

**Indigenous Learning Design for Teaching and Being:
Implications for Educators Transitioning to
Curriculum Embedded with Indigenous Ways of Knowing**

by

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B.A., University of Victoria, 1996

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Supervisory Committee

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Abstract

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This project reflects upon my own personal experiences of teaching and learning, taking on an ethnographic lens as I begin to develop as an Ally. I use the process of planning for a new curriculum to re-think my teaching practice; both the known colonial influences as well as those I did not realize existed within me. I study the literature around Indigenous Ways of teaching science, relate it to my own experiences, and make classroom, school, and district recommendations. I move from the typical western perspective of learning and assessment to more traditional Indigenous Knowledge and Wisdom incorporating the power of story as a meaningful way of learning. The conclusion I draw is that there is much to be done to Indigenize our classrooms; curriculum change alone is not enough. True and lasting change will require ongoing and honest self-examination with a willingness to ask difficult questions and to become vulnerable to trusting that the answers have always been there.

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I especially thank the efforts of Dr. Jason Price, whose encouragement, insights, and efforts to reach all learners regardless of their backgrounds are truly inspiring.

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Definitions and Statement of Terms

Aboriginal Education: Although Aboriginal Education, or “Ab Ed” is the common term in 2016 to describe the importance of including Indigenized curriculum and ways of teaching to reach all learners, historically, the term Aboriginal is strongly attached to colonialism and only further perpetuates the problem. For this reason I have not used the term Aboriginal Education.

Ally: What does the term “ally” mean? When I started my graduate studies, it was a term that had not yet been coined, and even today is a term I have only heard in popular culture and university readings, but never in the public school system. Throughout the project, I use and capitalize the title Ally and Allyship to underline the importance of identifying educators who are open to standing with, developing accountable relationships with, and actively furthering their understanding of Indigenous relationship building and the influence of colonial practices. Through the autoethnographic lens, I felt however that I needed to come up with my own definition, not just a researched one. As an educator, being an ally represents a continuum of learning and a realization of the oppression our education system has portrayed for decades, and my part in it. It means valuing Indigenous practices and beliefs and linking my thoughts and actions with generally accepted patterns of welcome from First Nations Peoples. Allyship is being grateful, honest, open, and humble as I question past practice and unlearn settler habits in order to re-imagine relationships with the Indigenous story. I draw this grounding on the work of Dr. Lynn Gehl of the Algonquin Anishinaabe-kew First Nations, and her Ally Bill of Responsibilities, found in Appendix A.

Educators: Instead of using the term teacher, I chose to use the term educator in this project. Teachers are professionals belonging to professional associations, and are a subset of educators. I wanted all employees working with students to be recognized in this project. Educational assistants, lunchtime supervisors, principals, vice-principals and community members are all educators within our schools.

Indigenous: From Latin, Indigenous literally means “originating in and characteristic of a particular region or country.” I especially like how the term Indigenous is rooted in sense of place, and capitalized it to show its importance. Through the project I use the term Indigenous to describe the First Peoples, Métis, and Inuit peoples of Canada because it is a non-governmental term, and is inclusive of all First Nations peoples, Metis, Inuit, status and non-status Indians.

Chapter One

Position of Researcher and Statement of the Problem

The voices of the unheard
cannot help but be of value.
Reality is more accurately perceived
from the bottom of a hierarchial society
than it is from the top
where it is long unheard,
often brutally silenced, and more often than not
spoken from those in power.”

- Lee Miracle, in “I Am Woman”

Introduction... A personal journey from shallow to deeper waters

The challenge of ensuring BC educators are actively and meaningfully infusing Indigenous and Traditional Knowledge and Wisdom (TKW) into their practice is of great interest to me as a practicing teacher, parent, and community member. In this research project, utilizing autoethnographic methodologies, I explore how what I teach and the way I teach has transformed to the point that TKW is infused by default into all aspects of my elementary science pedagogy and curriculum. My long journey to becoming an advocate for and practitioner of TKW has been

inspired and informed by both my personal and professional experiences. Over time this journey has shaped my mind and heart, linking them with the standard values, norms, and beliefs within our school system. Both are now intertwined, forming a well of knowledge of “what must be done” and “what could be done,” from which ideas spring to reach children in powerful yet respectful ways. This well of knowledge lifts me from a traditional practice to one of reflection as a teacher and learner. But this took time, and I did not always feel this way.

