be viewed as "interesting stories" This positioning constructs TEK as "other" or deficit in relation to science Students see limited value in TEK in comparison to science	An educational goal is to help all students value TEK ideologies in their own right Privileging and marginalization of knowledge are discussed Continuous inclusion and valuing of TEK ideologies builds competencies in Indigenous understandings and philosophies Local TEK may or may not be offered or understood within its local context	Additional to the transformative outcomes, educators and students are to educate themselves to local perspectives, protocols, and languages to aid and respect TEK ideologies Students are given the opportunity to understand the deeper moral messages embedded in local TEK about what it means to live as an individual within their community and to live sustainably Schools formally develop and maintain active partnerships with local Indigenous communities. Processes are developed for staff to be mentored by Elders and knowledge keepers (these positions are respected and funded)

plugged into a scientific framework. The community-engaged approach is underpinned by the belief that TEK represents a system of knowledge that is ideologically different from, but not inferior to, Western Science. It is also based on the belief that local knowledge are unique to that culture and vary greatly from community to community and are continually evolving. Working from this approach requires honoring that the local Indigenous community holds the interests and rights of this knowledge and what they allow to be shared. Educators must be vigilant against privileging and selecting some Indigenous perspectives while discarding others. As such, this approach encourages educators to work closely with their local communities to ensure they co-develop learning programs. By working with local communities, a more accurate presentation of Indigenous cultures can be shown to students.

The community-engaged approach also shows that embedding TEK is not just the responsibility of teachers but requires a collaborative effort. Schools and communities have important roles to play in bringing about philosophical and infrastructural change. Generating the community-engaged level of inclusion necessitates schools moving away from traditional models of education that may exclude Indigenous communities and offering sustained opportunities to work with local communities to respectfully embed ideologies, knowledge, agendas, histories, and practices of TEK. Teaching for literacy in TEK implies placing the learned knowledge within its social context, as well as encouraging students to think, analyze, and appraise their individual or community-based decisions and actions from within this frame.

Is this understanding shared by my preservice primary school teachers? What are their thoughts about what it means to become literate in TEK? In 2018, I conducted a small case study to draw my attention to the patterns and trends that emerge from the perspectives of students coming into my 2018-2019 primary Science courses. I wanted to use this knowledge to specifically reflect and modify my own university classroom practice.

A Case Study: What Constitutes Traditional Ecological Knowledge?

I teach two compulsory preservice primary Science education courses at the university where I am employed. They are second- and third-year courses (of a 3.5-year Bachelor of Primary Education program) and all students have taken at least one course introducing them to IKS. Before the start of my first course, I invited the cohort of 150 students to take an anonymous online survey that asked questions about embedding TEK into their future teaching practice; 120 students participated. Firstly, I asked them about the importance of incorporating TEK into the teaching and learning of Western Science. The results highlighted that most preservice students (85%) believed TEK was important to include in their primary lessons. However, 57% said they would include it when the curriculum allows for it and only 19%

said they would make time and space for its inclusion in their lessons regardless of curriculum mandates.

When the participants were asked for examples of TEK, they would include in their Science lessons, a few themes emerged. The most common theme (78%) was an Acknowledgement of Country. The next most common theme was the inclusion of TEK around specific topics such as seasons, weather, understandings of plants and animals, astronomy, food, and the use of water, fire, and tools. The students spoke about including Indigenous facts and stories alongside the Science content knowledge for specific Science topics. The third theme was more generic, where participants spoke of including cultural practices such as dreamtime stories, music, dance, sports, and art but they did not indicate how they would include this or for what reason.

These results suggest that even though most of the participating future teachers believed it was important to include TEK, the majority communicated that this would be encompassed by an Acknowledgment of Country. To explain what this implies in an Australian context, an Acknowledgement of Country is a practice where the Traditional custodians of the land, and their long and continuing relationship with the land, are recognized by the speaker (or in this case, the teacher). It is done by someone who is not an Indigenous Person of that specific land and usually it is undertaken once, at the beginning of important events or gatherings. In a classroom setting, this acknowledgement would be said at the beginning of the school year. The common acknowledgement usually involves saying the following lines: *I would like to acknowledge that we are meeting on the traditional lands of the (name the IP) people, and I pay my respects to Elders both past and present.* As the majority of the participating preservice teachers only wrote "Acknowledgment of Country" as the way they would include TEK in their classrooms, it could be assumed they were referring to making this statement at the beginning of the school year. If this is the case, then it could be argued that this approach would fall into the Contributions column of Table 6.1 as it presents isolated knowledge and could be viewed as tokenistic. Bishop, Vass, and Thompson (under review) believe that it is no longer good enough to simply perform an Acknowledgment of Country before school gatherings, or merely just fly the Aboriginal flag during NAIDOC week[2] and feel that is a fair attempt at incorporating Aboriginal perspectives.

Contemporary Acknowledgements of Country are insufficient as they are often an act of political correctness where there is no genuine intent to understand, communicate or promote the ideologies, perspectives, histories or cultures of the people whose land you are gathering on. Even though the Indigenous peoples are acknowledged in this process, they are often not specifically named, and there is no genuine effort to show respect for the ideologies and practices of these traditional owners. This approach to Acknowledging Country is far from its historical context.

[2]NAIDOC (National Aboriginal and Islanders Day Observance Committee) Week (lasting from the first Sunday in July until the following Sunday) celebrates the history, culture, and achievements of Aboriginal and Torres Strait Islander peoples.

Acknowledging Country is not a new practice, but an important old custom to Australia's First Peoples. Joy Murphy Wandin explains that Aboriginal Australians were seasonal travelers who would visit the Traditional lands of others, and when a traveler came requesting a visit, an agreement would be reached where the visitor would be welcomed if they understood, accepted, and respected the culture, the ancestors, and the laws of that particular land (MIROMAA ALTC, 2019). This may take time as it was a negotiation by which the visitor heartfully acknowledged and recognized there were processes, protocols, and laws that needed to be honored if they were to be welcomed onto that land. It was, and still is, a process about agreeing to share Country in the ways the traditional owners advocate and practice. As explained in Chap. 1, the term Country (with a capital C) represents more than a connection to the land: "Country is a word for all the values, places, resources, stories and cultural obligations associated with that area and its features. It describes the entirety of our ancestral domains" (Reconciliation Australia factsheet). Blair (2017) explains Country as including animals, rocks, winds, tides, emotions, spirits, songs, and humans, all of whom have languages, interconnecting knowledge, and laws which bind them together. Far from being a passive backdrop for the human experience, all aspects of Country are active participants and able to communicate. As such, an Acknowledgement of Country should be an agreement, and a way of sharing, how the work the group does together, upon that particular Country, is contextualized by the voices of that Country and the ideologies and practices of the Peoples whose land you are visiting. It illustrates what showing respect for Country looks like in that context. It is not a one-off statement made at the start of a school year, but an agreement that a person will learn (and, in the case of educators, facilitate the sharing of this knowledge) how to abide by and respect the values of that Country.

A Case Study: What Does Colonialism Imply?

Other questions included in the online survey explored colonialism. When asked if it was important to teach about colonialism when including TEK, 80% agreed. However, when asked via a written response question what including colonialism implied, the majority of participants left this question blank or stated that they did not know. A pattern emerged from those who did respond. It seems that the majority of participants who answered this questioned believe including colonialism means communicating the history of Indigenous peoples in Australia. This perspective may also align with the contributions or additive approach to embedding TEK as it may imply that students do not understand that the effects of colonialism are contemporary as well as historical. As mentioned throughout this book, colonialism is embedded in all institutional and personal understandings and assumptions about teaching and learning that are considered *common sense*. These preservice students may not see how they have been indoctrinated by colonial power dynamics to perceive something as *normal* and other things as not. Or how one way of understanding the world dominates at the expense of all others. They may not see how they have become

numb to the effects of this conditioning. Nor may they view themselves as implicated in perpetuating this agenda in their daily thoughts and actions. Ultimately, the results highlight that these preservice students are unclear how colonialism relates to their lives or their teaching.

A Case Study: Emerging Assumptions

In multiple choice questions, 65% of participants agreed that the TEK should come from the local Indigenous peoples and 70% said they would speak with an Elder or knowledge keeper before incorporating TEK into their teaching. Eighty-three percent agreed that it was important to acknowledge the Indigenous community from where the knowledge came. However, in a written response question, when asked where they would go to find TEK to include in their future classes, the majority of students (72%) indicated they would use the Internet to search for this knowledge. Specifically, they stated they would use generic Google searches for information or conduct searches within formal teacher support platforms that align with the Australian Curriculum. The second most common response was finding information using textbooks from university courses. The third most common response involved speaking with local Elders or talking to members of Indigenous communities, although many also added that they did not know how to connect with Elders or the Indigenous community.

It seems that a particular assumption emerges when combining the responses to all the surveyed questions. These results point to an understanding where at best, TEK is reduced down to isolated chunked information or stories, that may be found online, which align with particular Science concepts so they can be strategically placed alongside the teaching and learning of chunked Science facts. This addition of Indigenous facts or stories to Science concepts may be incorporated where suggested by the Australian Curriculum. This assumption is reflective of the contributions or additive approach, but as Bishop et al. (under review) maintain, it is no longer good enough to download a Dreamtime story from the Internet and present it to students without context in order to tick a box that Indigenous perspectives have been included. Ultimately, this approach will not help educators move from understanding Science, TEK, and Science education practices as the transmission of accumulated, distinct, and isolated *facts* toward understanding their relationality and the complexity of ideologies and power dynamics that connect and underpin them.

If teachers start to focus on underlying colonial infrastructures that have historically promoted the categorization of *right* and *wrong* beliefs and behaviors, then they may be more likely to explore how perceived *right* behaviors or *legitimate* knowledge have come to hold so much power in educational systems that they control the thoughts, conversations, and actions that we are *supposed* to have in schools. For example, choose any concept taught in Science: Both Indigenous and Western social systems have historically developed evidence-based knowledge about this concept; however, these perspectives may be so divergent that individuals from one perspective may think the other perspective is “false,” closing down conversations

that could lead to new understandings or insights. In this way, cultural assumptions of truth or absurdity are embedded in colonialism and promote certain perspectives and marginalize others, while also influencing the conversations we have with each other.

However, colonialism cannot be undone by just seeing that it exists. And teachers alone cannot "fix" colonialism. But educators can be open to shifting the way they understand the teaching and learning of Science. They can be open to see the embedding of local TEK into Science education as a continual process of exposing students to another way of making sense of their local world, rather than just the inclusion of Indigenous facts strategically placed alongside Science facts. Acknowledging that local TEK will vary dramatically, strategic essentialism offers us a way of understanding that TEK encourages students to connect theoretically, emotionally, spiritually, and practically to their environment in ways that show respect and kinship. TEK offers students a more relational worldview, where they can develop competencies in understanding their identity as part of a complex relationship within the biosphere. If teaching is a sacred act that goes beyond passing along knowledge but builds students' intellectual, emotional, and spiritual growth (hooks, 1994), then the philosophy of kinship may strengthen identity by allowing for the recognition of the sacredness of all things. This understanding necessitates respectful, thankful, and equitable actions. This philosophy invites students to be accountable for the world of which they are a part. It necessitates that they understand what their rights and responsibilities are within an interconnected and related ecosystem. Students are asked to identify and emotionally connect to issues and understand problems by using a more temporal and holistic framing.

Moving Toward a Transformative or Community-Engaged Approach to Embedding TEK

I believe there are three key aspects that need to be in place before moving toward a transformative or community-engaged approach. The first is for teachers to become more aware of and sensitive to their own assumptions and cultural biases and become self-reflective of the things they have been taught to say and do. This change needs to come from within. Teachers need to realize that knowledge taught in schools is socially constructed to reflect dominant perspectives and is not neutral in its agenda. Coming to this realization also means understanding the role of the teacher differently: rather than presenting prescriptive curricula, teachers can work in solidarity to honestly and critically explore the ideological assumptions that shape their pedagogy. To be successful in this process, they will need to investigate how they are implicated in maintaining and reproducing the colonial structures that underpin dominant educational agendas. The second key point is the need for institutional support. For a community-engaged approach to take place, all aspects of the school must demonstrate long-term commitment toward this goal. School administration must lead the

way to model how schools can bring about structural and philosophical changes that support teachers in developing pedagogies that authentically embed local Indigenous ideologies and perspectives. Teachers need this whole-school approach if they are to teach more than just Western ideologies or "core knowledge." The third key aspect is support from the local Indigenous communities. This support involves valuing and making welcome members of local Indigenous communities (i.e., Elders, knowledge keepers, parents) and enabling long-term relationships with all aspects of the school community. As discussed in Chap. 5, this process requires learning about, acknowledging, and engaging in local protocols that honor reciprocity. By learning about and enacting these protocols, teachers and students are more likely to build long-term, respect-based relationships with the local Indigenous peoples. Working with local Indigenous communities to generate literacy not only requires that teachers and students develop an understanding of conceptual knowledge of TEK but also implies more genuine and authentic interactivity with the ideologies within which TEK is situated.

Reflections on Students' Perceptions of Examples of TEK: What It Means for My Own Pedagogy

After examining the results of my case study, I reflected on how it could inform my pedagogical practice. I wanted my students to see the difference between contributions, additive, transformative, and community-engaged approaches to embedding TEK and to reflect on what this meant for their own Science pedagogy. I wanted to creatively and critically address the patterns identified by this case study. These goals underpinned my thinking as I modified my 2018–2019 preservice Science courses. I share these modifications with you not because they are ideal, but rather because I have found that when we discuss our thinking and practices with each other we can start to reimagine what Indigenizing practices might look like on a day-to-day basis. As I continue to learn alongside my Indigenous and non-Indigenous colleagues in Australia and Canada, I become more aware of how we are all caught within the tangles of these same colonial systems. This case study highlights how I need to make these systems more explicit to my own students. As such, the first change I made related to my Acknowledgment of Country.

The students completed the online survey before I gave my own Acknowledgement of Country. So, the first change I made was to make time to genuinely discuss what this Acknowledgement means to me. After I spoke the commonly used sentence in my first lecture for the course (in English; however, I would like to learn this Acknowledgement in the local Yugambeh language), I asked my preservice students what they believed this statement to actually mean. No one responded. I then asked my students if they had assumptions or expectations around behavior for someone visiting their house. I explained that if someone comes to my house there are *unspoken* expectations of behaviors and practices, such as abiding by the things that I

consider respectful. I would not want someone breaking or stealing things or to go snooping around my house. I would also not appreciate people who were abusive or rude. If someone came to visit my house, then I would expect these common courtesies and if they did not follow these, they would be asked to leave, and they would not be invited back. Using this metaphor, the class and I discussed that an Acknowledgement of Country is not just saying "I acknowledge I am in Alison's house" but it is about a way *of being* in my house that shows courtesy and respect in ways that I want to see them. And if my guests are unsure of what these are, it means a genuine attempt to learn what I would like by asking questions, engaging in dialogue, and listening respectfully.

The next change I made was to explicitly verbalize throughout my Science courses what I am learning about Indigenous ideologies and worldviews, and what respect and courtesy look like for my local Indigenous community. I continually shared with my students the ideologies and perspectives of the Yugambeh People who are the traditional owners of the lands upon which my university campus is located. As a class we actively grew our understandings of Yugambeh ideologies and practices toward Country and we explicitly discussed how our pedagogy aligned with Yugambeh traditions that generate a deep respect for Country. As such, my pedagogical focus was on Indigenous ideologies rather than the inclusion of chunked Indigenous facts or stories. Together, the students and I explored what it means to learn Western Science in relationship with Yugambeh Country and the ideologies of its Peoples.

We also reflected on what Nakata (2002) calls meta-knowledge, that being the knowledge of knowing (or coming to know). Nakata (2010) suggests this awareness of meta-knowledge allows students to become knowledgeable about "the existence of different ways of learning, knowing and doing" (p. 56) and can promote the understanding that knowledge production is a contested and situated site for thinking and exploring. We do this by investigating colonial legacies by questioning what we understand as *normal* or *natural* in the teaching and learning of Science and what has been taught to us by our own education. I build time into my classes for discussions about what it feels like to try to unlearn and reframe Western pedagogical processes within a system that values and rewards adherence to these same Western processes. I seek to highlight that Indigenizing pedagogy is more than including Indigenous ideologies and perspectives, but also involves interrogating our own systems of beliefs and appreciating the situatedness of knowledge (Nakata, 2002). I hope my students witness my explicit engagement with the politics of knowledge production and how the embedding of TEK represents a valuable journey of learning, unlearning, and reframing. I hope they see that embedding Indigenous ideologies and perspectives is not a destination of TEK fact accumulation, but includes the desire to critique what we have been taught.

As we discuss concepts, we explore shifting Science conversations toward a more relational framing, one that reflects TEK. Understanding Science and Science education as relational requires moving away from traditional Science teaching practices. This perspective can be found in branches of Western philosophy and Western Science. Post-humanism is one such perspective and a post-humanistic Science (PHS) challenges the idea of human alienation from nature and rejects the notion that

humans are the crown of evolutionary processes. Rather, it focuses on the deep interconnections and relationships that link everything on the planet. It highlights that humans are just one part of the biological fabric of life on Earth and acknowledges humans are incapable of an independent existence.

Post-humanistic Science education (PHSE) is emerging as a way of understanding the teaching and learning of Science that focuses on relational thinking offered by PHS. PHSE emphasizes the relationships between chunked knowledge by aiming to "de-chunk" these concepts and reframe them in a way that teaches the Science concept with a larger, more relational framing with the aim of promoting competencies in ecological sustainability. To align more closely with TEK I reconceptualized my courses to promote PHSE. Let me give you an example of this perspective. Let's explore the example of breathing as highlighted earlier in this chapter. From a PHSE perspective, the air (rather than humans) could take center stage. Students could explore how the air surrounds the planet and interacts with all aspects of the planet. They could explore how oxygen, a component of air, could be viewed as external to our body at one moment, but in the next, becomes a critical part of the very chemistry of our bodies. PHSE could show how this oxygen molecule can stay in our bodies for a short period of time or for the rest of our lives, and so becomes part of us, no longer classified as external or non-living. It invites students to reflect on some of the dichotomies that are positioned as normal: external versus internal, living versus non-living and so on, with the aim of opening spaces for discussions that highlight similarities and connections rather than just perceiving differences. A PHSE perspective could explore how our very bodies have evolved/been designed to intimately engage with what we classify as nature, such as air. The action of breathing links humans to the majority of other animals because our animal ancestors perfected this process long before humans existed. Students could explore how oxygen connects everything: how it is made by plants, used by plants and animals, and interrelates with all aspects of the planet.

This theoretical framing is important, but students also need to deeply appreciate the practical applications of this knowledge and engage with it emotionally. For example, students could see how long they can go without breathing (how long they could hold their breath). Physically understanding the importance of breathing in air, students can be encouraged to develop competencies of compassion and empathy for the 4.2 million people who die every year due to air pollution, or with the 91% of the human population who live in places with severely polluted air (for updated stats please see https://www.who.int/airpollution/ambient/en/); compassion, also, for all of the non-human lives affected by the polluted air we have generated during the Anthropocene. PHSE teaches about the reciprocal responsibilities humans have with other beings and entities (similar to the Indigenous perspective of kinship) and seeks to encourage students to build capacities and confidence to engage in practices and protocols to respectfully live with and learn from nature itself. However, as PHS is still based in the Western ideology, it can fall short of exploring spiritual connections that underpin TEK and it cannot model ecologically sustainable lifestyles. However, PHS and PHSE do offer Western Science a way to reflect and address limitations compliant in the creation of the Anthropocene.

Despite these changes, at its best, my pedagogy reflects a transformative approach. Even though my faculty and university theoretically support the embedding of TEK, the practical infrastructures are not in place as reflective of a community-engaged approach. Currently, I work with Indigenous and non-Indigenous colleagues and the local Yugambeh community to support my own learning of what an embedded pedagogical practice might look like in my courses. With my support networks we explore perceptions, assumptions, and agendas that encourage the co-creation of meaning and understanding within the context of our own experiences and beliefs. I have found this community dialogue has encouraged me to make meaning of what embedding TEK could look like in my pedagogy. This is an ongoing process that has encouraged me to shift my pedagogy from passively communicating curricular agendas through sanctioned pedagogical initiatives toward understanding learning as relational. This has necessitated the reimagining of my Science courses. Rather than just opening a few spaces to include TEK, Science and Science education must reflect, self-correct, learn, and grow from those cultures who have for thousands of years been dedicated to promoting ideologies that ensure ecological sustainability. Embedding TEK is more than just teachers finding "new" respect for Indigenous knowledge systems (as outlined in the cross-curriculum priorities in the Australian Curriculum). If Science teachers are to truly value TEK, they will need to reflect on these ideologies and see how these perspectives and knowledge bases can inform and evolve the traditional ideologies and practices of Science education.

Concluding Thoughts

I do not propose this case study is reflective of the perspectives of all preservice teachers. My aim of bringing attention to the perspectives of these students and sharing how I reflected on this case study was to encourage you, the reader, to reflect on the perspectives of your own students to reveal what is accepted and normal within teaching and learning. I do this with the hope of influencing the future. I believe there are many inspired teachers who consciously choose to engage with the future in order to influence its direction. As contemporary Western societies continue to objectify, commodify, manage, silence, and speak for nature, Indigenous ideologies and TEK teach and model ways of listening and being taught by ecosystems. To respectfully and genuinely embed these teachings, educators must critique what governments and institutional practices mandate as being normal or professionally required. We need to reflect on these assumptions for the degree to which they act as inhibitors or potential threats to embedding TEK. If we are courageous enough to identify those indoctrinated patterns within education systems, then I believe we will be more inspired to refocus our Science pedagogies and adapt (become more "fit," in an evolutionary sense).

Western Science needs to transcend reductionist thinking. It needs to be more relational in its perspective. Western Science has much to learn from TEK. Science education, therefore, should not just be assisted by the inclusion of a sprinkling of

strategically placed TEK "facts." Overarching local Indigenous ideologies should be infused throughout the teaching and learning of a relational Science education agenda. Local Indigenous perspectives represent an opportunity for Science and Science education to expand their narrow understandings of what counts as knowledge and to offer a fuller understanding of the human experience in relationship with all of nature. Further, local Indigenous perspectives offer Science education an ecologically sustainable model and a chance to reflect, learn, and grow. Science education needs to evolve. The teaching and learning of post-humanistic Science offer a place where the epistemologies and stories of local Indigenous perspectives and Science can be exchanged and discussed and can co-exist. I seek to achieve this coexistence in my own practice by providing opportunities to explore multiple contextual understandings of phenomena, rather than just seeking to communicate the "right" Western Science story. As a class, we learn and discuss how each perspective is different, underpinned by different contexts and locations. Together we explore how these ideologies tell a greater story, one that offers new and divergent ways of making sense of phenomena, offering a refreshing richness and fullness to how we can perceive the natural world around us. However, due to colonialism, I believe it may currently be impossible to just let Western scientific understandings and Indigenous knowledge systems be told side-by-side without judgement. If this goal is not currently realistic, the community-engaged approach to incorporating local Indigenous perspectives into learning programs can promote the visibility of local Indigenous ideologies and perspectives and can provide opportunities to critique and re-make local cultural ways of knowing, thinking, and acting. This is a goal for my own practice. Ultimately, I encourage my students to understand and actively pursue what co-developing learning programs with local Indigenous communities could look like for each of their own classroom practices.

This and future generations need to develop competencies of relatedness and belonging to our ecosystems in more interconnected ways. We need to co-become (Blair, 2017) with nature in order to understand and discuss the complex social causes associated with the Anthropocene. Our students, societies' future leaders, need to individually and collectively make more insightful and more ecologically responsive decisions and policies to solve the extreme challenges that this era will present. As educators, we might not be able to generate large-scale political change, but we can become shining examples of what can be achieved in collaboration with our local Indigenous and school communities. I celebrate (and struggle) beside those who aim to do this on a daily basis to help our students become great human beings who hold every aspect of our global ecology sacred.

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Part IV
Indigenizing Practice—Case Studies from University Settings

Chapter 7
Supporting Indigenization in Canadian Higher Education Through Strong International Partnerships and Strategic Leadership: A Case Study of the University of Regina

Alison Sammel and Arturo Segura

Abstract This chapter discusses the implementation of several international initiatives that the University of Regina, a Canadian tertiary institution located in the province of Saskatchewan, put in place to support campus Indigenization. The agenda to support Indigenization is not unique to this particular university; in fact, as this book highlights, it is becoming more "mainstream." However, what is novel about this approach is how Indigenization and internationalization agendas and practices were intertwined. As such, this chapter offers one understanding of the relationship between agendas of Indigenization and internationalization and how common ground can be found as academics, students, and administrative staff develop a deeper recognition of Indigenous frameworks while critiquing settler-colonial infrastructure. By combining these intentions, this approach provides context-specific theoretical and practical perspectives that seek to decenter and make visible settler agendas.

The introductory chapter of this book discusses Indigenization, settler colonization, and the relationship to Western hegemonic education systems. This chapter continues this discussion by focusing on how the University of Regina, a Canadian tertiary institution located in the province of Saskatchewan aimed to Indigenize and disrupt infrastructural settler colonialism within its internationalization agenda. Like many other countries, the land now known as Canada reflects settler colonialism as outsiders came to a land inhabited by Indigenous people and claimed it as their own. Generation after generation of outsiders proceeded to come for the space and resources (Hinkson, 2012). Rather than being contained in the past and discussed as an inevitable part of nation-building, the arrival of non-Indigenous people into Canada is indeed ongoing, with minimal social understanding of the implications of this continued settlement on stolen lands (Veracini, 2011).

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In documenting the programs led by the University of Regina, the authors stand in solidarity with colleagues who analyze the ways settler colonialism underpins the conceptualization of educational theory and practice, as well as with those who explore the extent to which Indigenization agendas actually challenge asymmetrical relationships within tertiary institutions. And while we are concerned with the settler appropriation of what it means to Indigenize or to decolonize (Tuck & Yang, 2012), it is beyond the scope of this chapter to explore these concepts in detail. What this chapter does offer is insight into how the University of Regina initiated their Indigenization agenda by seeking to decenter settler-colonial agendas in their internationalization programs.

The international initiatives discussed in this chapter outline how meaningful alliances with the local and international communities sought to raise critical consciousness about settler colonialism while consciously centering on Indigenous educational agendas, infrastructures, processes, curriculum, and practices. For the purpose of this chapter, the term settler colonialism describes how:

> settlers come with the intention of making a new home on the land, a homemaking that insists on settler sovereignty over all things in their new domain … settlers make Indigenous land their new home and source of capital … the disruption of Indigenous relationships to land represents a profound epistemic, ontological, cosmological violence. This violence is not temporally contained in the arrival of the settler but is reasserted each day of occupation. In the process of settler colonialism, land is remade into property and human relationships to land are restricted to the relationship of the owner to his property. Epistemological, ontological, and cosmological relationships to land are interred, indeed made pre-modern and backward. (Tuck & Yang, 2012, p. 5)

However, as Tuck, McKenzie, and McCoy, (2014) remind us, "when we theorize settler colonialism, we must attend to it as both an ongoing and incomplete project, with internal contradictions, cracks and fissures through which Indigenous life and knowledge have persisted and thrived despite settlement" (p. 8). To better understand how settler colonialism links to educational agendas, it is important to call attention to how formal Western systems of education have both promoted and resisted the settler-colonial agenda, including the marginalization of Indigenous relationships between self, spirit, community, and land.

University of Regina's Commitment to Indigenization: Theory and Actions

The University of Regina is a medium-sized university located in the province of Saskatchewan—a province located in the prairies of Canada, where the main economic activity is agriculture and mining. As of the 2018 Fall semester (September to December), the university had a total of 15,568 registered students—of which 13% is of self-declared Indigenous descent. However, because some students choose to not self-declare, this number does not represent the total number of First Nations, Métis, and Inuit students enrolled at the University of Regina.

The cultural invisibility of settler colonialism has become normalized in hegemonic infrastructures such as Western educational systems and hence the lack of Indigenous perspectives in formal education systems—from educational administrators and faculty members to educational materials and resources (United Nations, n.d., para. 1). Since becoming President and Vice-Chancellor of the University of Regina in 2008, Dr. Vianne Timmons took a leading role in establishing the strategic direction of the university to support campus Indigenization, by prioritizing Indigenization in the institution's policies, programs, and curricula.

Through a consultative process, Dr. Timmons established the 2009–2014 strategic plan, "mâmawohkamâtowin: Our Work, Our People, Our Communities"—weaving Indigenization through the University of Regina's priorities on teaching, research, and service to communities. This agenda responded to "the needs and aspirations of our students, our people and our communities and reaching out to the world around us" (University of Regina, 2009, p. 1). Specifically, the university aims to "prepare all our students to live in a Saskatchewan where First Nations and Métis peoples achieve their rightful place in society and the economy, and where their cultures are celebrated" (University of Regina, 2009, p. 10). Reflective of the many Indigenous Nations upon which the university is positioned, the main goal around Indigenization was to build long-term relationships with the communities of the First Nations and Métis peoples by addressing their needs, reflecting their cultures in programs and campus life, celebrating their culture, and educating all students about Indigenous issues. Building on this momentum, the 2015–2020 strategic plan, "peyak aski kikawinaw: Together We Are Stronger," identifies three key priorities: student success, research impact, and commitment to their communities and advises that:

> the University of Regina is situated on Treaty 4 and Treaty 6 lands. Aboriginal students, employees and community members are welcomed and supported at the University of Regina. Since the inception of the 2009-2014 Strategic Plan, we have been focused on implementing important initiatives to support the success of Aboriginal students, faculty and staff on our campuses, and Indigenize the University. (University of Regina, 2015, p. 9)

The Strategic Plan 2015–2020 states,

> the University of Regina's motto, As One Who Serves, speaks to the deep connection and commitment to serving all of the communities the University touches in Saskatchewan, across Canada, and around the world. The University is committed to collaborative community service and engagement opportunities. (p. 15)

Supporting actions include the increase of joint programs, collaborations, and exchanges between students and faculty provincially, nationally, and internationally (University of Regina, 2015, p. 17). This latest agenda adds to the previous one by expanding the experiential and service-learning opportunities. As described by Lewis and Williams, (1994), experiential learning "means learning from experience or learning by doing. Experiential education first immerses learners in an experience and then encourages reflection about the experience to develop new skills, new attitudes, or new ways of thinking" (p. 5). Service learning is

> an educational methodology that combines community-based experiences with explicit academic learning objectives and deliberate reflection. These learning experiences require a partnership between the community (nonprofit, schools, government, business, human services organizations, or other entities) and the institution or academic unit/program and are characterized by a focus on mutual benefit. (Gelmon, Holland, & Spring, 1995, Preface)

The university is committed to offering experiential and service learning around Indigenization within its internationalization exchanges.

For over 10 years, the strategic plans of the University of Regina have stated that Indigenization is a priority. The university states it is committed to building an institution that welcomes and is inclusive of Indigenous people. To achieve this goal, the University of Regina implemented several initiatives to support campus Indigenization. This included the expansion of the Aboriginal Student Centre, the creation of an Indigenous Advisory Circle that advises the President and Vice-Chancellor on measures to support Indigenization, and the creation of an executive-level position (entitled Executive Lead: Indigenization) to oversee the development and integration of Aboriginal protocols, methodologies, and programs (University of Regina, n.d., para. 4). Building this infrastructural support enables the realization of these agendas and models, an institutional recognition of what Indigenization means at the University of Regina:

> the transformation of the existing academy by including Indigenous knowledges, voices, critiques, scholars, students and materials as well as the establishment of physical and epistemic spaces that facilitate the ethical stewardship of a plurality of Indigenous knowledges and practices so thoroughly as to constitute an essential element of the university. It is not limited to Indigenous people, but encompasses all students and faculty, for the benefit of our academic integrity and our social viability. (Pete, n.d., para. 1)

Moreover, in order to Indigenize its campus, the University of Regina's implementation plan includes changes to the university's governance and administration, increasing the number of Indigenous academics, increasing Indigenous research, improving support for Indigenous students, and building community engagement (University of Regina, n.d.). Focusing on this last point, the University of Regina directed their curricular initiatives to reflect the local Indigenous Nations' cultures and ontologies, traditions, and practices. This was important as the university is located on the ancestral lands of several Indigenous nations, and each nation's participation was essential for the success of these initiatives. Working with the local Indigenous communities, the university was able to offer courses that embed Indigenous knowledge and pedagogies across all academic programs, to support faculty members on how to Indigenize their curricula and to offer academics the ability to be mentored by Elders to incorporate traditional ways of knowing in their specific curricula. The Strategic Plan 2015–2020 continued to offer these resources to the university community, but further aimed to strengthen the university's relationships with local and international communities by increasing the number of mobility exchanges for students and faculty. It is because of this agenda that the University of Regina has strongly focused on internationalization. As explained by Knight (n.d.) internationalization "at the national, sector, and institutional levels is defined as the

process of integrating an international, intercultural, or global dimension into the purpose, functions or delivery of postsecondary education" (p. 2).

The University of Regina's Indigenization and internationalization agendas outline the importance of collaborating with Indigenous faculty members, Indigenous communities, and Indigenous Elders when developing international Indigenous-focused programs. The university believed it was crucial for academic institutions to ensure that Indigenous peoples have control and protection over their own their narratives and representations of cultural heritage. They also mandated that program curricula incorporated local Indigenous perspectives, was approved by the local Indigenous communities, and was delivered by Indigenous peoples (University of Regina, 2015). Curricula changes focused on Indigenous philosophies, perspectives, practices, and traditions rather than from a settler's narrative. The programs developed under these strategic plans needed to offer a different perspective from the usual settler-colonial perspectives found in Western education. They needed to promote Indigenous ontologies and perspectives, to focus on sharing knowledge through oral tradition, and to encourage Elders of local Indigenous communities to be leaders of these intercultural programs.

Academic institutions have usually approached Indigenization with a focus on working with local Indigenous communities to better support local Indigenous students. The strategic plans of the University of Regina further this agenda to promote a global focus on Indigenous knowledge exchange. The rest of this chapter will explore how Indigenization and internationalization can be addressed together by supporting campus Indigenization through the positive correlation of strategic planning and leadership, program development, and international engagement. Specifically, we will highlight examples and lessons learned from programs developed by the University of Regina and its Mexican partners.

University of Regina's International Strategic Partner Towards Indigenization: Mexico

The University of Regina was one of the pioneer Canadian academic institutions to participate in the first Canada-Mexico Round Table on Indigenous Higher Education, held in Mexico City in 2012. Under the lead of the executive teams from the University of Regina and Lakehead University, a group of executive leaders of Canadian academic institutions met with the rectors of intercultural Universities in Mexico. Along with officials from the Ministry of Public Education of Mexico, they discussed academic issues and potential international collaborations regarding Indigenous knowledge. These discussions culminated in the establishment of partnerships with academic institutions in Mexico and resulted in the signing of collaboration agreements with the purpose to promote mobility programs with a student, faculty, and staff focus. It was imagined that these programs would include

student, faculty, and administrative staff traveling to other countries to experience Indigenous-focused programs developed and taught by local Indigenous peoples.

The University of Regina aimed to develop an international agenda that sought to mobilize students, faculty, and administrative staff (Internationalization Plan, 2016–2020, 2016), by promoting mobility exchanges. By hosting international visitors and by participating in organized overseas visits, the university built infrastructure that allowed for new Indigenous philosophies, understandings, and practices to be shared and learned, which inherently supported the mandate to internationalize and Indigenize the curricula. The leadership of the university saw a beneficial focus to link both their internationalization and Indigenization endeavors and developed a series of outbound and inbound Indigenous-focused local and international programs with the University of Regina's Mexican partners.

Since the establishment of their first agreement with a Mexican academic institution in 1997, the University of Regina has collaborated on multiple programs with Mexican universities (Maragos, 2015). More than 12 million Indigenous peoples live in Mexico (Breves del Panorama Educativo de la Población Indígena, 2018), and throughout Mexico, 12 intercultural universities (universidades interculturales, in Spanish) specialize in preserving and promoting the culture of Indigenous peoples, promoting local and regional development of Indigenous communities, and providing academic programs that encompass the methodologies of Indigenous peoples. The Government of Mexico has created programs and policies to support its Indigenous peoples. For example, in 2003 the Congress approved the National Commission for the Development of Indigenous Peoples Act (Ley de la Comisión Nacional para el Desarrollo de los Pueblos Indígenas, in Spanish), which outlines actions for the development of Indigenous peoples such as access to education, equal opportunities to participate in international programs, and provision of training to administrative staff to respond to the needs of Indigenous peoples. These agendas aligned with the University of Regina's strategic plans and made Mexico the perfect ally for these international mobility programs.

These academic mobility programs are in line with recommendations from the United Nations Declaration on the Rights of Indigenous Peoples (2008), that universities around the world should prioritize study-abroad opportunities for Indigenous students. However, finances are a major concern for students: the Canadian Bureau for International Education's 2009 study, entitled *World of Learning,* reported that almost 74% of students nationwide said that financial constraints prevented them from participating in study-abroad programs (Bond et al., 2009). To address this concern, the University of Regina, with support from the Government of Saskatchewan, created the International Experience Travel Fund, which offers up to $1,000 Canadian dollars to eligible University of Regina students who would like to study overseas on an exchange program or study tour. As well, the University of Regina collaborated with its Mexican partners to coordinate logistics and leverage resources. For example, for some of the programs the hosting university covered the expenses of accommodation and meals while the home university covered the travel expenses of the participants. Further, Mexican partners leveraged funding available through government funding

agencies such as the Councils of Science and Technology, and scholarships available through the Mexican and Canadian governments.

Student-Focus Mobility Programs: Indigenous Students

One of the main outcomes of the 2012 Canada-Mexico Round Table on Indigenous Higher Education was the establishment of a cooperation agreement between the University of Regina and the Intercultural University of the State of Mexico (Universidad Intercultural del Estado de México, in Spanish). This agreement has promoted the mobility of students at the University of Regina and Indigenous students from Mexico to exchange their culture and traditions in a short-term, noncredit program during the Spring/Summer semester (May to August).

In this alternating program, started in 2012 and, at the time of writing, still continuing today, students from Canada travel to Mexico during the summer in one year and the following summer Mexican students come to Canada. Through this program, University of Regina Indigenous students go to the State of Mexico for 3 weeks to learn about Mexican Indigenous peoples and to visit places identified as important or relevant to the Mexican Indigenous community. The Canadian students participated in, and were embedded in, various Indigenous communities of the Mazahua people. The program is delivered in English, with Spanish-English interpretation when necessary. Historically, interested students have needed to submit an application, and a committee of Indigenous faculty members and staff of the University of Regina select the students. Participating students receive $1,000 Canadian dollars toward their flight, while accommodation, meals, and in-country transportation are provided by the Intercultural University of the State of Mexico.