As I write I know that as a teacher, I am responsible to the curriculum, but feel detached. Why am I having such difficulty? As I try to craft my own authentic voice in the current educational context, I realize that like all learners, I too have a story that I have never fully reflected upon. My background includes colonial privileges and benefits as a result of society’s oppression of others, and although I do not assign blame, I must recognize its existence. Through my developing ethnographic methodologies I realize that I cannot evaluate the Indigenization of our classrooms without being introspective myself, and that the two are not separate. What do I know about who I am? How does this influence, both positively and negatively, my practice? In the context of becoming a stronger Ally to Indigenous peoples, the process begins internally with these questions before action can be taken.

Sitting on my deck during a drought, under a second growth cedar as I write, I can only imagine what once stood here before, and that the cedar represents exactly what I am studying. Ancestors. Forced change. A new beginning. I realize that my own identity always intersects with my practice, and this is something educators must overcome. Indigenous frameworks were never offered in my own education when examining a problem, scientific or not. So I must go back to the beginning.

As a child in the late 1970s and 1980s, I grew up with my Dunne-Za First Nation cousin living in our family home. My cousin is a member of the Doig River Band of the Dunne-za First Nation near Fort Saint John, British Columbia. My parents obtained legal custody when her parents, my aunt and uncle, tragically died in a house fire. All three of their children survived; however, they were split amongst three different family members in three separate BC cities to avoid state adoption or foster care. Although I do not have First Nations ancestry myself, I witnessed my cousin's experiences of the cultural and political divides and barriers between Indigenous and non-Indigenous peoples in our community and in the school system. I remember feeling disturbed by the difficulties my cousin had being placed in the conservative, predominantly white, middle class town of Kelowna. She had no choice but to attend an unfamiliar school. No longer did she have her immediate family supports, community connections, or traditions. No longer were her siblings at her side.

In the midst of so much unfamiliarity, my cousin longed for social connections and was in need of Indigenous school supports that were non-existent at the time. Traditional Ways of Knowing, and multiple ways of *showing what you know*, were not valued and instead shunned, as our education was heavily favoured towards that of the western world. I remember her anger, her poor grades, her label as a "troubled youth." Could what we are learning now about TKW learning design have prevented some of these difficulties?

I remember, as if it was yesterday, the morning she was instantly placed in our family, and the months that followed. Although aware of her anxiety at the time, now, as an adult, I can truly appreciate the fear and alienation she must have experienced. Unbeknownst to me, her birth into our small family set me on a journey of personal and professional awareness, reflection, and discovery that goes on to this day. I recall asking myself, why did she hate going to school? Why

did she have such a hard time making new friends? Why were strangers on the street now staring at our family? Why were eggs thrown at our car at school? These were questions I could not answer as a nine-year-old. As an adult, I am now more familiar with the insidious and ubiquitous manifestations of racism, and as a teacher, I challenge the dominance of western traditional approaches to teaching and curriculum, in aid of encouraging the reconciliation of Indigenous and non-Indigenous peoples, and the dismantling of educational practices that disadvantage Indigenous learners. As Justice Murray Sinclair says, “It’s education that got us into this mess, and education that is going to get us out” (Masterson, 2016).

Now I ask myself how educators can go about taking on this challenge. We are the teaching generation that has been given this task. I believe history will look back on this era; my hope is that people look back and say, “Wow...as educators you led our children down the right path.”

This perspective stems in part from personal reflections upon my upbringing and childhood experiences. Despite the obstacles and barriers my cousins faced, they became successful adults with vibrant, meaningful and happy lives. In an era of limited understanding of socio-cultural issues between First Nations and western culture, they did their best to open up their hearts and minds. They were also provided with all of the economic opportunities and suburban lifestyle choices a middle class family could offer, from camping and travel, to outdoor sports and music, to film and theatre. One of my cousins, Brian Jungen, an internationally celebrated contemporary artist, has dedicated his creative efforts to exploring the tensions and synergies between the two worlds, Indigenous and non-Indigenous, a path I have tried to follow in my educational practice. Brian is known for bridging both his western and First Nations heritage by repurposing everyday items such as Nike Air Jordan shoes into traditional masks,

ubiquitous white lawn chairs into whale skeletons, and professional sports jerseys into traditional blankets. Could Brian's message in part be due to his unique upbringing? His work pays tribute to his First Nations heritage while asking questions about its place in our modern world, and has inspired my own efforts to creatively and substantively infuse TKW into my pedagogy and curriculum, as I teach in the compulsory public school system still dominated by western ways of knowing and being. This is important because all educators need to seek the courage to examine their own learning journey, ask questions, and open dialogue as we move forward.

During my teacher training at the University of Victoria in 1998, I was surprised that there was no mention, discussion, or invitation to question or discuss alternative worldviews, yet I was aware that there were other ways of knowing and learning. I had witnessed my cousin's struggle to express herself, and I could see in my practicum work that not all students' needs were being met. My students all had different styles of learning and home supports. Alternative ways of knowing, being, teaching and learning were not being emphasized, yet we now know that these alternative constructs need to be part of solutions to positively impact students (King-Sears, 2009).

As a beginning teacher at the high school level, after having taught apartheid and the holocaust, I realized the potential of teaching the lost and forgotten residential school system, and the even greater potential of what it could mean for all students to be part of Canada, or Kanata, our village. My school supervisors quickly said no, raising concerns that exploring residential schools with students would cause grief in the community. Students would go home and ask uncomfortable questions to parents. Administrators would get calls about a topic not in the curriculum. First Nations parents might "go off the wagon" and start drinking, with the school to blame. And there was no support in the school or community to handle that topic. "No"

to teaching residential schools was the answer... a directive I had to respect as an employee. Dr. Cindy Blackstock of the Gitksan First Nation states that residential school history must not be taboo, and we must be open to reconciliation in part through classrooms if we as a country are not going to say sorry twice (Blackstock, 2011). But what is this history and how does it relate to my project?

1849-2016: Curriculum Reform and Implementation

Current literature on the history of education in British Columbia abounds. However, there is a lack of readings that examine curriculum implementation together with the infusion of Indigenous knowledge. To fully appreciate curriculum implementation in 2016, educators must go back to the beginning. When doing so, it should be noted that although system-wide change can look quite systematic and planned on paper, the actual learning and student story behind these changes can be very different for all learners due to cultural and contextual differences.

Schools are a broader reflection of society as a whole, and as society's values, technologies, economies and workforces change, so too do schools (Barman, 2013). This has been the case since the first school in BC was established by the Hudson's Bay Company in Fort Victoria in the 1800s.

At this school in 1849, only children of company managers could attend. Its mission was twofold: to promote religion, and to further the social class system (Barman, 2013). From this starting point, schools were exclusive and devalued diversity and critical thought (Dunae, 2008). The *educated citizen* at this time was one who followed orders, not one who expressed their true opinions. This framework, already counter to TKW, became even more tragic for First Nations children who were forced to attend the residential school system that started in BC at that time (Barman, 2013).

In the 1850s, James Douglas, the governor of British Columbia, established public schools. He included labourers and the working poor, but still limited schooling to non-First Nations children. These “nonpublic public” schools slowly expanded, and by 1865 the provincial Common School Act established school boards and provincial funding for free non-religious education in the province (Dunae, 2008). By 1890, a common program of study included reading, writing, math, history, geography, and hygiene (Dunae, 2008). This could be considered the starting point for BC’s prescribed curriculum.

As the province’s population grew, the system expanded for several decades without change, until it was systematically evaluated in 1925, resulting in the first provincial curriculum reform: the Putman and Weir Survey of the School System. This survey marked an expansion beyond core subjects and included libraries as integrated, active learning areas rather than merely book repositories. More liberal holistic studies such as physical education, science and critical thought, music, and the arts were promoted (Putman and Weir, 1925). This was the infancy of progressive elementary education that was child-centered. The province also formally recognized later stages of child development by introducing the concept of middle schools, and, at least in written policy, multiple ways of active learning beyond reading, listening and writing. History and geography were now termed *social studies* and students learned about citizenship, social tolerance, and democracy (Putman and Weir, 1925).