In return, Indigenous students from the Intercultural University of the State of Mexico come to the University of Regina to take a 4-week customized program. Students receive academic instruction in English as an additional language and attend seminars on the history, culture, and traditions of Indigenous peoples in Canada with a special focus on the Indigenous peoples of the province of Saskatchewan. The seminars are led by the Executive Lead: Indigenization, delivered in English with Spanish-English interpretation. Topics include understanding the post-Confederation era and treaty signing, the Indian Act, the Canadian Indian residential school system, First Nations protocols and methodologies, and current Indigenous issues in Canada. The program also focuses on local experiences where students undertake field trips to a First Nations community—formerly known as an Indian reserve, a former Indian residential school, and a Powwow (a celebration where people gather together from across the country to share, dance, and visit). Typically, Mexican students receive a travel fund from the Intercultural University of the State of Mexico and the University of Regina covers the costs of accommodation and meals.

Stephanie, an Indigenous Mexican student who participated in the 2014 program, offered her perspective of her experience:

> Undoubtedly, a month is too little time to fully understand the nuances and deeper aspects of something as diverse and complex as what a country can be in terms of its culture, its language, and its history…. And even more when it comes to such a different reality from the one that we have always known – a reality in which we have lived throughout our entire life. However, it is precisely this radical difference which makes the best element to be able to appreciate certain elements in particular.
>
> Beyond issues such as the weather or even something like vegetation and landscape, one of the things that caught my attention the most was the enormous difference of customs and ways of living between our respective populations. While in Mexico social coexistence is characterized by a large component of verbal exchange, which among other things entails a particularly friendly way of forming affective bonds, my impression is that in Canada such ties are established based on less obvious interactions – what I would consider a much less effusive, colder character. Regardless, I accepted and assimilated such difference as much as possible, since it was going to be part of my life for a month. This led me to appreciate to a greater extent my own idiosyncrasy as a Mexican, ranging from day to day interactions – food, customs, traditions, family relationships, etc. – to ways of thinking.
>
> One of the activities that allowed me to appreciate this difference more clearly was the visit we made to the Indigenous reserve and to the pow wow. Firstly, because it is a reserve, a confined space where First Nations people live – very different from the dynamic in Mexico where the Indigenous peoples and the mixed population coexist throughout the national territory. Their way of living caught my attention, and although it was a short visit, we were able to learn about the challenges they face. My stay in Canada helped me understand and appreciate the value of belonging to a culture as rich as the Mexican culture, understand that other cultures are as complex, and that much contact between local communities is needed so that both can be enriched. – Stephanie (Intercultural University of the State of Mexico)

Stephanie's account demonstrates the importance of belonging to a community and working collaboratively to understand its historical complexity. The aim of this experiential learning endeavor encouraged students to spend time with the local Indigenous peoples which created a space where students can learn with and from people in these communities. This reflects the agenda of the University of Regina's strategic plans. This strategic direction also included implemented international mobility programs toward Indigenization for non-Indigenous students, as the next section will highlight.

Student-Focused Mobility Programs: Non-Indigenous Students

Indigenous students have not been the only ones to have access to the Indigenous-focused programs that the University of Regina has developed with its Mexican partners. In May 2013, the University of Regina's women's soccer team, called Cougars, took part in a mobility program in the State of Hidalgo. This program was developed in collaboration with one of the University of Regina's Mexican partners, the Monterrey Institute of Technology and Higher Education—Hidalgo Campus (Instituto Tecnológico y de Estudios Superiores de Monterrey—Campus Hidalgo,

in Spanish) to engage with the children of marginalized Indigenous communities of the Nahua and Otomí peoples through sports and artistic and cultural activities.

The 21 soccer players, led by their head coach, spent 15 days interacting with the Indigenous elementary students through friendly soccer matches and by carrying out projects to improve the conditions of rural elementary schools through painting inspirational murals and redesigning and renovating school gardens. The University of Regina provided $1,000 Canadian dollars to each participant, and students organized fundraiser events to cover additional expenses.

Through an online blog, the soccer players shared their daily experiences—highlighting some of the needs and disadvantages that children from Indigenous communities face day to day (U of R Cougar Women's Soccer in Pachuca, Mexico, 2013a, 2013b, 2013c). As shared in their 2013 online blog, the following text is excerpts from Carley's recollection:

> When I decided to go on this humanitarian trip to Pachuca, Mexico, I knew that I would learn many things. However, I was astonished by how much I learned in such a short amount of time. Through the students and staff at the University Campus Hidalgo, the Mexican community, and the children we worked with, I have learned more than I could have ever imagined; and I know that I am not just speaking for myself.
>
> At the same school, one of the teachers, Carlos, shared an old legend with us. The symbol of death is portrayed as a woman in his story, and death wanted to take Francisca away. So death hops on a train to Francisca's hometown and has a certain amount of time to take Francisca before she has to catch the next train. Death knocks on Francisca's door, but she is not there, as she is off helping a boy with a hurt leg. Throughout the story, death goes to numerous places to find Francisca, but Francisca is always somewhere else helping someone. In the end, death has to catch the train and leaves without taking Francisca's life because she could never find her. The moral of the story is that if you help others, you avoid death. This story shows that by giving, bad things in life will not burden you. I also learned that giving makes us happier, it is contagious, and that it is love.
>
> The community's drive for change in Mexico is amazing and I am so proud that we flew all the way to Mexico to be involved in these projects. Helping another nation has been such a great experience, do not get me wrong, but I recognize that what I did there, I can just as easily do here. In Regina, there are problems and poverty as well, and there is always a need for people who want to generate change. I want to improve my involvement within Regina's community and help others to make the city in which I live a better place. This is a test for all of us who went on this trip. We agree that it has been a life changing experience and that we learned so much, but the test for us is whether we bring that home with us. I believe it is something we can all do. Carly (Cougars women's soccer team)

As outlined in the Strategic Plan 2015–2020, Carley's international experience highlights how, through experiential learning and service learning, students can return home with a greater understanding of how colonial agendas and infrastructures influence all communities. Upon their return to Regina, the soccer players made numerous presentations to share their experiences with student peers, their families, and members of the community—influencing the local community knowledge and cultures.

Faculty-Focused Mobility Programs: Sharing Canadian Indigenous Knowledge with Mexican Professors

In the 2014 Spring/Summer semester (May to August), 2 years after mobilizing students through Indigenous-focused programs, the University of Regina decided to expand its offering and created professional development programs for Mexican faculty members. As such, the University of Regina hosted two groups of Mexican professors who participated in a 3- and a 4-week professional development program. The professors from Panamerican University (Universidad Panamericana, in Spanish) and from Monterrey Institute of Technology and Higher Education—Mexico City Campus (Instituto Tecnológico y de Estudios Superiores de Monterrey—Campus Ciudad de México, in Spanish) engaged in interactive seminars on a variety of subjects, including international cooperation, active learning, anti-oppressive teaching strategies, course redesign, inclusive education, and Indigenization of teaching. Program curricula included theories and research regarding second-language acquisition, understanding teacher–student interaction in classroom settings, presentation skills, and using instructional methodologies in second-language learning.

To reinforce their learning on Indigenization in education, the visiting faculty members and instructors learned about First Nations history and the Canadian Indian residential school system were taken on a guided tour of a First Nations community by the Executive Lead: Indigenization and visited the site of an Indian residential school in Saskatchewan. Discussions involved the sharing of teaching methodologies, storytelling, and life experiences. Program workshops and sessions were developed to cater to the needs of each Mexican institution, as the home institution of the participants covered all the expenses of the mobility program in support of their capacity-building efforts.

> Coming to a country previously unknown to me: Canada, and then arriving to the City of Regina, it was a symbiosis between learning and adventure. Knowing the culture, traditions, people, living in a university context, dialoguing and apprehending a foreign language, has been one of my best experiences. Without a doubt, I learned more from Canada through this experience of cultural immersion than I could have learned before from travel guides.
>
> A new word that I learned through this cultural immersion was: "First Nations". When I heard it, I did not understand much until one of the activities of the program included learning about Indigenous peoples and culture in Canada. I really enjoyed hearing firsthand from a First Nations person – an Elder from a local Indigenous community in Saskatchewan. The Elder gave us an explanation of who they are, their traditions and beliefs, and how they are well respected by everyone at the University of Regina.
>
> A thing that I remember a lot is that they gave us a guided visit to a building (within the University) that had a ceremonial center where First Nations perform ceremonies and invoke their spirits. A place where the material and immaterial world made a binomial of culture and beliefs creating an environment of deep respect and pride. The First Nations peoples expressed how proud they felt of their roots. Being able to partake in this activity made it a very enriching experience to me.
>
> In the end, as a learning experience, I now know that the Indigenous peoples at the University of Regina are respected and not discriminated against because they are a minority, and

> that the Indigenous peoples, without losing their traditions, live harmoniously with other non-Indigenous peoples as any other Canadian citizen. Brenda (Professor, Panamerican University)

Brenda's comments are a testament to the success of how the University of Regina's strategic goals have progressed the building of long-term relationships with Indigenous peoples. However, her comments are isolated from her experience. The university's strong relationship with local Indigenous communities does not reflect the experiences and relationships of all Indigenous communities in Saskatchewan or Canada. The reality of settler colonialism in Saskatchewan necessitates that the 2009–2014 and 2015–2020 strategic plans must prioritize the decentering of colonial epistemologies and the centering of Indigenous ontologies, practices, ideas, and principles within the university academic endeavors.

Administrative Staff-Focused Mobility Programs: University of Regina Staff Embracing Inclusiveness

In collaboration with Panamerican University, the University of Regina developed the first international professional development program for 31 members of its administrative staff with a focus on inclusiveness and intercultural competencies. This 1-week intensive training program was held in Mexico City in February 2015. It was hosted by Panamerican University's School of Administration of Institutions (Escuela de Administración de Instituciones, in Spanish).

The 2015 Professional Global Leadership Program aimed to expose university staff members to topics related to global competencies, cross-cultural communication strategies, customer service, Mexican culture and traditions, and the history and knowledge of Indigenous peoples in Mexico. Interested staff submitted an application, and participants were selected based on their roles in working directly with international students. The total cost of the program was covered through the contributions of each participants' department, scholarships, professional development allowances, revenue generated through previous mobility programs, and through personal contributions.

As evidenced by the following testimonies from program participants, through the 1-week intensive professional development program, the University of Regina was able to further its strategic goal of building a friendly, respectful, diverse, safe, and welcoming university for all:

> Being in Mexico City was fascinating because history is alive and is well-celebrated. You have a clash of cultures and time periods. You have the modern and ancient buildings around you – and what it tells you is that you are not only celebrating Indigenous peoples, but also their lasting cultural impact on modern society. Rebecca (President's Office, University of Regina)

> Working with recruitment, I encounter various students with multiple beliefs and values systems and this program has provided me with the necessary skills to be able to understand the best way to interact with them. Shayla (Enrolment Services, University of Regina)

> We learnt the Spanish conquerors had come in and turn the Indigenous sanctuaries into Christian churches and monasteries. They turned them into schools for the local native population to learn the Spanish language, theology and culture. Similar to what happened in Canada with the residential school systems. Jamie (Financial Services, University of Regina)

> Thanks to this program I now have a better understanding of where our international students are coming from and what is like to be in another culture and country. Raelynn (Faculty of Business Administration, University of Regina)

The administrative staff of the University of Regina had the opportunity to enhance their intercultural competencies, experience firsthand what students go through when they go abroad, and learn about the breadth of Mexican Indigenous peoples—which will allow them to further the university's agenda to connect and engage with all the communities they work with, including Indigenous peoples.

Common Themes and Lessons Learned: Weaving Indigenous and International Agendas

Through the University of Regina's international programs, students, faculty members, and university administrative staff—Indigenous and non-Indigenous—have been able to discover the culture of Indigenous peoples and share their own Indigenous heritage and history. Through the stories of the participants, we can see why Embleton, Gold, Lapierre, and Stevenson, (2008) believe academic exchange is transformational for individuals, as they return to their home country having a stronger appreciation of their heritage and an avidness to give back to society. On their return, the University of Regina study-abroad participants are required to share their experiences and knowledge with their community. This sharing of lessons learned to students, professors, and administrators benefits the university and the community by furthering the goals outlined in the University of Regina's strategic plans, such as valuing Indigenous cultural heritage, building respectful attitudes toward Indigenous people's traditions and beliefs, and strengthening the university's relationships with local Indigenous communities.

The development and implementation of these projects offered contextual understandings for participants to critique the domination and exploitation associated with settler colonialism, while also successfully increasing critical consciousness of intellectual and practical Indigenous philosophies, perspectives, agendas, and pedagogies. Moreover, the participants gained an understanding of the relationship between the local and international Indigenous peoples and their lands, an understanding that differs from settler colonialism. In this way, these programs were successful in their outcomes of providing spaces where different Indigenous and non-Indigenous communities could come together in collaboration and dialogue. These programs could be classified as reconciliation Indigenization (Gaudry & Lorenz, 2018), where universities work to reconcile Indigenous ideologies and perspectives with Western ideologies and perspectives in relationship with local Indigenous communities. Even

though this chapter focuses on the apparent success of these specific internationalization programs, it is important to put these programs into a larger university-wide context. Gaudry and Lorenz (2018) caution that universities tend to create these reconciliation spaces in only a handful of programs that are insignificant to the larger workings of the academy. This is certainly the case for these internationalization programs. While these programs may offer an example of implementation, it might be argued that fundamental changes throughout the university have yet to occur. If Indigenization is to be a process where universities transform their existing academy to equitably including Indigenous ideologies, perspectives, voices, scholars, and students, then these programs might represent false hope in achieving this outcome. What these programs do highlight is that the University of Regina has made one positive step toward the practice of reconciliation Indigenization. Institutions which progress down this road must be vigilant that international programs such as these do not become "the solution" or become "the answer" to the institution's responsibility to Indigenization—but rather one step along a pathway toward a more comprehensive agenda.

These international programs at the University of Regina show us the positive results that institutions can achieve when working in strong local and global collaborations—connecting Indigenous and non-Indigenous peoples toward a common goal. By developing Indigenous-focused international inbound and outbound programs, academic institutions can promote intercultural dialogue and active international citizenship. Becoming an international citizen means understanding international issues and how they affect local communities as well as fostering and protecting cultural heritage in favor of an ecologically sustainable future. This international awareness promotes understanding and respect, mutual comprehension, and solidarity among students, faculty, and staff members from multiple backgrounds. It also means valuing Indigenous cultural heritage; building respectful attitudes toward nature, cultural diversity, and traditions according to the Indigenous peoples' beliefs; and using that awareness when making executive decisions, developing policies, and implementing programs.

Through international partnerships, higher education institutions can not only actively participate in both the cherishing and the sharing of Indigenous perspectives, but can also encourage their students, faculty, and staff to become international citizens. By embedding Indigenization within the university's strategic plans, Dr. Vianne Timmons prioritized the implementation of the Indigenization in practical ways within the internationalization agenda. The inclusion of Indigenization and internationalization in the University of Regina's strategic plans highlights the important role a leader plays within an institution. In order to deepen and further Indigenization in academia, it is imperative that this agenda is championed by the senior leadership team and is embedded in strategic planning, allocation of resources, and program and curricular development and implementation. The University of Regina may still have a long way to go before its community members can be seen as international citizens; however, by prioritizing Indigenization through its internationalization agenda, it is making progress toward this ideal.

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Chapter 8
Embedding Indigenous Knowledges in Australian Initial Teacher Education: A Process Model

Susan Whatman, Juliana McLaughlin, and Victor Hart

Abstract In this chapter, a model for supporting the ***ongoing*** process of embedding Indigenous knowledges in initial teacher education (ITE) and teaching practice is discussed. This model was developed out of an Australian Office for Learning and Teaching (OLT) project which examined factors that supported the practicum journeys of Indigenous and non-Indigenous preservice teachers, and their school-based supervisors. The model foregrounds and illustrates the relationships and interactions between policy and practice contexts in initial teacher education. Selected vignettes from the participants provide examples of the embedding practices in each context. In this project, we positioned preservice teachers as "future curriculum leaders" and "knowers". Their curriculum decision-making and practices around embedding Indigenous knowledges are shared to exemplify how the practice contexts in schooling can inform future professional work of all teachers and shape praxis in schools and teacher education institutions.

Introduction

Previous chapters have unpacked the historical relations underpinning the engagement of education systems and stakeholders with Indigenous knowledges and presented particular cases of how and where embedding Indigenous knowledges, particularly in community education and/or university contexts, have been undertaken. This last section of the book focuses upon university-partnership approaches which educators can examine to adapt in their own education contexts.

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In this chapter, a model for supporting the ***ongoing*** process of embedding Indigenous knowledges in initial teacher education (ITE) and teaching practice is discussed. It was developed out of an Australian Office for Learning and Teaching (OLT) project examining factors which supported the practicum journeys of twenty-one Indigenous preservice teachers, four non-Indigenous preservice teachers, and all of their supervisors (c.f. Hart, Whatman, McLaughlin, & Sharma-Brymer, 2012; McLaughlin, Whatman, & Nielsen, 2014). The model foregrounds and illustrates the relationships and interactions between the following four contexts:

- Policy, governance and professional teacher standards;
- Teacher education;
- School and community curriculum and programs; and
- Teaching practicum and professional experience.

This chapter commences with an overview of the original project from which the process model shortly illustrated in Fig. 8.1 were developed. The theoretical and methodological underpinnings for the research design are included along with an overview of the project findings that explain the contexts impacting upon the embedding of Indigenous knowledges in initial teacher education. Each of these contexts is then unpacked with the assistance of selected vignettes from four of the preservice teacher participants and four supervising teachers, to provide examples of the embedding practices in each context. In this project, it was the preservice teachers who were positioned as "future curriculum leaders" and "knowers", and their stories of curriculum decision-making and practices around embedding Indigenous knowledges are shared to exemplify how the *practice contexts* (Kemmis & Grootenboer, 2008) in schooling can inform future professional work of all teachers and shape identity-making *praxis* in schools and teacher education institutions (Schaefer & Clandinin, 2019).

The Future Curriculum Leaders Project

The research design of case study was selected because of the strengths it offered in investigating a particular site—one university's ITE program—and its related *practice sites* across many schools. This case study of ITE practices around embedding Indigenous knowledges and perspectives was built around a central phenomenological question of "what has been your experience of embedding Indigenous knowledges (IK) in Queensland schools"? We interpreted this central question via collection of many varied documents, including ITE curriculum and assessment requirements and units of work created by the preservice teachers. The interviews and focus groups were conducted using a cross-cultural "yarning" approach (Walker, Fredericks, Mills, & Anderson, 2014, p. 1216) with the preservice teachers and their supervising (Mentor) teachers. The larger project involved 25 ITE students in total, but this chapter will focus upon the experiences of two Indigenous and two non-Indigenous preservice teacher participants ($n = 4$) enrolled in an undergraduate Bachelor of Education

Fig. 8.1 A process model for embedding Indigenous knowledges (Permission from McLaughlin & Whatman, 2014)

degree, and their non-Indigenous practicum supervising teachers ($n = 4$) over a series of practicums in third and fourth year of study (or final practicums for graduate entry programs).