In the war years of the 1940s, the curriculum was used as a medium to politically impact children during the war effort. Policy makers suggested changes to the curriculum that would further “the great questions of civilization that we now have on our hands” (Thomson, 1942). For learners, this was a conflicting time. On the one hand, they were being told to uphold a free and democratic society, and on the other, curriculum manuals included propaganda

pamphlets (Thomson, 1942). One could argue that, like the 2016 curriculum's efforts to implement the Truth and Reconciliation Commissions' recommendations, this period of time tested curriculum change. In the 1940s, we see that while critical thought was being promoted, there were conditions and limits for students in terms of what students could study and how they could share their knowledge in class (Dunae, 2008). Through my own personal learning journey, the student-centered inclusive classrooms of 2016, and the readings, this limiting classroom environment for students does not need to be the case in 2016.

Post World War II, Canada grew in population, technological change, and social liberalism. For example, 1949 saw the first steps to more inclusivity in education with Indigenous students starting to transition from residential schools to public schools. Funding and amendments to the provincial School Act enabled school districts to do so.

After the growth years of the 1950s, the second Royal Commission on Education occurred in 1960, and brought us into the modern era of curriculum change; it was at this time that the province considered its educational system as having "the best educated generation in history" (Sullivan, 1988, p. 2). This groundbreaking reform document was known as the Chant Commission. Its primary recommendation was to instill as purpose the intellectual development of students:

Changes occur in educational programs and these in turn provide both motivation and direction for further progress. There can be no return to practices of a generation ago. The primary stated aim of intellectual development will become clear as the definite recommendations concerning practices in the school system evolve into an educational philosophy. (p. 9)

The 1970s and 1980s furthered the Royal Commission's mandate as students became more aware of resource use and energy, health and social issues, and the environment. These issues all paved the way for the Sullivan Report of 1988. The government accepted and implemented the report through The Year 2000 educational reform initiative, which focused on decentralization, more flexible learning environments, and more large-scale assessments. Highlighted were individual learners' needs, and equitable access for all learners regardless of race, social status, or ability (Crawley, 1995). Primary students were no longer graded and students were to learn at their own pace. Year 2000 was generally considered a failure due to political upheaval (Crawley, 1995), including a new government elected in 1992 that inherited a large deficit. Year 2000 policy documents were vague about how educators were to implement the proposed changes, and there was no money to direct towards teacher training. The teachers' union was not publicly engaged as a partner, and internal conflict in the Ministry of Education itself prevented any progress to implementing the curriculum (Crawley 1995). These problems set Year 2000 up for failure, and comparatively are not nearly so prevalent in 2016's initial stages of curriculum implementation.

Advances in curriculum continued after the failure of Year 2000. British Columbia revamped all K–12 curriculum between 1995 and 1998, and it became holistic in vision but prescribed in nature, with specific outcomes mandated to be taught at each level. Through the federal Development of Education in Canada organization, each K–12 curriculum document was reviewed and revised every five years at most (Council of Ministers of Education, 2001).

Of particular importance to this project, the province published the *How Are We* report in 1998, which examined the state of Indigenous education in the province. The goal of this report was to improve understanding of the school system's performance in educating Indigenous

students (BC Auditor, 2015). I would argue that this was one of the first steps at publicly examining how Indigenous students performed within the public school system. It is also a rationale for improvement in 2016 to assess how the 2016 curriculum is performing for *all* students' understanding of Indigenous perspectives, without limiting system assessment to Indigenous student success rates alone.

For most British Columbians, the last decade has been marked by underfunding and tensions between teachers and government. In this era, prescribed curriculum was revised only, and adapted to increase focus on internationalization, advances in technology, and social awareness. As early as 2001, Canada recognized that the world required of our children “a formidable ability to adapt, communicate, solve problems and be creative, and so there is a need to update current curricula” (Council of Ministers of Education, 2001, p. 19). Despite funding limits, one can see as proof the government sponsored 1998 *Shared Learnings* resource book for BC educators looking for ways to share learning experiences with BC Indigenous peoples, and more recently the 2015 *Aboriginal Worldviews and Perspectives in the Classroom* book, which calls to action the Truth and Reconciliation Commission's recommendations for healing and renewal. For my own learning story, I have a personal connection to this new resource as I spent several summers doing my graduate course work with the main author, Kaleb Child.

Historical development of British Columbia's educational system shows transformation, but transformation as a way of colonizing, suppressing, advancing political will, and objectifying marginalized learners such as First Nations Peoples. In a way, the results affected all learners through forced missed learning opportunities and students being witness to systematic racial and cultural oppression. Educators now must combine the new joint desire from teachers and government to infuse all students' learning, without prejudice, with traditional knowledge and

ways of knowing and being, social attitudes of tolerance and acceptance, and applied skills for today's world. Worldwide, countries following a similar model have done so through major system-wide curriculum reform, as British Columbia is doing in 2016 (Ministry of Education, *Service Plan*, 2016) The journey has started but the destination is still far away.

A Personal Transition

Years after my teacher training I remember questioning teaching colleagues, administrators, and parents about why my school's fundraising and social justice efforts were directed to an African country 17,000 kilometres away, even though the Tseycum First Nation reserve was located only two kilometers from the front door of the school, and was suffering from "third world like" housing, health and food security challenges. These questions helped me to fully realize the need for knowledge and understanding of TKW in our education system, and informed my decision to further my professional growth by enrolling in a First Nations and Environmental Studies Graduate Program at the University of Victoria, where studies were place-based on the traditional territories of the 'Namgis First Nation, part of the Kwakwaka'wakw in Alert Bay and at significant First Nations sites near Bamfield BC, Mayne Island in the Salish Sea, and on the BOKEĆEN (Pauquachin), STÁ,UTW (Tsawout), WJOŁEŁP (Tsartlip), and WSÍKEM (Tseycum) First Nations lands.

One of the program's requirements on exploring community, culture, and environment was to give a place-based presentation on Hanson Island in the Broughton Archipelago. Of the twenty topics, mine was the last remaining choice: residential schools. As I delivered my well-researched presentation, I remember sitting beside swirling waters under giant cedar trees. Tears were forming in the crowd, and some audience members moved to the back. Little did I know that the residential school legacy had directly impacted, through the generations, some of those

audience members, my cohort friends. Yet my own ignorance gave rise to a powerful presentation, and I was later told that it was the very first “first” of many to come in their lives; that I had found the courage to breach the barrier of the unspoken. I now see that as difficult as it must have been to hear, heroes stood with me, their families alive and well through the physical and sexual abuse, heroes who are now able to share their stories.

This is indeed history that belongs to all Canadians, and one that must be shared. Its significance is real: In my daily interactions with students, I see among them future leaders of our country, those who are going to shape our land and society, who will make important decisions about reconciliation years down the road. Our students need to start coming to terms with First Nations history and culture in order to make sound choices.

More recently, my professional experience has transitioned me from viewing my craft not just as a teacher, but as a teacher-leader, and not in the traditional sense of chairing meetings, or focusing on district committee work and future educational directions. More than organizational leadership, as a teacher-leader, my experiences have guided me to a relational standard in which I listen deeply to student stories, and share values and goals to support student engagement, inclusive yet diverse learning, and success for all students. This new lens is put into action not only in the classroom, but through my contract work developing curriculum and assessment materials for the Ministry of Education, where part of my mandate is to incorporate TKW in the way we teach and assess, and to address the problem of classroom teaching and assessment methods reflecting the values of the dominant culture.

This professional and personal journey has connected my own learning with learners, and brought an ethical framework to my practice. I have worked through the barrier of access and being told no, to the current teaching environment where I can transform a TKW accessible

curriculum into successful experiences for all learners. The new curriculum canoe is on the beach. Together we must board it and raise our paddles.

Wading into Shallow Waters

British Columbia's 2016 curriculum, *Building Student Success*, is a call for BC educators to increase all learners' understanding of Traditional Knowledge and Wisdom (TKW), as well as Indigenous perspectives and worldviews (British Columbia, Ministry of Education, 2015). It is an important document that helps educators understand, open dialogue, and appreciate the 2015 Truth and Reconciliation Commission of Canada *Calls to Action*. TKW can be defined as "the Indigenous knowledge of the natural world, the respectful, sustainable, spiritual, and interactive philosophies towards living, and the cultural passing of knowledge within social groups" (Turner, 2000, p. 1275). First Nations communities on Turtle Island have been educating their children since time immemorial in their values, beliefs and practices of TKW.