The purpose of the project was "talked up" with Indigenous colleagues and stakeholders, both within the university and with external educational groups consistent with the community protocols presented by Hart and Whatman (1998), Cajete (1994) and Fredericks (2007). The project team established a community ethics/reference panel comprised of Indigenous staff from within the university and in Aboriginal and Torres Strait Islander education offices within the state Department of Education. Additionally, the Manager of Teacher Professional Standards from the state teacher registration and accreditation body and the Chairperson of the advisory committee to the state Minister for Education were also on board. Preservice teachers and supervising teachers taking part in individual, pair and/or focus group interviews were

given back their transcripts for further consideration and comment and, ultimately, power to veto if they were uncomfortable with their discussions. No participants elected to withdraw from the project and no transcripts were vetoed.

A phenomenological lens (Brown & Gilligan, 1992; van Manen, 1990) was applied in this case study, combining a blend of theoretical frameworks. The first of these theories was Indigenous standpoint and the cultural interface (Nakata, 2007). The cultural interface assisted with interrogating how curriculum, pedagogy and assessment practices on practicum could be embedded with Indigenous perspectives and knowledges. Firstly, as discussed in Chap. 1, Indigenous perspectives are possessed by Indigenous peoples, although Indigenous knowledges are negotiated and understood in partnership with Indigenous and non-Indigenous people (Nakata, 2007, p. 8). Non-Indigenous people cannot "know" what Indigenous knowledges to embed without curricular engagement with Indigenous peoples and their perspectives. Engagement with Aboriginal and Torres Strait Islander perspectives can occur in multiple ways, over time and place, whether being delivered by Indigenous teachers or non-Indigenous teachers in collaboration with Indigenous teaching partners and curricular advisors, or by using educational resources developed by Indigenous peoples. Indigenous knowledges then are a contested, ever-changing corpus of knowledge that Nakata (2007) argues is able to be understood by both Indigenous and non-Indigenous people, as their knowledge systems interface.

Critical race theory or CRT (Dixson & Rousseau, 2005; Ladson-Billings, 1999; Ladson-Billings & Tate, 1995; Milner, 2007; McLaughlin & Whatman, 2011) was also employed to unravel the experiences of preservice teachers and their supervisors in various schools throughout Queensland. Milner's (2007) unpacking of CRT notes four parts to a cycle of reflection and action: self, self in relation to others, self in relation to system and systemic change. The preservice teacher participants were recruited first to the project, with the offer of resourcing support from the project team as they undertook their practicum requirements. Their supervising teachers were then invited to join. The participants' experiences reflected shifts from places of tension and uncertainty as knowledge systems clashed and competed around how to embed IK in their particular teaching contexts, to feelings of empowerment and resourcefulness with their various successes with what Nakata (2007) would call knowledge convergences.

A Process Model for Embedding Indigenous Knowledges

The model depicted in Fig. 8.1 revolves around Nakata's (2007) theory of the cultural interface as a place of *convergence of knowledge systems*, experiences and ways of knowing, being and doing that inspire innovative learning experiences for all students. The four contexts illustrated below represent the ways in which the practice site of ITE at one university intersects with and relates to multiple related sites across government sectors, universities and schools, departments within universities, and not least, the communities in which these practice sites are found.

In order for IKS to be acknowledged and valued across these four contexts, our project illustrated that various stakeholders need to move through stages of "coming to know – seeking help – receiving affirmation – and committing to change" (c.f. McLaughlin & Whatman, 2015, p. 113). For example, in the context of policy, governance and teacher professional standards, IKS would need to be recognized and valued, and *articulated* into practice sites through these policy instruments. Valuing IKS as a part of professional teacher practice is an example we will return to shortly. In the context of teacher education, preservice teachers and their lecturers would need to have the opportunity to develop a depth of knowledge in IKS as a part of their formal studies. Not only then would this be an act of reconciliation, an important phase of institutional awareness as argued by Gaudry and Lorenz (2018), it would also demonstrate significant institutional commitment to reconfiguring their ITE programs and resources to reflect "the importance of knowing" (Phillips & Lampert, 2012, p. 5). Within universities, between departments such as Faculties, field experience offices and student support services, coming to know the importance of embedding IKS triggers the creation of powerful, new relationships. In the example offered shortly, the potential to create new ways of operating that support and nurture novice Indigenous teachers can make the difference between a successful practicum experience and graduation or failure to complete. In the context of schools and the communities in which they are located, our process model illustrates that stakeholders need help. Partnerships, mentoring and role modelling are key strategies here to support the embedding of IKS in school curricula, and relatedness (Martin, 2008) with Indigenous community members provides the means to which affirmation—"are we getting it right?"—can occur. As Nakata argued, Indigenous knowledges may be negotiated between Indigenous knowledge holders and non-Indigenous peoples who are "coming to know", but only through close, sustained and proper connection to the perspectives of Indigenous knowledge holders will ensure this.

Each of these four contexts will be explored further, with selected vignettes of the cross-cultural yarns we held with preservice teachers and their supervising teachers in various practice sites.

Context 1—Policy, Governance and Professional Teaching Standards

In the early 2000s, a groundswell of support for expanding the understanding of teacher professionalism was occurring. For example, the registering body for Queensland state school teachers recognized that teachers' knowledge and dispositions were key factors for successful educational outcomes for Indigenous learners (Tripcony, 2004). A working party on the role of Indigenous studies in state schools argued that teachers' personal and professional dispositions and commitment, combined not only with knowledge of Aboriginal and Torres Strait

Islander histories but also by being able to make connections between this historical knowledge and cross-cultural awareness, were prerequisites for teachers to be effective teachers of Indigenous students and Indigenous studies (Tripcony, 2004). This work at teacher registration level supported the parallel work occurring in the Curriculum Studies Authority at state level (QSA, 2008) and nationally (AITSL, 2011) to articulate policies and teacher professional standards around the value and role of Indigenous knowledges in school curriculum for all students.

Some level of proficiency in Indigenous knowledges are now mandatory for teacher registration in Australia (Nakata, 2011), whether a graduating preservice teacher or one who has been teaching for many years. Teachers must provide evidence through a portfolio submission, online through their state-based professional accreditation body (e.g. the Queensland College of Teachers). But, as Ma Rhea and Anderson (2011), MaRhea, Atkinson and Anderson (2012) and Moodie and Patrick (2017) have pointed out, these particular teacher professional standards in Australia (AITSL, 2011) are neither well understood nor particularly disruptive to the settler-colonial narrative. The institution from which this project arose first introduced a compulsory Indigenous Education subject in 2003 and even today, the requirement to know more about Australian race relations has not increased by much with most teacher education programs now offering two compulsory Indigenous studies courses (as opposed to one).

As can be seen in Table 8.1, the two standards which specifically address Aboriginal and Torres Strait Islander peoples or knowledges are concerned with how to better *teach* Indigenous *students* (1.4) or how to better *understand* Indigenous peoples in relation to themselves to promote *reconciliation* (2.4). At the time, this project was running, the state requirements for teacher registration in Queensland also included a standard that recognized having knowledge of Indigenous peoples' histories and cultures, that is, having some kinds of Indigenous knowledge, would be a prerequisite for applying for advanced teacher status, but this did not politically survive the move to national teaching standards under APST in 2011. Moodie and Patrick (2017) maintained that:

> despite the increasing availability of high quality curriculum resources, and the indicative positive shift in policy, we suggest that the focus on culture in the AITSL Standards reinvests in the colonial representation of "authentic" Indigeneity as a static, historical artefact (and) marginalises engagement with the political dimensions of Indigenous experiences in the colonial settler state. (p. 40)

It achieves this with Standard 1.4 by focusing upon how teachers, presumably non-Indigenous, can draw upon their existing Western hegemonic training to devise and select "the best" methods of teaching Indigenous students, informed by an assumption that Indigenous students are somehow lacking (Nakata, 2007). Secondly, Standard 2.4 could be read more cynically as "just learn to treat Indigenous people more nicely to improve race relations". Moodie and Patrick (2017, p. 40) argued that university responses to meet the standards as they are interpreted above result in a "double movement of recognition and dismissal; a process which strives to account for the contemporary presence of the indigene, whilst maintaining an intellectual and temporal distance from the lived realities of Indigenous peoples".

Table 8.1 A summary of Australian Professional Standards for Teachers (APST) at all stages regarding Indigenous knowledges (from Moodie & Patrick, 2017, p. 441)

Graduate	Proficient	Highly accomplished	Lead
1.4: Strategies for teaching Aboriginal and Torres Strait Islander students			
Demonstrate broad knowledge and understanding of the impact of culture, cultural identity and linguistic background on the education of students from Aboriginal and Torres Strait Islander backgrounds	Design and implement effective teaching strategies that are responsive to the local community and cultural setting, linguistic background and histories of Aboriginal and Torres Strait Islander students	Provide advice and support colleagues in the implementation of effective teaching strategies for Aboriginal and Torres Strait Islander students using knowledge of and support from community representatives	Develop teaching programs that support equitable and ongoing participation of Aboriginal and Torres Strait Islander students by engaging in collaborative relationships with community representatives and parents/carers
2.4: Understand and respect Aboriginal and Torres Strait Islander people to promote reconciliation between *Indigenous non-Indigenous Australians*			
Demonstrate broad knowledge of, understanding of and respect for Aboriginal and Torres Strait Islander histories, cultures and languages	Provide opportunities for students to develop understanding of and respect for Aboriginal and Torres Strait Islander histories, cultures and languages	Support colleagues with providing opportunities for students to develop understanding of and respect for Aboriginal and Torres Strait Islander histories, cultures and languages	Lead initiatives to assist colleagues with opportunities for students to develop understanding of and respect for Aboriginal and Tories Strait Islander histories, cultures and languages

The value of being able to demonstrate competence or proficiency against these standards was questioned by one of the preservice teacher participants. Vanessa, who did not identify as Indigenous to her supervising teacher, was placed at a primary school for her internship in a region of South East Queensland that had significant numbers of Indigenous students and was highly commended for its phases of EATSIPS implementation (see Context 4). Despite being an EATSIPS school, she found her experiences of embedding at this school were characterized by resistance from her non-Indigenous supervising teacher, Amanda. Vanessa identified some possible reasons in our yarns with her, including that the school had its own cultural studies curriculum with an Aboriginal teacher who would take the children away from their regular primary classroom for these lessons. Vanessa felt that Amanda did not see the need to embed IK because they were doing Aboriginal studies with someone else anyway. These studies were not assessed, however. IKS was seen as peripheral to literacy and numeracy acquisition and not embedded across the subjects as was intended by priorities identified in the Australian Curriculum (ACARA, n.d.) and the policy imperative of Standards 1.4 and 2.4. Amanda allowed Vanessa to develop a Studies of Society and Environment (SOSE/Humanities) unit of work in which to

demonstrate her pedagogic work in embedding IKS, but it was always prioritized behind more important subjects:

> … she let me develop a SOSE unit on the Paralympics, which was awesome…but it was one of those things that was always first to go if we were behind in maths. Like, if we had assembly, or a visitor to the school, then she would make up the lost time in maths…, she'd say 'we won't do your SOSE today'

Vanessa's experiences with her supervising teacher left her feeling vulnerable and uncertain about whether or not to highlight her proficiency in Standards 1.4 and 2.4 as evidence of her professionalism in her teaching portfolio, which was required to be eligible for registration as a teacher and to gain employment:

> I really didn't know if I should make a big deal out of my passion for Indigenous studies. I thought it might work against me if I got a panel who didn't really value it. But I spoke to one of my friends in the department and she told me to go for it. So I thought, 'stuff it, this is who I am. Take it or leave it'.

These vignettes illustrated that policy imperatives do not immediately translate into desired practices. Vanessa's experiences with embedding IKS may have been entirely different with another teacher at the same school but it exposes the vulnerability of Indigenous preservice teachers in the professional experience component of their initial teacher education (ITE) whose developing expertise in Indigenous knowledges may not be valued—may even be ridiculed—in a policy environment where it should be.

Context 2—Initial Teacher Education (ITE)

Quality teaching and learning occur in complex academic and social spaces, one that allows students to learn to their full potential academically whilst developing into independent, responsible and innovative citizens. Modelling of quality teaching and learning, curriculum decision-making, designing of authentic assessments, classroom and behaviour management, the whole process of conceptualizing and translating knowledge into student learning occurs at the teacher preparation stage.

In 2014, the Australian Government initiated a national-wide review of teacher education programs, seemingly in response to the imagined crisis of Australia's slippage in international testing ranks (such PISA[1] and TIMSS[2]). The Tertiary Education

[1]PISA is the Programme for International Student Assessment, organized by the Organization for Economic Cooperation and Development (OECD). Every three years, it tests 15-year-old students, as a pivotal moment in their lives about whether or not to pursue further education, from all around the world in mathematics, reading and science. OECD then ranks countries based on the performance of their students. Read more here: http://www.oecd.org/pisa/.

[2]TIMSS is an international survey called Trends in International Mathematics and Science, run by the International Association for the Evaluation of Educational Achievement (IEA) at Boston College. It surveys students in Year 4 and Year 8 every four years. Read more here: https://www.acer.org/au/timss.

Ministerial Advisory Group (TEMAG, 2014) of the Australian Government handed down its report at the end of that year with recommendations as to the compulsory content of all teacher education programs to which universities and colleges should apply. The impact of the TEMAG recommendations was felt across all ITE programs, but particularly in the primary education space, where there are now few or no electives for students to choose from, and consequently, there are few universities who offer Indigenous studies major or minor within their program. In Secondary ITE, Indigenous studies are typically contained within the history teaching area. At the same time, a semester offering of Indigenous studies which would typically have included thirteen weeks of face-to-face classes was reduced to include field experience components, or a mixture of face-to-face and online modules, or an even more compacted version offered for six weeks duration.

Despite the inclusion of IKS and valuing Indigenous histories in Australian Curriculum, and the need for proficiency in IKS as a graduate teacher and highly proficient teacher in the APST as discussed in the previous section of this chapter, Indigenous studies as discrete coursework have been squeezed out by the TEMAG recommendations and the subsequent literacy/numeracy accountability imperatives. It means that developing teacher proficiency in IKS has been effectively shifted to the continuing professional development space, or outsourced to traditional faculties, such as anthropology, to deliver disciplinized knowledge "about" Indigenous peoples (Nakata, 2007). On one hand, this changing context has generated great new initiatives, such as the 3Rs ACDE modules launched by Buckskin, Price and Anderson (2016). Similarly, the host institution for this project developed an online CPD module for preservice and graduate teachers (launched in 2013), as did many other universities. Another positive consequence has been the increase in the number of private/profit providers of continuing professional development in embedding Indigenous knowledges—too numerous to identify them all—but many are completely owned and operated by Aboriginal and Torres Strait Islander peoples such as Blackcard (Watson and Bayles, n.d.). And the not-for-profit/Foundation space is equally crowded, with Recognize (n.d.), Reconciliation Australia (n.d.) and the Indigenous Literacy Foundation (n.d.).

We challenge whether it is acceptable to have only two courses in Indigenous Studies in a teaching degree and the practice of sending education students to other disciplines for their knowledge. The tendency of universities to house IK within Arts degrees majoring in anthropology, history and political studies and couple them with intensive postgraduate ITE programs to achieve a depth of knowledge reveals a particular worldview that is dominant in Western universities—one that sees IK as just another content area to "fit in" around the existing hegemonic arrangements of education, as Blair et al. argued in Chap. 1. It also does little to challenge the disciplinary traditions, particularly anthropology, where Indigenous peoples are studied as the "Other", fixed in time, and something less than human (see, e.g., Fanon, 1963; Levinas, 1974; Nakata, 2007; Nooteboom, 2012).

This depth of knowledge issue was highlighted by one of our non-Indigenous preservice teachers who took part in the project. Danielle participated as a second and third year Bachelor of Education student (over 2 years of the project), so she was not as

advanced in her teaching journey as some of the other students. Electing to undertake the Indigenous studies minor in her primary (Elementary) teaching degree made her eligible for this project, as having a depth of knowledge about Indigenous histories and cultures was considered essential before attempting to embed IKS on teaching practicum. The minor enabled students like Danielle to take four subjects, choosing Introductory Indigenous Studies in Education (which was compulsory) plus Politics and Identity, Black Literature, Australia's Indigenous History, and/or Indigenous Research Ethics and Protocols. Danielle had only undertaken the Education core subject plus one more at the time of these yarns.

> Danielle: [Researcher] said to me just like 'where you see an opportunity to embed Indigenous knowledge when you're teaching, just do it'. If you don't have a knowledge base, you're not going to know what you can include - does that make sense? It's not like I'll read a unit and be like oh "I can embed this or I can do that".

As a second year preservice teacher, non-Indigenous, and just beginning her embedding journey, Danielle was very hesitant. She was past the stages of recognizing and valuing IKS and in the throes of "coming to know". Preservice teachers are already struggling with knowing when and how to use their fledgling pedagogical knowledge and disciplinary knowledge so from Danielle's vignette, it seemed as though the project of embedding IKS was too overwhelming.

However, Danielle's supervising teacher, Mary, who was also non-Indigenous, had a compelling yarn to tell about the power of compulsory Indigenous studies in ITE, engaging with Indigenous perspectives with local community Elders and professional learning provided by EATSIPS-ISSU. Mary had completed her ITE in the previous decade in which compulsory Indigenous studies were included. In short, Mary was just like Danielle plus eight years of teaching experience. Her initial studies had fired a genuine desire to learn more, and she had undertaken numerous further professional learning opportunities via the Department of Education and Training. She thus acquired a depth of knowledge about Australia's history of dispossession, systemic discrimination and its ongoing oppression of Indigenous peoples. Mary did not see her professional role as a teacher to simply "redress the balance" as a form of social justice or act of reconciliation. She saw the potential of IKS as essential learning for *all* students. When asked what areas of the curriculum her preservice teacher Danielle would be planning to teach, Mary's excitement was clear:

> Mary: I'll show you it. It's really great. So what we'll do while Danielle's here is that we're working on light reflection within science. One of the really great activities is looking at light through different cultures. What different cultures knew about light - so we thought we'd just take them to see what we could find out about Aboriginal perspectives of light - through their culture. So, that's what we're going to do.

Context 3—Teaching Practicum and Professional Experience

The third context illustrated in Fig. 8.1 draws upon the embedding experiences of Kassie, a Torres Strait Islander early childhood preservice teacher, who was embedding IKS into a *very* early years' curriculum, and her site coordinator, Demi. Kassie had no exemplars to work from, no Indigenous supervising teachers to mentor her and we as researchers also had little to no experience in embedding IKS in early years' curriculum (or community life) to provide much assistance in our yarning sessions. Kassie's previous practicum was in a school with Prep to Grade 2, whose ages are typically between 4 and 8 years, so working with 18-month to 24-month-old toddlers, in long day care (6 am to 6 pm) who were also pre-literate was challenging in every respect.