In the Ministry of Education's document entitled *Aboriginal Worldviews and Perspectives in the Classroom*, Kaleb Child (2015) argues that deeper understanding and insights into children's learning are best found through thoughtful and reflective best practice teaching. The problem, however, is that changing teacher mindsets to focus more on how we teach and how students learn—over what we teach and what students produce—represents a fundamental shift in the teaching of culture. We cannot assume that supports are in place and the teacher will be there to enact such change. Schools traditionally emphasize the values of the dominant culture, which, unlike TKW, are highly individualistic and carry the goal of maximizing individual success (Greenfield, Quiroz, & Raeff, 2000). Educators must therefore transition from a longstanding education system that values individualistic ways of knowing, to collectivist

cultural ways of knowing, where social acceptance and “learning by doing” within a group context are highly valued amongst First Peoples. Whitbeck (2001) describes a teaching approach where the values of sharing, non-competitiveness, listening instead of speaking out, and allowing others to go first are learning strategies from First Nations cultures that should be valued in the classroom. For educators, however, this cultural shift in pedagogical practice and curriculum development must be a purposeful and intentional practice. School staff must make past and current social, political, and economic contexts of Indigenous peoples essential components of the learning experience for all teachers and students.

Pewewardy (2002) argues that wide-scale change in curriculum transformation requires educators to be reflective in their practice and observe and refine their techniques as curriculum and learners change. Classroom based educators need to recognize that they are the agents for change to improve student learning (Wehling, 2007). They need to become “lead learners” by knowing the history of First Nations in BC, modeling cultural recognition themselves, and acting upon this knowledge in the classroom to value and validate the rich culture and history of Indigenous peoples (Baker, personal interview, July 2016). How can TKW facilitate teachers as lead learners to create engaged 21st century *learner-thinkers*?

According to Kuhlthau, Maniotes, and Caspari (2015) the attributes of learner-thinkers are in perfect alignment with the essential qualities of 21st century learners, including characteristics such as honesty, integrity, and purposefulness. Not only that, but these essential qualities of 21st century learners uphold Indigenous perspectives and worldviews, a knowledge system that relied on confident, inventive, reflective citizens and was self-sustaining for millennia. It is also a system that continues to this day. The Ministry of Education has now recognized First Nations’ contributions to creating 21st century learners by reproducing the *First*

Nations Principles of Learning (Appendix 1), which forms the overriding philosophy behind the new curriculum. These principles of learning capture the unique story of learner, the well-being of self and community, and how learners think and act in a variety of ways.

Indeed, TKW, “through cultural connections and relationships to our land and peoples, needs to be an integral part of growing student success” (Hunt, personal communication, February 2016). The British Columbia Teachers’ Federation, the British Columbia Principals and Vice-Principals’ Association, private enterprise, and municipal, provincial and federal governments are all increasingly aware of cultural issues and responsibilities, many of which attract more attention than ever in the media and even in family discussions (Guilbeault, 2004). Policy makers from many cultural backgrounds recognize that tomorrow’s decision makers—who will likely have to deal with more cultural and political problems than we do today—are today’s children (BC Aboriginal Child Care Society, 2002). This has resulted in a transformed British Columbia curriculum that includes TKW and is mandated for full province-wide implementation in September 2016. However, it is one thing to write policy, and quite another to create the conditions, motivations, and resources to have educators practice it in classrooms across the province.

Into Deeper Seas: The Current Context & TKW Possibilities

During this journey with the reader I will explore the gaps in current pedagogical knowledge and practice for infusing Indigenous content, perspectives, and worldviews into the new 2016 British Columbia curriculum for grade four elementary science. Some of the questions that I will explore include: Why is it important for educators to understand TKW as a pedagogical approach? What are the implications for teaching practice of having TKW in the classroom? What assumptions and ethical limitations do educators need to be aware of? How can

we define and measure TKW in the classroom to discern when it is being implemented and when it is not?

In order to assist colleagues still engaging in the first steps of transforming their own pedagogy and curriculum, I will unpack and reflect on my own experiences and describe the process I have taken in implementing the new 2016 *Building Student Success* curriculum in science. My goal is to address the lack of set induction, or mental readiness and planning resources for dominant culture teachers to explore the implementation of an Indigenized teaching approach and design for all learners. Through this approach, my hope is that big curricular ideas, through purposeful design inclusive of TKW, can be channeled through all specific core competencies and outcomes within the new 2016 British Columbia elementary curriculum.