Kassie constructed her approach from the ground up—she interpreted the curriculum requirements of the age group, the learning purposes for the cross-curriculum priority of Aboriginal and Torres Strait Islander histories and cultures, and used her deep knowledge of Torres Strait Islander culture to engage her young learners. This extended vignette from one of our researcher-participant yarns identifies a number of issues that arose and were resolved within the teaching practicum context of this site:

> R1: We were going 'yeah, okay, embedding Indigenous knowledges, that's different, with kids that are pre-literate.
>
> Kassie: I didn't know how to do it. So, I thought, I'll focus on the sea, like just being Torres Strait, it's a big part of our culture. So we're doing under the sea animals. We do one each day. Then, fingers crossed, by the end of the week, we'll have an aquarium. So I've got a box out the back that they've painted and we're going to hang all our animals in there and then put blue cellophane over, so it's an aquarium…I did turtle and fish and, yeah, tomorrow I'll probably do dugong…It's been really hard trying to embed Indigenous perspectives with kids this young. I'm finding it really challenging. I didn't know how else to do it. Something they can relate to…I've been doing rolly polly with them because I also know it in my language. But, they didn't know rolly polly before I came, so I am teaching them in English first and then we'll start singing the language [version].
>
> R1: It's really hard to see, I guess, how they're responding, isn't it? Apart from smiling or being delighted with something,
>
> Kassie: It's very different, because I'm used to kids that age up home and so this is already familiar to them. So, you're talking about something they already known, then it's like, how do I introduce it [here] without losing their concentration?
>
> R2: How has your group leader [supervising teacher] responded to the new ideas?
>
> Kassie: Really good. She's been supportive and she encouraged it as soon as I told her.
>
> R2: The [Faculty Head of school]'s whole idea was, at this age bracket, you have to be spontaneous. So, how did you find that with your general teaching and adjusting?
>
> Kassie: Yeah, good. I find it a lot easier than trying to do a lesson that I planned!…With the spontaneous side of it, it's something they're already doing that they're interested in, so I just try and build on from that.
>
> R1: You're just plugging in your own knowledge then too, aren't you? See, that's the difference. You're plugging in a knowledge set that your group leader can't because your

> knowledge has grown out of all your experiences and family life and everything else. So, you're seeing those natural opportunities [to embed IK].

As mentioned earlier, Kassie found teaching in Prep to Grade Two in her previous practicum as much more structured. It was more typical of practicum situations where a supervising teacher has already planned out the term and is allowing a preservice teacher to take over sections of delivery. In this placement, Kassie had no such structure in place in the site and needed to draw on over-arching curriculum guidelines to plan and deliver her own material:

> R2: So what do you think could have prepared you better for this sort of practicum?
>
> Kassie: I don't know. I think it's just the difference between structures. Like, we've been in school settings and it is so structured. 'This is what happens' and then you get in there and 'this is your lesson plan', the observation templates. Then your host teacher pretty much goes 'okay, well, we are doing this'…[Here], there was no lesson plan template. It was all just 'you do it yourself', kind of work it out. I think for me that was the hardest part of the childcare prac. There was not as much guidance. But then, it was good, because there was a lot more freedom to do stuff.

Demi, the Site Coordinator for Kassie's practicum, was not directly supervising her each day but was responsible for her evaluation and practicum reporting. Kassie's mentor teachers in the 18–24 months room would often change over the day (long day care meant shift hours for staff) and sometimes would not have as high a qualification as what Kassie was studying herself (Bachelor's degree), so she was in an unusual situation of not being mentored by one person. Demi was the registered teacher-in-charge of the long day care centre, so it was her responsibility to liaise with Kassie over her curriculum and pedagogic decision-making.

> Demi: I didn't know that (Kassie) was Torres Strait Islander. I had no idea… From what I've seen - because I'm not in the rooms all the time – (she's) heading in the right direction and working really well so I'm really happy with it. I'd quite easily have her back again. But I'm doing First Australians and Social Justice at the moment at uni towards my Bachelor so that's why supervising Kassie really piqued my interest… I've got all this information running around in my head and I'm thinking "well where do I start?" But yeah, I didn't realise the injustices that had been done to Aboriginal peoples and Torres Strait Islanders. I had no idea and I've been here all my life.

Demi's own experience with being a university student whilst working as the Group Leader, and in the midst of learning about race relations in Australia, appeared to shape her view of the potential resource she had in Kassie as a Torres Strait Islander educator, rather than deficit. Kassie's vignette is a great illustration of the way the arrangements underpinning practices in education sites, or practice architectures, can be considered either enabling or constraining (Kemmis & Grootenboer, 2008). The restrictiveness of curriculum structures in other school sites on one hand gives clear guidance as to what a preservice teacher should follow in order to experience some success as a novice teacher. On the other, in situations like these where more experienced teachers are no more capable of providing guidance (and are usually less able to do so), the lack of templates and Demi's own reflections on what she did not know about Australian history—"*and I've been here all my life*"—was enabling

for Kassie. She could determine how and when her deep knowledge of Torres Strait Islander culture could be pedagogized (Singh, 2002)—selected and sequenced into the very young students' learning activities—and she could determine what would be the criteria for success.

Context 4—School and Community: Relationships, Curriculum and Programs

Community participation in decision-making on Indigenous education has been a long articulated aspiration of Aboriginal and Torres Strait Islander peoples (c.f. DEET, 1993; Department of Education, Skills and Employment, n.d.; McLaughlin, Whatman, Ross &, Katona, 2012; Whatman & Duncan, 2012). Whether schools and communities agree on the nature of participation is another matter but advances in Indigenous education policy have assisted with mutual understanding. The Queensland Government endorsed a policy and strategic document for Indigenizing education called the *Embedding Aboriginal and Torres Strait Islander Perspectives Framework* (EATSIPS-ISSU, 2011) and developed a system of implementation for schools around three principles of personal reflection, classroom ethos and whole-school ethos (2011, p. 13–14). Two members of the EATSIPS implementation team joined as reference group partners on this project and conducted EATSIPS policy training for the research team, most of the preservice teacher participants and some university staff.

When we brought the Field Experience Placement Office manager into the project, Anne did not have much knowledge or appreciation of the role of the Indigenous Student Support Unit (ISSU) of the Education Department or about the policy of EATSIPS. We shared the EATSIPS framework with her and also explained that once schools have completed professional learning with the ISSU, plus reached a number of other benchmarks, they were identified as preferred schools for embedding Indigenous knowledges—a kind of quality ranking system depending upon how far along the embedding journey those schools had come. Thus, having a good ranking under the EATSIPS framework was also a good indicator of the quality of the school–community relationship as it was a key criterion under the whole-school ethos. Specifically, schools had to demonstrate, after completing introductory professional learning, what they had progressed with regard to professional and personal accountabilities; community engagement; organizational environment; and curriculum and pedagogy. Schools could be ranked as uninformed, aware, engaged, mobilized or actioning (EATSIPS-ISSU, 2011) (Fig. 8.2).

Now with Anne's assistance in the Field Experience Office, we requested that the project participants be placed in EATSIPS schools wherever possible as a part of the research strategy for the Future Curriculum Leaders project. We considered schools which were already sensitive to Indigenous knowledges and perspectives to be more responsive to our participant preservice teachers' attempts to embed

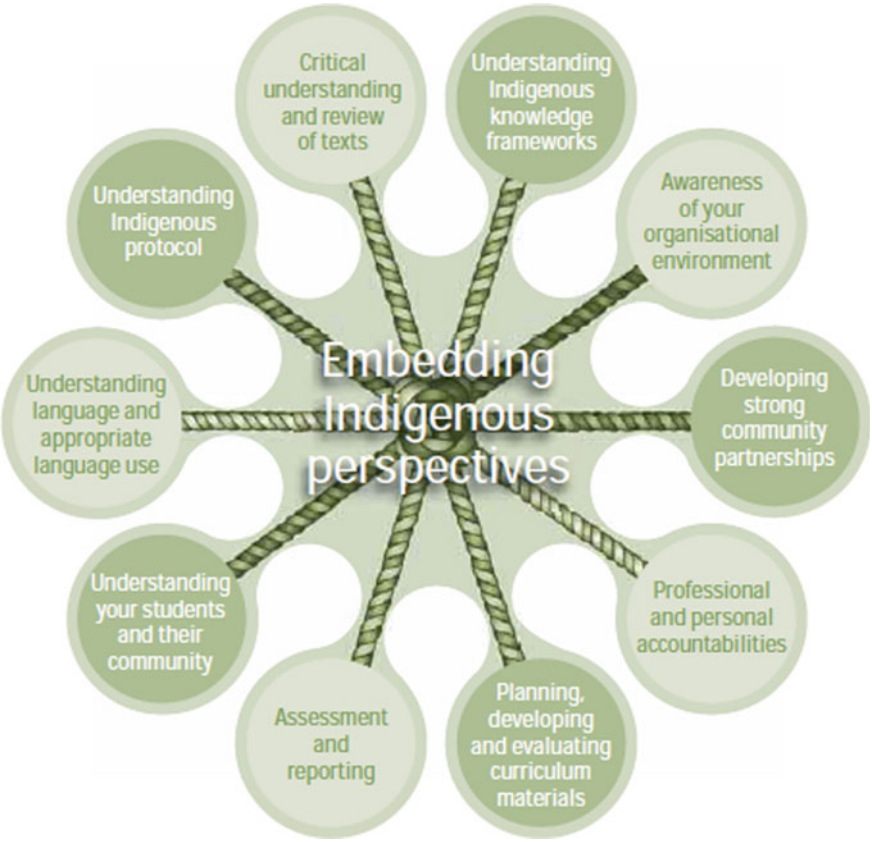

Fig. 8.2 Using the EATSIPS framework to inform teacher decision-making in partnership with the school community (EATSIPS-ISSU, 2011, p. 50). Reproduced with permission of the State of Queensland under Creative Commons Attribution 4.0 International licence (CC BY4.0)

IK. There were varying experiences in that some preservice teachers experienced a profound shift in support for them and their knowledge work by moving to an EATSIPS school whilst others encountered supportive policy contexts but highly resistant supervising teachers. Rosie, who was a Torres Strait Islander primary preservice teacher, was delighted to finally have a placement at an EATSIPS school after having two previous placements, before the commencement of this project, in unsupportive environments:

> I was surprised that I passed [my last] prac, it was just hard work and stressful. I did everything the teacher asked me to do, I met all his expectations…was there on time, prepared my lessons, and remained in school after class… But he always used threatening and degrading language that I will fail…it was unprofessional. The other students on prac were having a great time, I did not feel that way; it was stressful.

Rosie moved to another school for her final practicum and internship placement (which was usual), and the school was chosen via combination of proximity to Rosie's home (with her parental responsibilities) and for being an "engaged" school on the EATSIPS and Field Experience office records. Rosie's experiences with Mrs. K at this school were entirely different:

> The teacher has been very good, she helps you, she allows you to teach—with the last prac it was just like this is what you do—you are teaching science tomorrow and these are your resources. They don't tell you what to do or give you information … with the first prac, I didn't enjoy it, I almost failed that one and the second one was rough as well. I have done two pracs…it was very different here…

Mrs. K was keen for Rosie to share her knowledge of Torres Strait Islander culture through her practicum teaching. The school already demonstrated reconciliatory commitment to Indigenous peoples via celebrations and events, inviting Rosie to take charge of one such event during her practicum. It was the willingness to be flexible with existing curriculum structures to carve out space and moments for Rosie to shine that made the difference for her at this school:

> A number of the children went home and spoke about the day…I had three parents come back and just said the children went home and they were just fascinated and there were passing on all of that information. It was a little spark in them as well. Because it's not often kids will go home and say 'mum we learned about fractions today'.

Conclusion

This chapter has deliberately positioned Indigenous preservice teachers as "future curriculum leaders" and "knowers", sharing their reflections on their curriculum decision-making and practices to embed Indigenous knowledges. These vignettes from a much larger study (c.f. McLaughlin, et al., 2014) have been selected to exemplify how the *practice contexts* (Kemmis & Grootenboer, 2008) of initial teacher education (ITE) can inform future professional work of all of the stakeholders implicated in embedding Indigenous knowledges across multiple contexts, as illustrated in Fig. 8.1.

In sharing our yarns with the preservice teachers and their supervising teachers, we contend that a deeper understanding can be achieved of the interrelated contexts and stakeholders in embedding IK. The policy content of embedding IK is supported by teacher professional standards that require even graduates to have some knowledge of Aboriginal and Torres Strait Islander histories and cultures. Vanessa's experience with embedding reveals that a policy imperative alone is not sufficient to ensure all teachers value these personal and professional knowledge commitments. From the experience of Danielle and Mary, we have demonstrated that ITE overall remains impoverished of opportunities for graduates to develop a deep knowledge of Aboriginal and Torres Strait Islander histories and cultures—with competing policy pressures to prioritize literacy and numeracy over IK—instead relying on post-ITE professional

learning. Mary's experiences with embedding as a supervising teacher shows that departmental commitment to offering staff post-compulsory learning opportunities *is* conducive to embedding IK and serves as a reminder that reliance on personal interest to further one's learning, such as in Amanda's case, is not enough. The development of relationships that support embedding IK across departments such as between faculties, field experience offices and student support units, meant that Indigenous preservice teachers like Rosie and Kassie, sources of immense cultural knowledge, were not constrained by rigid curriculum structures and fixed perceptions of "how to teach", as they encountered in their previous practice sites. Disrupting existing practice arrangements enabled new ones to be configured. This chapter has shown that concerted and sustained effort by stakeholders across multiple sites, and including the majority non-Indigenous people who work in these sites, to action their personal and professional commitment to embedding IK does result in powerful learning and emancipatory experiences for Indigenous preservice teachers, their colleagues and their students.

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Chapter 9
Indigenizing the Business Curriculum at an Australian University

Kerry Bodle and Levon Blue

Abstract This chapter is written as a dialog between the authors and commences with how Dr Kerry Bodle developed a new course engaging with First Peoples in various business contexts. Discussed is how First Peoples' perspectives were embedded into existing business courses in the university's Business School. The authors also discuss the importance of relationship building and how teaching philosophies underpin their beliefs about teaching First People's perspectives in higher education.

Background

This chapter outlines Dr Kerry Bodle's experience developing a First Peoples[1] curricula in a third-year undergraduate business course at an Australian university. Dr Levon Blue was invited by Kerry to deliver the inaugural guest lecture on financial literacy education practices in a First Nation community for the Engaging with First Peoples third-year business course. Levon was not aware of the course's origins or of Kerry's involvement in its development. Both Kerry and Levon are academics with First Nations heritage; Kerry is a First Nations person from Australia, and Levon is a First Nations person from Canada. They came to know each other when Levon was a PhD candidate and was hired to complete some research assistant work for Kerry. Levon and Kerry have continued working together and are now chief investigators on an Australia Research Council Discovery Indigenous grant, *Empowering First Peoples Business Owners Through Improved Financial Literacy*, with co-investigators Professors Lorelle Frazer, Scott Weaven and Mark Brimble. Kerry is employed by

[1]First Peoples, First Nations, Indigenous and Aboriginal may be used interchangeably in this chapter.

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Griffith University in the Business School and is the first Aboriginal accounting academic with a PhD to become a Certified Practising Accountant (CPA) in Australia. Levon has previously taught undergraduate preservice teachers in the School of Education and Professional Studies at Griffith University and now works in the Carumba Institute at Queensland University of Technology (QUT). In this role, Levon has co-taught capacity building workshops to Aboriginal and Torres Strait Islander postgraduates from many disciplines.

This chapter is written as a dialog between the authors and commences with how Kerry developed a new course engaging with First Peoples in various business contexts, how First Peoples' perspectives were embedded into existing business courses in the Business School. The authors also discuss the importance of relationship building and how teaching philosophies underpin their beliefs about teaching in higher education.

Embedding First Peoples' Perspectives in a New Course

Levon: Can you share how "Engaging with Aboriginal and Torres Strait Islander Peoples in Business Communities," the third-year undergraduate business course, came to be?

Kerry: I was invited by the Pro-Vice Chancellor of Business and the Dean of Learning and Teaching to design, develop and convene "Engaging with First Peoples in Business Communities." The university was looking for a course that was "mixed-mode" (on-campus and online) and delivered in intensive mode (two lectures and a workshop held twice a week over the four-week period).

It took two years to research the eight topics and gather all the relevant resources. During that time, I also took several courses on how to designing and developing courses that aligned with Griffith's learning and teaching principles. The course was finally delivered in a summer semester in 2015 using online pedagogy, based on the Quality Matters online course design framework and a storytelling teaching pedagogy (McDrury & Alteirio, 2001). I also incorporated my family's journey, combined with visual art and critical reflection, to form the pedagogical practices throughout this course.

Levon: How did you design the course?

Kerry: The learning and teaching decisions about curriculum development and resources were informed by the university's teaching and online frameworks to ensure the course's focus was acknowledging, valuing and promoting First Peoples' epistemologies (or *Aboriginal ways of knowing*). To focus on Aboriginal ways of knowing, it was necessary to undertake a process of *backward mapping:* I worked my way through the units from the final assessment piece back to the first lesson. Backward mapping (McTighe & Wiggins, 2010) involves three stages. The first stage identifies the desired results of the course—what should students know and be able to do on course completion. The second stage explores the criteria students could

be assessed against and the types of evidence they will need to demonstrate. Criteria refers to "… attributes or rules that are useful as levers for making judgments" (Sadler, 2005, p. 179) about students' work. The last stage of backward mapping involves the learning plan. This stage considers how the activities and lessons will lead to the desired outcomes (McTighe & Wiggins, 2010). Backward design begins by designing your assessment items and then determining the learning outcomes[2] for the course and learning activities.[3]

Levon: Can you explain how you embedded First Peoples' perspectives into a new course in the Business School?

Kerry: Embedding First Peoples' perspectives into the curriculum of a standalone course enabled me to design the course from the ground up. I had to create a story around "what should students know and be able to do" once they graduate. Then, I realigned the course's aims and objectives with a specific graduate employability attribute: cultural capability when working with First Peoples in Australia. Each of the learning outcomes were carefully designed to focus on reflecting First Peoples' history, knowledge and culture in a business context. I also had to constructively align (Biggs, 2014) the learning outcomes with the assessment and then develop each week's teaching and learning activities. The learning outcomes for students completing this course were as follows:

- critically analyze First Peoples' ways of knowing, being and doing in the context of history, culture and diversity in business communities;
- critically reflect on how one's own culture, life experiences and worldview as well as dominant cultural paradigms influence perceptions of, and interactions with First Peoples;
- identify ways to engage in culturally appropriate, safe and sensitive communication that facilitates trust and the building of respectful relationships and effective partnerships with First Peoples, individuals, organizations and communities in a business-related context;
- identify and list workplace protocols and cultural safety issues that need to be understood when working with First Peoples, organizations and communities;
- outline culturally appropriate protocols and practices required to ensure sustainable community engagement with First Peoples' business communities; and,
- differentiate between governance and leadership in First Peoples and non-First Peoples communities.

The assessments were designed authentically so that students would be capable of working with First Peoples from Australia within an organization, or work in remote communities after graduation. I decided that the course assessments would not follow the traditional ways of assessing students (for example, online quizzes, mid-term exams and a final exam or essay). Instead, students were required to complete digital

[2]There are three types of learning outcomes. The program learning outcomes, the course learning outcomes and the teaching session learning outcomes.

[3]The learning activities are aligned to the teaching session learning outcomes.

assessments. Students used symbols and graphics from the Web or manually drawn pictures to create electronic posters; they also used PebblePad and/or PowerPoint to create their portfolios and presentations (hereafter referred to as ePosters, ePortfolios and ePosters). This course had three pieces of assessment: ePoster (Assessment 1), ePortfolio (Assessment 2) and ePresentation (Assessment 3). The first assessment, the ePoster, required students to communicate concepts in a graphical format that were associated with one of the eight topics covered in this course. The topics included:

1. Course Introduction, and History of First Peoples in Australia;
2. Aboriginal and Torres Strait Islander Culture in Business Contexts;
3. Communication and Consultation: Ways of Being, and Ways to Communicate in Business Contexts;
4. Cultural Diversity: Benefits for Businesses;
5. Culture Awareness, Competency & Safety in the Workplace: Protocols and Practices;
6. Community Engagement: Protocols and Practices;
7. Community Leadership & Governance; and,
8. Government Policies & Practices.

One student designed an ePoster addressing topics 1 and 8, that illustrated their family's story about the Stolen Generations. The student used the left side of the ePoster to illustrate a point of view from the First Peoples' (Yapa) perspective and the right side to show the Western view. A legend was developed to explain what the symbols and colors on the ePoster meant. The student illustrated the story of an Aboriginal mother whose child was taken away. The written component that accompanied the ePoster provided some contextual history about Australian government policies between 1909 and 1969 regarding attempted assimilation of First Peoples children into the non-First Peoples mainstream culture. The student went on to explain how the generation of children who were removed from their Aboriginal families and placed in the care of others became known as the Stolen Generation.

The second course assessment involved writing a reflective journal. The students were assessed on their ability to apply core concepts of First Peoples' culture and context; reflect on their learning about cross-cultural issues in a business context; and take what they have learned that would enhance their employability skills.

The final assessment, an ePresentation, asked students to research one of the eight topics from the course and deliver a three to five minute video ePresentation. This assessment item required students to use the course aims and learning objectives as a guide. I was able to assess students on how they developed knowledge of the course content, how they conducted research and how they identified links between the understandings explored by the course and how these understandings could be applied after graduation. Students were encouraged to engage with the course material, reflecting on how these issues related to their own cultural knowledge, experiences, values and beliefs. At all times, students were reassured through constructive feedback and/or by asking questions so that they felt supported and that they understood the meaning of each issue. It was important for students to express

their ideas, as words can change their meaning when spoken and heard, so they were invited not to be afraid to hear the sound of their own voice or story.

I used the course curriculum as a way to stimulate students' awareness and interest in understanding how First Peoples are still impacted by their experiences from past government policies and practices. The curriculum, my pedagogical practices and the assessments were the catalysts to bringing about change. The digital assessments were designed to stimulate dialog, providing opportunities to students to reflect on their own cultural experiences, so that they could make sense of their understanding of First Peoples' perspectives in both a historical and a business context. I believe embedding First Peoples' perspectives is not just about adding stories or facts; it starts with self-reflection. The assignments were designed to engage students and enable critical reflection.

I designed a survey to investigate students' pre- and post-attitudes toward ePortfolios as a useful vehicle for facilitating critical reflection and learning. The students were asked questions in the survey based on their experience on the usability of ePortfolios, technical support and *effectiveness* in their learning (see Bodle, Malin, & Wynhoven, 2017). We found that more than 80% of students said that ePortfolios were useful vehicles for facilitating critical reflection, for compiling and demonstrating evidence of learning and skill development.

Levon: Thank you for sharing your insights about embedding First Peoples' perspectives into a new course. Can you share how you embedded First Peoples' perspectives into an existing course?

Embedding First Peoples' Perspectives into an Existing Course

Kerry: Embedding Aboriginal and Torres Strait Islander perspectives within an existing course begins with examining the learning outcomes to determine which ones can be "Indigenized." For example, a financial planning course includes the learning outcome: demonstrate a range of generic and behavioral skills required to be an effective professional. This learning outcome was selected to "Indigenize".

In this financial planning course, students were provided with a set of modules containing resources (First Peoples' videos, peer-review papers and other government documents), pertaining to history, communication, community engagement and government policies and practices. Students were instructed to work independently through the modules in their own time. Then, the convenor discusses cultural diversity when engaging with First Peoples in business as potential clients. The assessment instructs students to consider the cultural protocols and implications when providing financial advice, the communication protocols they would have to be aware of, and how they would address them.

When designing that assessment, I asked myself, "How can I design authentic assessment items that engage students in a meaningful way that develops a deep

understanding of First Peoples in Australia?" Norton (2008) described an authentic assessment as one that includes development of real work skills and active construction creative responses connected to skills. Developing a deep understanding was important because Angelo (2012) argues that when students can only pass assessments by demonstrating deep learning, the likelihood of plagiarism is reduced. I then considered the learning activities I could use that are authentic First Peoples resources, readings and videos relevant to each specific topic covered. This was an important step—considering what students want to learn rather than what an educator wants to teach ensures that appropriate learning activities are aligned with the course's learning outcomes (Norton, 2008). For the videos selected for students to watch I asked, "What videos could be included within this course that highlight the importance of First Peoples in this context?"

Levon: How did you work with the existing learning outcomes when embedding First Peoples' perspectives into an existing course?

Kerry: With any course you need to consider the program's learning outcome (PLO) that students will achieve an employability skill where they will be capable of working with First Peoples when they complete the course. The learning outcomes of the course must be adapted so that the learning activities and the assessments are aligned. Angelo (2012) asserts that "good teaching is inextricably intertwined with good curriculum design, which is about planning and aligning what to teach, how to teach and how to assess …" (p. 92). It is much like a brick wall … the bricks are representative of the curriculum design, and the mortar represents the teaching pedagogy; if you do not have strong mortar, it will collapse. One example where I assisted in embedding First Peoples' perspectives into an existing course was a first-year capstone tourism course: People and Places in the Service Industries (1005THS). The overall program learning outcome was to demonstrate an appreciation of the importance of First Peoples' culture and context. The learning outcomes for the course were:

- Explain socio-economic and environmental relationships between people, geographical features of "places" with the tourism and hospitality context;
- Apply concepts and theories to propose improvements to "real-life businesses" in the service industries;
- Analyze cultural diversity, identities, personalities, and visitor motivations and behavior in tourism and hospitality experiences; and,
- Evaluate how tourism and hospitality places are developed and managed to cater to diverse visitor markets.

The areas identified as being capable of being "Indigenized" using First Peoples' perspectives were:

- The importance First Peoples in Australia's "place" in the relationship between people and "Country";
- "Real-life businesses," which could include the businesses and tourism spots on Traditional Owners' lands such as North Stradbroke Island;
- Adding First Peoples in Australia's culture to the "cultural diversity"; and
- Providing information on community engagement protocols for First Peoples.

The existing assessment was redesigned so that students could compare and contrast traditional Western perspectives and First Peoples' perspectives when conducting field research. Students then had to prepare a reflective critical analysis to demonstrate their active engagement and participation in the field trip.

Teaching philosophies and relationship building in higher education

Levon: I would like to talk with you about the relationships you developed with the students. When I was invited to give a guest lecture, I noticed that you formed strong relationships with your students and the students wanted to continue learning outside the lectures. Can you explain how you formed relationships with your students? What is your teaching philosophy and how does your teaching philosophy guide your practice as a university educator?

Kerry: My teaching philosophy is based on storytelling and involves sharing stories (often referred to as yarning) about how the past government policies and practices impacted my grandmother, my mother and myself. I share that my grandmother (Moola Conbar) was made a ward of the state at the age of two. She was assigned on a work permit by the Aboriginal Protector to a family in outback Queensland. When my grandmother fell pregnant with my mother to a white man (who denied paternity), she was subsequently sent to Cherbourg to give birth to my mother. When my mother was three, she was taken as part of the Stolen Generation. I tell students how these policies have affected me and my family. I was raised in a Salvation Army home from the age of five to fifteen and was an unmarried mother at the age of sixteen. I struggled with two cultural identities as I went through school and eventually my academic working life. By telling students my story, I engaged them in the course content. The cultural safety I provided to students allows them to relate to their own cultural experiences, fostering relationships. I also believe the foundation of all First Peoples is connection to country, family and relationships.

The course I developed evolved by using innovative, non-traditional teaching pedagogy and learning styles, shifting the focus from the teacher (and a top-down structure) to one of student participation, reflection and active learning. Martin's (2014) handbook on the role of Aboriginal Knowledges in twenty-first Century Higher Education describes four approaches to curricularizing Aboriginal Knowledges: the transactional, interactional, relational and transformational approaches. My approach to embedding Indigenous perspectives in business courses is best

described as the transactional approach. Martin (2014) described the transactional approach as occurring only at the subject level, where disciplinary knowledge and professional knowledge dominate, followed by curriculum knowledge. This means that concepts are drawn from the dominant discipline area, framing what is possible. This results in incorporating Aboriginal perspectives as examples of a topic or issue or as content designed to address professional knowledge requirements (for program accreditation), similar to the Teacher Professional Standards discussed in Chap. 8.

Although the transactional model is not promoted by Martin (2014) as the preferred approach, it is the best approach possible without structural transformation from within the institution. Other chapters in this book have highlighted similar issues with changing the institution: this has not yet been achieved. However, in the course I designed, students were encouraged to ask questions, seek answers and share their own cultural knowledge, stories and opinions to connect to the course content and learning outcomes. As many students in the course were from different cultural backgrounds, sharing a bit about their backgrounds helped to develop a comfortable environment that encouraged reflection in class and during the online collaborative sessions. The importance of following a reflect-inquire-reflect learning approach was used in White, Anderson, Gower, Byrne, Bennet, Quin, and Darling (2019) Engaging and Partnering with Aboriginal and Torres Strait Islander Parents and Caregivers project. Although their project was not about higher education, the approach described how learners moved through the reflect-inquire-reflect learning approach to seek answers and may be applicable in higher education.

Sharing stories enabled students to understand and relate to all aspects of the course content. Through the ePortfolio/Reflective journal assessment, the students were able to apply core concepts of Aboriginal and Torres Strait Islander society (knowledges, traditions and culture). They could also highlight the application of appropriate use of protocols when engaging with Aboriginal and Torres Strait Islander peoples and their businesses and wider communities. This allowed students to learn independently through the use of narrative inquiry, reflection and critical analysis. One student told me how much they were enjoying the class and the stories I was sharing. The student also mentioned how the stories shared motivated them to research and watch videos about Aboriginal culture.

Levon: I think we have many common threads in our teaching philosophies. My teaching philosophy is underpinned by four essential elements: rapport, criticality, care and collaboration.

Kerry: How do you apply that in your teaching practice?

Levon: To build rapport with the postgraduate students, we invite a traditional owner (and colleague) of the land to do a "Welcome to Country." They emphasize that on these lands, we will work together in a spirit of generosity, with mutual respect and will support each other. The main motivation is to build rapport with students, to try to establish an environment where students feel comfortable. I also share a bit about my background and then ask students to share a few things about themselves.

With undergraduates, I share my own stories to help shift the deficit views some preservice teachers hold about diversity and disadvantage. My mum was a teenager when she had me, and my dad is Aboriginal. I lived most of my childhood in a

low-income household with two loving parents. Encouraging preservice teachers to understand their own backgrounds and socio-cultural contexts, including privilege, may also enable more respectful relationship in the classroom (Frankenstein, 1990). To establish rapport with undergraduates, I usually ask students to share their name, their favorite thing and their favorite song. I then keep a list of the students' favorite songs and before each tutorial begins, I play some of their music. To develop collaborative learning approaches, I use active learning techniques such as inquiry-based learning. This student-centered approach to learning involves working in small groups on real-world problems in a positive and inclusive learning environment.

Criticality is fostered by the type of content, questions and assumptions that are challenged in discussions during our time spent together. I realized I needed to offer two different styles of being together, as I sometimes deliver lectures followed by a tutorial. In the large lecture theaters, if it was difficult to have much interaction, until I introduced digital tools such as Kahoots (online interactive quiz). I was often told by undergraduates they came to the early morning lecture just for the Kahoot. Undergraduates wanted time to get to know each other during tutorials, so I include small group and paired activities. In the postgraduate workshops, which were often over multiple days, postgraduates found their own time at lunch, during breaks and in the evening to develop relationships and network.

My teaching philosophies are also informed by my research (Blue, 2016), in particular, the importance of finding out the needs of students and understanding the importance of context. My research interests shape my teaching practice. I believe that preservice teachers need to understand the importance of caring for their students. Being cared for and caring for others is essential for adequate academic achievement, according to Noddings (1995). I tend to connect care to having high expectations in my students' ability. Many students will tell me that they are not smart enough, and I remind them of the research by Dweck (2006) on mindsets and how, with effort, anyone can be "smart" enough. My students get to hear and understand the power of "yet," a term Haimovitz, Kenthirarajah, Walton and Dweck (2014) refer to when a student has "not yet" acquired certain knowledge and/or skills. These moments, when a student questions their ability to succeed, keep me interested in teaching. As they allow me to demonstrate that I care and will support their learning so that they can understand the content they are grappling with.

Kerry: I believe you get the best from students when they feel they are being heard and are "culturally safe" in the classroom including students from overseas.

In my experience, students with from overseas who speak English as a second language usually do not participate in open class discussions. This could possibly be due to cultural differences and a lack of confidence in speaking English in the classroom. By providing a safe teaching environment, I make students feel more comfortable in vocalizing their own experiences to demonstrate the similarities and differences to First Peoples' issues and perspectives.

Levon: As an educator, I feel it is important to foster a positive environment so that students want to attend and feel they belong. This belief is connected to my concept of teaching, which is student-centered and influenced by positive pedagogies—the practices educators use to develop individualized learning goals with their

students "that target the development of positive cognitions, emotions and experiences" (O'Brien & Blue, 2017, p. 1). With student-centered activities, it becomes easy to foster student's positive learning identities, providing them with opportunities to experience success and reinforcing that it is okay to make mistakes in the time we have together.

I also support my students outside of classroom hours, as Chickering and Gamson (1987) state that good teaching practices include students being supported outside of the class time by approachable, interested educators. My students have continually told me how supported they feel by my prompt replies to their emails. Being available, interested and aware of what my students are facing fosters "rapport" (Rowan & Grootenboer, 2017). Although rapport is classed as a relationship-centered pedagogy, I would argue it is also a student-centered approach to learning.

My personal philosophy aligns with student-centered approaches, including "teaching as supporting student learning" and "teaching as an activity aimed at changing students' conceptions or understanding" (Samuelowicz & Bain, 1992, p. 100). As a critically reflective educator, I evaluate my teaching through the four lenses Brookfield (2005) identified. These include understanding what the literature says about effective teaching, asking my colleagues about their effective experiences, looking my students in the eye and performing an autobiographical account of my teaching experiences.

Kerry: As educators in higher education we need to work collaboratively with our colleagues by embracing First Peoples culture and peoples, not from a deficit model of thinking, but by recognising First Peoples as resilient, innovative and for their entrepreneurial culture.

Levon: Bringing about change and transforming education practices that stem from a deficit perspective is something I have had experience doing. What I noticed is that when you review generic content and think about its relevance in a First Peoples' context (e.g., the community I am a member of), the need to bring in First Peoples' perspectives becomes obvious. What I mean by that is, teaching financial literacy education on a First Nation Canadian reserve. As discussed in Chap. 2, needs to consider the life experiences of community members. What are the options for employment? What are the options for getting loans? Why is the reserve so isolated? What has happened in history that continues to contribute to high unemployment and poverty rates for First Nations people? How does the Canadian Indian Act[4], including the certificate of possession of land, constrain First Nations people ability to own land? I guess what I am getting at is the need to teach without doing harm, as harm may be unintentionally done when the context is not fully understood.

[4]The Indian Act was enacted in 1876 to control Aboriginal people and communities. More information can be found at https://www.cbc.ca/news/canada/background-the-indian-act-1.1056988

Concluding Comment

This chapter described Dr. Kerry Bodle's experience developing a First Peoples curricula in a third-year undergraduate business course at an Australian university. The focus of the chapter was on the business course titled "Engaging with First Peoples in Business Communities," to demonstrate how it came to be developed and implemented and how the students received lessons on history and culture from a business perspective. Dr Bodle also shared how she approached Indigenizing the business curriculum in higher education by embedding First Peoples' perspectives into an existing course. However, more research is required to guide practices about embedding First Peoples' perspectives in higher education for both staff and students. University-wide support is also required to enable transformational changes in higher education practices to ensure that embedding First Peoples' perspectives becomes a priority for all.

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Chapter 10
Indigenizing Education: Lessons Learned, Pathways Forward

Alison Sammel, Susan Whatman, and Levon Blue

Abstract The final chapter specifically explores how the ten themes that emerged from Chap. 1 have implications for the teaching and learning that occurs within our communities, schools and universities. The complexities of these themes, and how they are interwoven throughout the previous chapters, are illustrated. Advice and recommendations are provided for how educational practices can recognize and respect the intellectual and cultural traditions of Indigenous peoples within, and between, Australia and Canada.

Our primary goal for writing this book has been to bring together First Nations' educators and non-Indigenous educators in Australia and Canada to share their research in a dialogic, practitioner-focused way about what it means to Indigenize education in whichever settings that educational practices occur. In doing so, each author has taken a stand in seeking to imagine and transform educational systems and practices to those that support and celebrate the knowledges and perspectives of Indigenous peoples.

Each chapter has demonstrated what it might mean to honor and respect Indigenous histories and cultures, and/or to embed Indigenous knowledges and perspectives within curriculum, pedagogy and assessment. It is evident from these research accounts across Australia and Canada that the colonial understandings of education and the corresponding foundations of educational systems function to maintain particular kinds of cultural and historical contexts that privilege White systems of knowing. Education is the process by which the dominant group in society instructs its citizens in the ways, customs and understandings that it deems are of fundamental importance, and in doing so, establishes and maintains the White hegemony of education that has failed to serve the needs and interests of Indigenous peoples. Each chapter in this book has illustrated how researchers and educators have committed themselves to disrupting the colonial narrative of education.

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This chapter focuses on revisiting how the contributors have illustrated and responded to the ten themes raised in chapter one. In doing so, they offer site-specific, community-led insights into how other educators might also take up what Tripcony (2004) called "everybody's business" in Indigenizing education.

Theme One: The Legacy of Colonization

The first theme was centered around the overarching context for Indigenizing, that both Australia and Canada are still embedded in the legacy of colonization. Our schools, curriculum (decision making, content, processes, relationships) and teaching practices are built upon Eurocentric beliefs and attitudes with the specific goal to assimilate all students into a British Eurocentric view of the world. Eurocentric beliefs and attitudes represent a strong theme in many chapters of this book. With a focus on university systems, the first part of chapter seven outlines settler colonialism and how formal education systems, specifically tertiary educational systems, are underpinned by colonial ideologies. It also endorses Tuck, McKenzie, and McCoy (2014) position that "when we theorize settler colonialism, we must attend to it as both an ongoing and incomplete project, with internal contradictions, cracks and fissures through which Indigenous life and knowledge have persisted and thrived despite settlement" (p. 8). While Western universities have been built upon colonial assimilation agendas, chapters seven, eight and nine provided case studies of these "cracks for thriving," spaces where Indigenous ideologies and perspectives were incorporated in a particular site with supportive arrangements (Kemmis et al., 2014) to transform the curricula, practices and resources in use.

With a focus on formal primary and secondary education, Racette, a Metis Elder, discusses the legacy of colonialism in Chap. 5 by talking about his life and educational experiences growing up in Saskatchewan. He explains how Métis content was never taught in school, adding that "if this perspective of Riel and Métis history were taught in schools, I believe more Métis students would have stayed in school. I believe that if students were educated about Métis history and their struggle against unfair government infrastructure and policies, then students would have understood and fought to maintain the rights that Riel gave his life for." This legacy of colonialism can also be found in Chap. 6 which explores the role that reductionist science has played in generating and supporting colonial ideologies that view Western science as superior to other ideologies. Sammel clearly dissects how science education perpetuates this colonial agenda with the idea of indoctrinating students into viewing and understanding the world through a myopic lens of Western science which ideologically positions humans as "exceptional in regard to other species, and above or separate from things classified as "nature." This dualistic thinking of humans as distinct from nature still justifies the exploitation of those classified as objects (nature), and the dismissal of cultures who were perceived as being closer to animals and nature. Legacies of these beliefs still circulate in the collective consciousness, policies and infrastructures of contemporary colonial cultures such as Australia and

Canada." Sammel impels educators to reform the reductionist thinking of Western science, to become more relational in its perspective. This chapter makes the case for how Indigenous Knowledge Systems represent an opportunity for science and science education to expand their narrow understandings of what counts as knowledge and to offer a fuller understanding of the human experience in relationship with all of nature.

In Chap. 8, Whatman, McLaughlin and Hart illustrated that the right policy conditions can open up cracks for reform in university curricula and practicum arrangements. In explaining the model for supporting the *ongoing* process of embedding Indigenous knowledges in teaching practice, stakeholders who are implicated in firstly recognizing their role to do this work are secondly provided with micro-level analyses of how hegemonic practices prevail, but importantly, how they can be changed. Even before practices are considered, Indigenizing education requires explaining why certain taken-for-granted assumptions and/or understandings are not so. For example, in Chap. 2, Blue discussed the massive income disparity gap between Indigenous and non-Indigenous people. She points to previous research that revealed that the gap in incomes will not be resolved by through education and higher paying jobs. Instead funding is required to address colonial legacies. The deficit approach to conventional financial literacy education is discussed to bring attention to why achieving financial well-being may be more difficult for Indigenous people to achieve.

Theme Two: Disrupting the Privileging of White (Western) Epistemologies, Ontologies and Axiologies

The second theme recognized that schools as formal sites of educational practices continue to be designed and managed by people who privilege Western epistemologies (ways of knowing), ontologies (ways of being) and axiologies (ways of doing). Indigenous ways of knowing, being and doing are seen to be irrelevant to the larger project of societal education, or only of relevance to Indigenous peoples. There is a lack of professional development and administrative structures valuing the important contribution that Indigenous perspectives can make to Australia and Canada. Tailby, Whatman and Sammel critiqued in Chap. 4 an educational aspiration program offered only to Indigenous primary (or elementary) students, which on the surface would seem to do little to disrupt the perceived "irrelevance" of Indigenous knowledges to non-Indigenous students. However, as they depict in the narrative conversation and recount of the content and impact of the *iDream* challenge projects, Indigenous students themselves demonstrated the value and educational worth of their knowledges by sharing their work with their wider school communities in innovative ways. Blue in Chap. 2 offered a critique of the privileging of Western ways of doing things in community education settings by advocating for a needs-based approach to financial literacy education. Blue also acknowledges that there is a need to understand

capitalist ways of financial reporting used First Nation communities to challenge oppressive financial practices occurring inside and outside communities.

Chapter 7 by Sammel and Segura specifically critiqued the privileging of Western epistemologies in University settings, stating "the cultural invisibility of settler colonialism has become normalized in hegemonic infrastructures such as Western educational systems." They named typical ways in which a lack of Indigenous perspectives and knowledges in formal education systems are manifested, from the cultural backgrounds and knowledge sets of educational administrators and faculty members (the hiring of White faculty) to the production of educational materials and resources (reproducing White knowledge bases). Their case study of the University of Regina in Saskatchewan, Canada revealed a policy rhetoric of campus Indigenization, but also institutional commitment that extended to programs and curricula. This university recognized the need for change, a critical ingredient for Indigenization also discussed in Chap. 8, illustrating how they approached Indigenization and Internationalization *together* by concurrent strategic planning and leadership, program development and international engagement. Specifically, it highlighted examples and lessons learned from programs developed by the University of Regina and its Mexican university partners. However, this chapter also illustrated that even though the strategic direction of the university provided support for small Internationalization programs, they asked to what degree had there been permanent structural change or a change in the status quo of the academic culture? This chapter concluded with the uneasy realization that even policy and curriculum commitment may not produce lasting change.

The programs in this case study were successful in their outcomes of providing spaces where different Indigenous and non-Indigenous communities could come together in collaboration and dialog. These programs could be classified as a form of "reconciliation Indigenization" (Gaudry & Lorenz, 2018) where universities work to reconcile Indigenous ideologies and perspectives with Western ideologies and perspectives in relationship with local Indigenous communities. Even though Chap. 7 focused on the apparent success of these specific Indigenization-Internationalization programs, it is important to put these programs into a larger university wide context. Gaudry and Lorenz (2018) cautioned that universities tend to create these reconciliation spaces in only a handful of programs that are insignificant to the larger workings of the academy. This ties in with the second theme of this book that discussing how Indigenous knowledges and perspectives may ultimately been seen as irrelevant to the larger agendas of hegemonic education. This is certainly the case for these Internationalization programs. While these International programs may offer an example of implementation, it might be argued that fundamental changes throughout the university have yet to occur. If Indigenization is to be a process where universities transformed their existing academy to equitably including Indigenous ideologies, perspectives, voices, scholars and students, then these international programs might represent false hope in achieving this outcome. What these programs do highlight is that the University of Regina has made one positive step forward toward the practice of reconciliation Indigenization. Chapter 7 cautions that institutions who progress down this road must be vigilant that programs such as these ones do not

become "the solution" or become "the answer" to the institution's responsibility to Indigenization—but rather one step along a pathway toward a more comprehensive agenda.

Chapter 5 speaks to the need for professional development in understanding the important contribution that Indigenous perspectives can make within society. Focusing on quality professional development around Treaty education (what it is, why it is important and examples of what it looks like), Calvin Racette and his Indigenous colleagues developed a nationally recognized Treaty education resource. This project emerged from their experience that knowledge of Treaties is lacking and not widely valued in formal education systems. They believed there was a lack of professional development and resources to support teachers around understanding the contemporary reality and applicability of Treaties in Canada. With the current Canadian emphasis on reconciliation, schools are being asked to educate around, Treaties but there was little support to support teachers in this endeavor. Chapter 5 demonstrated the range and scope of resourcing required to support an informed approach to reconciliation via two different project examples of Treaty education in both primary and secondary schools.

Theme Three: Speaking Back to Racist, Colonial Representations of Indigeneity

The third theme identified in Chapter 1 posits that Indigenizing means understanding and speaking back to colonial representations of Indigeneity which have been racist, deficit-oriented and under-valued. Means by which such speaking back can occur can be through the decolonization of language and thinking, and the foregrounding of experiences and worldviews of Indigenous peoples, so that Indigenous ideologies and perspectives are honored and respected in formal education for *all* students.

In Chap. 5, Racette explained how important it is for education to speak back to colonial portrayals of Indigenous ideologies and knowledges as less than Western ideologies and knowledges. He highlights how educators need to understand and respect that Indigenous perspectives are different from Western and Indigenous knowledge bases, revealing how the same phenomenon can be understood through different lenses. For example, he says:

> I think the term 'Indigenizing education' has different meanings to different people. From an education perspective, Indigenizing education is often seen as taking Indigenous content and teaching it through a Western lens to be evaluated in a Western reporting system. This is a common approach to the school systems and I believe that it is a wrong approach.

In this chapter, Racette extended our understanding of Indigenous Knowledge Systems (IKS), including the diversity across communities and the function of Indigenous perspectives. This discussion highlighted how each Indigenous community has developed and holds its own IKS and the integrity and complexity of those systems. What can be understood by someone not from that community are perspectives of

those knowledges. Indigenous perspectives are what may be taught in spaces outside of the Indigenous community. This idea is also illustrated in Chap. 6, where the same can be said of Western science. A scientist working in their specific field might hold an understanding of the complexity of the knowledge system, but someone not working in this space might only understand certain perspectives about the concept in question. They may never really understand the contextual or holistic understanding of that knowledge. However, people outside of that community can learn Indigenous perspectives that relate to the world around them. For example, Racette explains that "for Indigenous people, every concept that exists in the education system for Western society has a parallel teaching in the Indigenous world. Mathematics, Science, History, Health, Language, Literature are subjects that are common in school. The Indigenous peoples of the world have all these within their teachings. Indigenizing means to learn these concepts from the Indigenous people's viewpoint. Without these Indigenous perspectives being included in formal education, it sends a message that Indigenous content and history have less value."

To explore how Indigenous ideologies and perspectives can be honored and respected within formal education, Sammel in Chap. 6 discussed an example of a contemporary Acknowledgement of Country. She explained that "an Acknowledgement of Country is a practice where the Traditional custodians of the land, and their long and continuing relationship with the land, are recognized by the speaker (or in this case, the teacher). It can be done by someone who is not an Indigenous Person of that specific land and usually it is undertaken at the beginning of important events or gatherings. The example acknowledgement drawn from Sammel's own university involves saying the following lines: *I would like to acknowledge that we are meeting on the traditional lands of the (name) people, and I pay my respects to Elders both past and present."* She noted that:

> an Acknowledgement of Country is a process about agreeing to share Country in the ways the traditional owners advocate and practice…it illustrates what showing respect for Country looks like in that context. It is not a one-off statement made at the start of a school year, but an agreement that a person will learn (and in the case of educators—facilitate the sharing of this knowledge) how to abide by and respect the values of that Country.

Chapter 6 thus illustrates the power of what Sammel did in seeking to honor Indigenous ideologies in a genuine way via Acknowledge of Country in the teaching of science education to preservice teachers.

More ways of speaking back to colonial representations were depicted in Chap. 7 in their critique of the collaboration between the University of Regina in Canada and the Intercultural University of the State of Mexico (*Universidad Intercultural del Estado de México*). This collaboration promoted the mobility of students at the University of Regina and Indigenous students from Mexico to exchange their culture and traditions in short-term, non-credit programs. Topics included in these programs centered on understanding post-Confederation era and treaty signing, the Indian Act, the Canadian Indian residential school system, First Nations protocols and methodologies, and current Indigenous issues in Canada. They offered local experiences where students undertook field trips to a First Nations community formerly known as an

Indian reserve, a former Indian residential school, and a powwow (a formal meeting and celebration where First Nations people gather together from across the country). These programs encouraged Indigenous participants to interrogate colonial misrepresentations of themselves and each other through experiential exchange, enabling better understanding of the experiences, standpoints, perspectives and worldviews of Indigenous peoples across the continents.

In Chap. 3, Wasyliw and Schaefer's engagement with Philip and Amelia from the very beginning of the inquiry as Kahnawà:ke knowledge holders from Kanien'keha:ka (Mohawk) community near Montreal enabled the process of speaking back to shape the nature of Wasyliw's PhD research investigation as it unfolded. He noted:

> Philip and Amelia's stories began to broaden my own stories of how we can know the world. This process shaped me in a way that allowed me to appreciate their stories, but also realize how different their stories are than my own. This was an important aspect of the inquiry as contextualizing their stories and ceremonies allowed them to become "humanized rather than exoticized" (Grimes 2017, p. 8).

The active participatory role of knowledge holders in the research design and action disrupted and enriched the non-Indigenous researchers' onto-epistemological beliefs, opening up the possibilities of what health education can mean beyond Eurocentric definitions and challenging prevalent, deficit Western representations of Indigenous peoples as "unhealthy."

Theme Four: Indigenizing Education Involves Tension and Agency

The fourth theme underpinning Indigenizing education has recognized that in order to incorporate the epistemologies, ontologies and axiologies of Indigenous peoples into educational systems which have typically privileged non-Indigenous ways, tensions are inevitable. It is timely here to return to Nakata's (2007) Indigenous standpoint and cultural interface theory where he argues that tension between hegemonic systems is necessary for Indigenous agency to flourish. Whatman, McLaughlin and Hart in Chap. 8 argued that while a lack of (mostly White) teachers' personal knowledge of Indigenous histories and cultures in Australian has been identified as a *constraint* upon embedding Indigenous knowledges in the Australian curriculum, with certain conditions and arrangements, it is also an *enabler* for those who possess the knowledge. In this chapter, the possessors of Indigenous knowledges were preservice teachers who needed to demonstrate their confidence and competence in teaching in practicum situations. In contexts where White hegemonic knowledges prevailed, the students often found themselves marginalized by White supervisors as non-knowers or "struggling" beginning teachers. The political insertion of the imperative to embed Indigenous perspectives in curriculum and teaching provided by state policy such as EATSIPS (2011) and the cross curriculum

priorities of the Australian Curriculum (ACARA, n.d.), along with the strengths-based premise of the overarching research project, created moments of liminality (Whatman, Quennerstedt, & McLaughlin 2017) enabling previously "struggling" preservice teachers to see themselves and act as knowers. The process model for embedding IK that was illustrated in chapter eight clearly identified how and where preservice teachers and experienced teachers, and supporting agents in teacher education, field experience and school communities, could approach their task via close attention to their relationality and practices in each site.

Racette, in Chap. 5, also identified the tensions and agency that can arise when Indigenizing education. He noted "it is a place where you will find all sorts of challenges. But once you achieve a level of success, you can never go back. Teachers enter the profession to be the best they can be, they want to make a difference. In this area, the struggle is real, and it has many turbulent times." He also noted that new forms of community, student and teacher agency are enabled by the addition of Indigenous content into the curriculum. He pointed out that "it makes it more interesting and provides a link from the historic to the contemporary. The rewards are not hard to come by if you work at it. You get rewards when you see Indigenous and non-Indigenous children very engaged in the content and interested in what you are teaching. It is wonderful when you experience the light bulb moment when they start to make connections. You get a great deal of internal gratification because you know that you are making a difference." Racette reiterated that Indigenous knowledges in education are for *everybody:* "all people need to understand what happened in order to heal and move forward."

Blue, in Chap. 2, argues that agency in a financial context is an achievable outcome of financial literacy education. She describes a research project in a First Nation community that focused on community members being comfortable asking questions about finances relating to their own finances and the Community's finances.

Theme Five: Indigenizing Education Can Take Multiple Forms

The fifth theme identified in Chap. 1 centered on what forms that Indigenizing education can take. The subsequent chapters have demonstrated that this can include promoting and privileging Indigenous cultures, worldviews, content, processes and ways of being with self and others in social, physical, spiritual and cognitive environments. In Chap. 3, Wasyliw and Schaefer's narrative inquiry with Kahnawà:ke knowledge holders Philip and Amelia, demonstrated how Indigenous ways of knowing can be theoretically and practically embedded in higher education within a physical health education teacher education (PHETE) program. By situating themselves as teacher-educators alongside knowledge holders Philip and Amelia, with decision-making authority on what teachers should learn about physical education and health (PHE), they as non-Indigenous educators came to better understand the deeply contextual, cultural, familial, political, geographical and complex nature of Haudenosaunee ways

of knowing about physical and health education and what this knowledge offers to PHE as a discipline and PHETE as a professional learning site.

These multiple forms can be employed to assert and defend Aboriginal rights and treaties, offering a fuller, truthful telling of history. In Chap. 5, Racette described the book series he created called *Under One Sun,* published by Nelson Education, aimed at kindergarten to grade eight, in order to support teachers in feeling comfortable and confident embedding Indigenous perspectives in their classrooms. He explained, with illustrated examples, how the book series enables Indigenous perspectives of Canada's history to be taught through the exploration of Treaties. The book series was created out of the standpoint that "it is important for Canadian teachers to understand Treaties as negotiated between the British Crown and the First Nations communities" rather than a claim made by First Nations communities alone. All of these treaties had clauses that covered land, rights, education, health and behavior and are legal documents that require the descendants of *both* historical signatories to honor them. Racette reminded us that the clauses in treaties provide a way forward in which Settlers and First Nations communities can share a common future. Rather than being historical relics, or documents that only First Nations peoples need to know, treaties should be regarded as living, "forever existing" agreements that are designed to enable a prosperous life for all Canadians.

The Internationalization programs discussed in Chap. 7 were specifically developed with local Indigenous communities to promote their cultures, worldviews, content, processes and ways of being. Key to these communities was promoting an understanding of Treaties, Treaty rights and the importance of ceremonies. One of the international exchange participants stated:

> a thing that I remember a lot is that they gave us a guided visit to a building (within the University) that had a ceremonial center where First Nations perform ceremonies and invoke their spirits. A place where the material and immaterial world made a binomial of culture and beliefs creating an environment of deep respect and pride. The First Nations peoples expressed how proud they felt of their roots. Being able to partake in this activity made it a very enriching experience to me.

Further illustrating what it means to Indigenize education in specific contexts, Chapt. 6 advocates that both science and science education need to value local Indigenous ideologies and perspectives and be open to learning and incorporating these ideologies if we are to find examples of living ecologically sustainable lifestyles.

In Chap. 9, Bodle and Blue narratively recounted the process of backward mapping that Bodle undertook to design the assessments, learning outcomes and activities for a newly designed course. The importance of ensuring that First Peoples histories, perspectives and cultures in a business context were explicit throughout the course met that assessment that demonstrated deep learning were designed. Bodle also described the deliberate decisions she made when choosing the learning activities and resources to ensure the coherence and sustainability of the innovation in years to come.

Theme Six: Resisting Token Approaches to Indigenizing Education

The sixth theme recognizes that Indigenizing education is sometimes understood and realized in practice as trying to "fit" IKS into existing Western Knowledge Systems (WKS). As Blair and colleagues argued in Chap. 1, such token approaches can be seen through superficial recognition of holidays, or the "sprinkling" of Indigenous perspectives to spice up the curriculum through tokenistic, superficial and decontextualized activities or experiences. Racette in Chap. 3 noted "Indigenizing education is often seen as taking Indigenous content and teaching it through a Western lens to be evaluated in a Western reporting system. This is a common approach to the school systems, and I believe that it is a wrong approach."

The case study in Chap. 6 revealed how such tokenism can occur, with examples of how preservice teacher participants thought Indigenous perspectives could be reduced down to isolated, chunked information or stories, sourced from anywhere (particularly online) and arbitrarily placed alongside the teaching and learning of chunked, Western science facts. Indigenizing education was viewed as "additive" by these preservice teachers: the addition of Indigenous facts or stories to untroubled Western science concepts as suggested by the Australian curriculum. There was little acknowledgement that to Indigenize education, the teaching and learning of science itself would need to be re-imagined and re-structured. Chapter 6 provided a table outlining four different approaches to including Indigenous perspectives and IKS in the teaching and learning of science: the contributions, additive, transformative and the community engagement approach (Table 6.1). These four approaches offer one way to map the terrain of the different mindsets, perspectives, actions and levels of community support and engagement associated with embedding Indigenous perspectives in curricula. Similarly, in Chap. 3, Wasyliw and Schaefer, drawing on Gaudry and Lorenz's framework, illustrated that PHETE in Canadian universities mostly represented "inclusion and reconciliation," rather than decolonizing. They argued that the perspectives of knowledge holders are expected to "fit" in existing PHETE curriculum and pedagogy rather than transform it. Each of these chapters exemplify that embedding Indigenous ideologies or perspectives requires a major shift in teacher consciousness (and practices in teacher education) to understand and respect the differences that underpin Western and Indigenous knowledge bases. Indigenizing education acknowledges IKS in their own right and understands the ideological differences between WKS and IKS.

Another way of looking at this theme was demonstrated in Chap. 2 by Blue. She demonstrates that sometimes, all that is required to Indigenize an activity is to add Indigenous perspectives. To apply an Indigenous perspective to financial literacy education, the needs of the participants were ascertained, and activities were developed that connected to local policies and procedures. Blue's project provided an example of the importance of understanding the site/context and connecting activities to what is happening in that site rather than asssuming the needs of the participants.

Theme Seven: Resist Appropriating Indigenous Knowledges in Western Knowledges

The seventh theme focused our attention on the important distinction to be maintained in the project of Indigenizing education. Whilst we argue that embedding Indigenous perspectives and knowledges should be comprehensive and the concern of every educator, such knowledges do not become part of Western ideology nor essentialized into some form of pan-Aboriginality (such as a "quintessential" Indigenous curriculum). Educators need to acknowledge IKS as separate and distinct forms of viewing the world which are grounded in the country (traditional lands) in which they originate. They need to acknowledge the diversity and uniqueness of Indigenous peoples, histories and expertise. Educators must establish personal and professional connectedness and relatedness with Indigenous peoples in their local context and collaborate on the knowledges that will become part of the educational experience. This theme is tightly linked to many of the previous themes and so discussion about acknowledging the distinctiveness and importance of local Indigenous knowledges can be found in many chapters. As discussed earlier, Table 6.1 in Chap. 6 revealed how teachers typically align with the first two approaches of "contributions" and "additive"—a more superficial or essentialized understanding of embedding which leads to a lack of appreciation of the differentiation between each knowledge systems. Educators who work toward the last two approaches—transformative and community engaged—understand the distinctiveness of local knowledges and the importance of working with local Indigenous communities to embed local perspectives. This understanding can also be found in Chap. 7 where the process of Indigenizing education through Internationalization programs at the University of Regina centered on acknowledging the diversity and uniqueness of First Nations Canadians, their histories and expertise, from the lands near and upon which the university stands. In this case study, learning experiences were developed that explored true histories and openly discussed the mutual impact of contact and colonization and were taught by members of the different local Indigenous communities.

Theme Eight: Indigenous Framings of Nature and Humanity

The eighth theme takes a larger paradigm shift, acknowledging the imperative to move from the colonial dysfunctional, self-destructive and oppressive relationship with nature and the world's peoples, to one that values the important contribution that Indigenous perspectives and knowledges can make to humanity at this time. This requires understanding and acting in ways underpinned by relationality, interaction and reciprocity and our embeddedness in our physical, social, cognitive and spiritual environments. The importance of this theme was grounded in the Foreword by Pearl Duncan, setting the tone for the entire book, and returned to time and again across the chapters. It was central to Sammel's argument in Chap. 6 as it explored shifting

the conversations required within science education to shift from tokenistic additives to focus on relationships: those deep interconnections and relationality that link everything on the planet. Like common themes across Indigenous ideologies, this relational perspective highlights that humans are just one part of the biological fabric of life on Earth and acknowledges humans are incapable of existence independent of other entities. This chapter's central focus was that Western science needs to transcend reductionist thinking and be more relational in its enactment. As such, WKS still has much to learn from local IKS. Chapter 5 also explored how Métis communities, and arguably, other Indigenous communities, believe it is an essential pedagogical process to communicate how everything relates to each other.

In Chap. 4, a case study was recounted in which students were tasked with the challenge of (re)presenting typically misunderstood creatures as equal entities; creatures of significance with importance to humanity. As discussed earlier in this chapter, Tailby and colleagues argued that the *iDream* Challenge enabled an Indigenous reframing of humans and animals as *equal entities* in ways that Western science education rarely acknowledges. When you appreciate that you cannot harm a waterway, and everything that depends on it, the idea that pollution can be emptied into a stream as a commercial business decision is unthinkable. When you see a shark or a crocodile as part of your community, issuing commercial licenses to businesses to cull (kill) them is unthinkable. The contrast between Indigenous and non-Indigenous framings of nature and humanity is stark in these examples. The primary school students in the *iDream* Challenge understood the importance of their misunderstood creatures not only to themselves and their classmates but to all of humanity.

Theme Nine: Indigenizing Education Is a Shared Responsibility

The ninth theme recognizes that non-Indigenous educators are critical in influencing change within society as they represent the majority of educators in Australia and Canada. Non-Indigenous people need to understand they are inheritors of the colonial regime. Non-Indigenous allies need to be open to reflecting on colonial beliefs and practices in order to embrace different ways. They need to educate themselves about the distinctiveness of local and national Indigenous cultures, histories, knowledge systems, values and perspectives and then embrace them and make them part of our Nations' stories and part of their own teaching curricula. Non-Indigenous allies can become role models and help build cultural awareness and capabilities around First Peoples perspectives and histories. Calvin Racette, in Chap. 5, made a strong case for the role of non-Indigenous allies. He argued:

> non-Indigenous teachers become allies to the Indigenous community and are able to become the bridges to the Indigenous community. They build relationships with the children and to their families. It is these relationships that create optimal learning environments.

The chapter illustrated that it takes time for non-Indigenous allies to become proficient with both Indigenous knowledges and pedagogies, but the difference it can make for Indigenous children means it is an investment in education that must be made. To emphasize this importance, he states: "I have found that when Métis students and their culture are valued in a classroom, they become open to sharing their Métis knowledge and traditions. Therefore, if you work to create this safe space, much of the learning will come from the students." As previously discussed and highlighted by Blue in Chap. 2, it is an educational commitment—a resourcing issue—that needs to be factored into the budget for delivering educational programs, rather than one that relies on the goodwill of Indigenous Elders. There are many resources available for educators to learn about Indigenous cultures. Educators are responsible for educating themselves about Indigenous perspectives, Bodle and Blue, in Chap. 9 point to the work of White et al.'s (2019) research about engaging and partnering with Indigenous parents and caregivers in an education context. The authors share five principles are for engaging and partnering with Indigenous parents and caregivers, and they include: relationality, togetherness, critical discernment, pro-activity and community (White et al., 2019). These learning principles focus educators' attention on what is required when engaging with Indigenous people. For example, relationality highlights the importance of "working through relationships" in an education context, togetherness emphasizes a team approach, pro-activity signifies the need to have "an open and engaged mindset," community is about knowing the local community and how they can be valued in educational contexts and partnerships, and lastly, critical discernment when choosing resources and teaching strategies is required (pp. 22–23).

The process model for embedding Indigenous knowledges illustrated in Chap. 8 (Fig. 8.1) acts as a roadmap for education stakeholders to see how their practices intersect and overlap within the cultural interface and what they can do to support Indigenous tertiary students with professional learning experiences. It indicates *where* the power and control lies to shape the experience of practicum of Indigenous preservice teachers, and therefore, *who* is implicated in ensuring the safe, supportive and enriched nature of this experience. Once again, it reveals the personal, professional and political commitment required of non-Indigenous people to be effective allies in Indigenizing education.

Theme Ten: Systemic Reorganization to Sustain Indigenizing Education

The final theme to be discussed here is a plea to all educators to commit to systemic reorganization and change. In order to support and sustain this important work, it is essential that educators reach out and form properly resourced professional learning communities with both Indigenous members and broader professional learning communities. Commit to learning from others and then share this learning. Chapter 2 has illustrated that to transform educational practices in classrooms that incorporate

Indigenous perspectives shared by Indigenous people, it requires an ongoing financial commitment in school budgets. Once funding is allocated to schools for establishing sustainable partnerships with Indigenous Elders and/or interested members of the Indigenous community, then setting up professional learning communities can be a real possibility. School leadership also has to value establishing forming sustainable partnerships with Indigenous people to transform curriculum by embedding Indigenous perspectives, as do the educators in the classroom. Relationship building between educators and Indigenous people involved in this partnership will also need to occur. Care is needed to ensure that taken-for-granted assumptions are not made about what can be accomplished within a certain period of time and to ensure that "one size fits all" approaches to embedding Indigenous perspectives are not followed. Once these sustainable partnerships are established, they may resemble critical participatory action research projects (Kemmis, McTaggart, & Nixon 2014). This is because the purpose of the partnership should be about transforming educational practices that are often irrational, unsustainable and unjust in some way. By irrational, it could be about the participants identifying the curriculum that ignores the existence and contribution Indigenous people have made in that area. The unsustainable component is connected to the typical circumstances that Indigenous Elders find themselves in without funding and commitment from school leadership to properly resource their participation, making the practices nonrenewable and exploitative. The unjust component relates how curriculum that does not include Indigenous perspectives may have an effect on how *all* students see the world and their understanding of society and social structures which continue to reinforce inequities that presently exist.

Chapter 5 speaks to the importance of educators to reach out and work with their local Indigenous communities. Racette, himself an Elder, believes it is a keyway for educators to Indigenize their teaching practice. He explains that it is important for educators to develop relationships within their local Indigenous communities.

> One way of doing this would be to spend time with an Elder and learn about Indigenous perspectives and teaching approaches. Not all teachers have access to an Elder but for those that do they can collaborate with an Elder about concepts that are mandated to be taught in a classroom, you can gain an understanding of these disciplinary concepts through an Indigenous lens and drill down into them and learn them. Once you begin to learn them, you begin to understand the processes of how to see the world from an Indigenous perspective. This perspective is underpinned by teaching interconnections and relationships (rather than isolated facts or information) which is very important not only to sustaining a culture, but also to sustaining the planet. By understanding the concepts we teach in Western schools, from an Indigenous perspective, a teacher can then incorporate and interpret these perspectives into their classrooms so they make sense to the learners".

However, he also cautioned that Indigenizing education should be regarded as not just adding Indigenous perspectives, or content, but also understanding the existence of, and appreciating the importance of enabling the use of Indigenous pedagogies. All educators should learn how to act in respectful ways with Elders and their communities. Educators can undertake to learn about the history of their area and become

involved in local events. By engaging with professional learning communities, educators can share knowledge (and frustrations), have fun and socialize together, while being supported in doing the tough work of educational change.

Concluding Thoughts

The ten themes discussed in this chapter represent some of the fundamental tensions and opportunities that can be identified when discussing what it means to Indigenize education. Each theme can be found, to varying degrees, interwoven throughout the projects and case studies presented in the middle eight chapters where the authors have shared their standpoints, knowledges and experiences to contribute to these important conversations about what Indigenizing education could look like in teaching and learning practices across our two counties. In doing so, we aimed to help support educators, to more deeply engage with the theory and practice of Indigenizing your own pedagogical practice.

We commenced this book from the standpoint that Indigenizing education is fundamental to honoring First Nations' human rights and unique Indigenous peoples' rights (UN, 2007). Many of the chapters within the book have outlined histories in each country of realizing the achievement of policies, strategies and resourcing to support the Indigenization of education, but in many cases, these journeys have been partial attempts, or poorly resourced, or reliant upon community goodwill to be sustained. As noted in Chap. 1, the majority of people employed in national education systems in Western countries are non-Indigenous (Howard, 1999; Milne, 2017; Whitinui, Rodriguez de France, & McIvor 2018), so the labor of Indigenizing must be taken up by non-Indigenous educators despite any reluctance to engage (Milne, 2017) or concerns about their "qualifications" to do so (McLaughlin & Whatman, 2015). The inertia that has to be constantly overturned around Indigenizing education is continually borne by Indigenous peoples who must continually dismantle educators' beliefs that it is not a non-Indigenous person's place to act in this space (McLaughlin & Whatman, 2015; Wilson, 2014, Nakata, 2011).

The Indigenous and non-Indigenous contributors to this edited collected have demonstrated powerfully in their respective contexts how every mis-assumption, every fear of "not doing it correctly," every form of complacency about whose responsibility it is to Indigenize can be turned around. They have modeled what Karen Martin (2008) has argued as essential to honor Indigenous standpoints, by unpacking social, historical and political contexts, privileging First Peoples' voices and lands, recognizing and respecting entities as equal and the relationality that is necessary with such recognition. What they also demonstrate is that it is an ongoing endeavor requiring more supporters, more resourcing, renewed strategic and disciplinary development and genuine systemic response. As educators, it is our personal,

professional and political responsibility to take up this work—as Penny Tripcony (2004) would say—it is everybody's business.

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Glossary

Aboriginal Student Centre Gathering place for Indigenous and non-Indigenous students to access culturally appropriate academic and non-academic services and supports. It creates community and a safe space for Indigenous students.

Ally Someone from a privileged group who is aware of how oppression works and struggles alongside members of an oppressed group to take action (Antoine, Mason, Mason, Palahicky, & Rodriguez de France, 2019).

Band Office Governance structure in First Nation communities that are subject to the Indian Act. It is a structure of government that usually includes an elected Chief and Council.

Block Chain Technology A secure, decentralized, transparent, distributed, digital ledger that works by a consensus system.

Civilization Is a human-inspired project the contradicts and rejects humanity's original Indigenous values.

Cultural Interface In this space are histories, politics, economics, multiple and interconnected discourses, social practices, and knowledge technologies which condition how we all come to look at the world, how we come to know and understand our changing realties in the everyday, and how and what knowledge we operationalize in our daily lives. Much of what we bring to this is tacit and unspoken knowledge, those assumptions by which we make sense and meaning in our everyday world (Nakata, 2007, p. 9).

Culturally Relevant Pedagogy Pedagogy grounded in teachers' displaying cultural competence: skill at teaching in a cross-cultural or multicultural setting (Ladson-Billings, 1995).

Embedding Indigenous Knowledges A common but not widely agreed phrase for a vast array of ways to embed one knowledge system into another, systems which have been described as 'irreconcilable' by some Indigenous scholars (Russell, 2005, cited by Nakata, 2007, p. 8). Nakata (2007) cautions that one cannot simply take IKS and 'plonk it' down into WKS 'if it is another data set for Western knowledge to discipline and test' (p. 8). However, projects to embed IKS can preserve and maintain IKS, document and reinvigorate interest in the

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utility of IKS, strengthen Indigenous social, economic, and political institutions, and share IKS for wider human benefit (Nakata, 2007, p. 8–9).

Eurocentric Focusing on European culture or history to the exclusion of a wider view of the world, implicitly regarding European culture as pre-eminent.

Financial Agency Refers to an individual's ability to feel comfortable asking questions and demanding answers about finances relating to their own financial circumstances and also their community's finances. (Blue, Chap. 2).

First Nations The accepted term for people who are Indigenous and who do not identify as Inuit or Métis in Canada. Today, there are around 630 First Nations in Canada (Wilson, 2014). First Nations is an alternative name for Indigenous peoples in Australia, sometimes the preferred term, and acknowledges that there are more than 250 Indigenous Nations on the Australian continent and surrounding islands.

Haudenosaunee A northeast Indigenous confederacy in eastern North America comprised the Kanien'kehá:ka, Onondaga, Oneida, Cayuga, Seneca, and Tuscarora.

Hegemony Refers to how the ruling power base is maintained by influencing cultural discourses such as worldviews, values, beliefs, agendas, ideas, expectations and behaviours of society that reflects the beliefs and interests of the ruling class.

Indian Status Indian status is the legal status of a person who is registered as an Indian under the Indian Act. More information can be obtained from https://www.aadnc-aandc.gc.ca/eng/1100100032463/1100100032464.

Indigenous Advisory Circle Includes Indigenous staff, faculty, students, and allies, who are responsible for providing feedback and insight relating to Indigenous student services and curriculum to support the University's strategic plans around Indigenization.

Indigenous Knowledges Can include sustainable development, biodiversity and conservation interests, commercial and corporate interests, and Indigenous interests.

Indigenous Knowledge Systems (IKS) This phrase acknowledges that there are as many knowledge bases as there are Indigenous peoples. This plurality recognizes and values the many philosophies, forms and types of Indigenous knowledges globally.

Indigenous Onto-Epistemology Draws attention to the fact that a different way of coming to know and looking at the world exists from that of Western philosophy.

Indigenous Peoples From the Latin indigena, meaning 'sprung from the land'. Indigenous is being used synonymously with Aboriginal and in many cases is the preferred term in Canada. It includes the First Nations, Inuit, and Métis peoples of Canada—See here for more detail: https://www.rcaanc-cirnac.gc.ca/eng/1100100013785/1529102490303. In Australia, Indigenous Peoples of the land include various Aboriginal Nations and Torres Strait Islander peoples. See here for more detail: https://aiatsis.gov.au/explore/articles/aiatsis-map-indigenous-australia.

Indigenous Ways of Knowing Indigenous ways of knowing also known as Indigenous knowledges or Indigenous knowledge systems (IKS) are living ways of

making sense of the world embedded in community practices, rituals, and relationships with the physical and the spiritual world.

Internationalization of University Student Experiences Internationalization is a University strategy to increase the diversity of the student population and worldviews and to afford students the opportunity to gain global insights and perspectives. It seeks to achieve this by promoting the mobilization of students to the campus and to partnership campuses around the world.

Inuit (Singular Inuk) An Indigenous group living in the Arctic regions of Canada, Greenland, Alaska, and Russia (Wilson, 2014).

Knowledge Holders Knowledge holder is a respected community title bestowed through a community selection process to individuals whom encompass generations of knowledge embedded within the cultural and epistemological worldview of that particular Indigenous community.

Métis A distinct Indigenous group with formal recognition equal to that of the First Nations and Inuit. Their ancestors were French and Scottish men who migrated to Canada in the seventeenth and eighteenth centuries to work in the fur trade and who had children with First Nations women and then formed new communities. The families and their descendants were most often referred to as Métis (Wilson, 2014).

Mobility Exchanges It is one program in a suite of opportunities to facilitate the movement of staff, faculty, and students both inbound and outbound to partnership Universities around the world.

Narrative Inquiry Narrative inquiry is an umbrella term that captures personal and human dimensions of experience over time and takes account of the relationship between individual experience and cultural context (Clandinin & Connelly, 2000).

Onto-Epistemology 'Any ontology is itself grounded in an epistemology about how we know *what the world is like*' (Dixon & Jones, 1998, p. 250).

Otootemitowin A Nehinuw concept means the person is open to others and environments in a way that is welcoming, embracing, accepting, and non-judgemental; a characteristic that is important for any teacher working with students from different cultural backgrounds.

Postcoloniality 'If Brathwaite found a voice and a form of knowledge at the intersection of the classical models he learned in a colonial school with his life experience in the Caribbean and consciousness of African people's history, his poetry is less a discourse of resistance than a discourse claiming its centrality'. (Mignolo, 2000, p. 4).

Posthumanistic Science (PHS) Challenges the idea of human alienation from nature and rejects the notion that humans are the crown of evolutionary processes.

Posthumanistic Science Education (PHSE) Is emerging as a way of understanding the teaching and learning of science that focuses on relational thinking offered by PHS. PHSE emphasizes the relationships between chunked knowledge by aiming to 'de-chunk' these concepts and reframe them in a way that teaches the science concept with a larger, more relational framing with the aim of promoting competencies in ecological sustainability.

Site-Based Education Development The development of education and educational practices to be appropriately and effectively responsive to the local needs, opportunities, and circumstances of students, schools, and communities in diverse and different local situations—at each local site (Kemmis et al., 2014, p. 213).

Strategic Essentialism Essentialism is problematic, as it means to generalize diverse groups of people into broad, unified categories, for example, 'Indigenous' peoples. The problem lies in the tendency for the uniqueness and diversity of political aspirations, languages, and cultures of these groups to be lost in a panoptic view of who 'Indigenous' peoples are supposed to be, particularly through the gaze of non-Indigenous people. Minority groups often unite in various political and social systems and spheres as a form of 'strategic essentialism' to combat the consequences of marginality and leverage their combined power (Spivak, 2008).

Traditional Ecological Knowledge Communicates a common underlying cultural philosophy shared by Indigenous Peoples, where IKS stems from a deep and sacred interconnection between all aspects of the planet (Snively, 2016).

Western Knowledge Systems (WKS) Assumed to be the 'truth' because the information is acquired according to Western understandings of science and logic. It is used in this book to differentiate from IKS—to generally refer to non-Indigenous knowledge production. The use of both terms is not intended to be a polemic device—we acknowledge the position of Nakata (2007) in his definition of the cultural interface (see above) that these knowledge systems sometimes converge.