Shifting Paradigms and Charting a New Course

It is an exciting time for education in British Columbia, and I feel that the world is watching as the new curriculum is implemented. I often hear how powerful good teaching design for our First Nations learners can be, but the 2016 elementary curriculum is good design for all learners and a powerful rationale for exploring TKW and teaching. However, as someone who has been involved in helping individual teachers as well as schools, districts, and the province move from TKW theory into practice, I believe it is more than relying on “just good teaching,” especially when it is a construct many teachers cannot define.

In addition, if educators are going to Indigenize their classrooms through a murky construct, they must also transition from an outgoing 2010 Ministry of Education curriculum package in grade four science that is inherently confusing for many learners due to its series of disconnected topics. For example, educators are ingrained in a teaching pattern whereby they teach the separate units of properties of light and sound, then weather, and finally habitats and

communities, with no relation to one another (British Columbia Ministry of Education Curriculum package, 2010). These curricular units lack coherence and make it difficult for teachers to create learning connections throughout the school year.

Educators must also transition from teaching broadly to teaching deeply. The outgoing curriculum for grade four science (Ministry of Education, 2010) contained 11 prescribed learning outcomes, which teachers could not reasonably cover in the school year, let alone deeply. The new curriculum, however, has only four main outcomes (*Building Student Success*, 2015). *Building Student Success's* big ideas, core competencies, and embedded content allows for more flexibility in how teachers teach, and are much more inclusive of allowing students to think of one's self, past and present, and to think critically about their sense of place.

Although there are now less core competencies to teach, the expectation is that these concepts will be taught in-depth (British Columbia, Ministry of Education, *Building Student Success*, 2015). The hope is that this will allow for more thoughtful discussions and opportunities for children to show their thinking in a variety of insightful, original, and meaningful ways. Quality education is about student connections and depth of knowledge (Beairsto, personal interview, July 2016), and it is through the curriculum including TKW that teachers can bring this personalized depth of knowledge and multiple perspectives to their practice.

In contrast to the outgoing curriculum, the new provincial elementary curriculum primarily focuses on facilitating students' deep understanding of *big ideas*. Learning is moving away from all students receiving a textbook and having to learn the same material at the same time. In grade four science, for example, students learn about independent and interdependent environments, matter and energy within those environments, and Earth's motion. Students can then personalize these big ideas and link them with their own experiences and passions. Rather

than prescribe specific outcomes that might be deemed Indigenous or not, the stated approach is that all outcomes are Indigenous and that TKW and perspectives can help us learn about the world (Ministry of Education, *Aboriginal education improvement agreement*, 2016). In the study of space, stories abound in First Nations cultures about the significance of the sun's and the moon's rotation, and how they influence our lives. The 13 moons of the W̱SÁNEĆ mark weather and seasonal environmental changes, economic activities, and cultural activities such as hunting, fishing, and berry picking, and cultural gatherings and celebrations (Claxton, 1993). The moon Pexsison, for example, represents the opening of hands, the opening of blossoms, the coming of spring.

In First Nations communities, complex physics were needed to build structures such as totem poles and bighouses, fishing weights, weirs, and shellfish harvesting devices and required scientific knowledge and an intimate connection to the land to create technology that enabled long-term survival. The new curriculum expects teachers to include these Indigenous worldviews and perspectives throughout, as outlined in the Ministry's separate *Aboriginal Education* document. However, this increases the gap between theory and practice, since teachers are expected to infuse their lessons with Indigenous content, but the ministry's lack of resources and focus on funding literacy and numeracy make it difficult to support them.

Further confusing matters are the 2015 Ministry of Education's *Aboriginal prescribed learning outcomes*, whose contents are not directly included in the new *Building Student Success* curriculum portfolio. Although Indigenous content is now claimed to be infused throughout the new curriculum, is it really? In fact, in the *What's New*, *Learn More*, and *Detailed Curriculum Information* sections of the new curriculum, there is no mention of Indigenous content. If, as a

researcher, I have trouble finding information on BC's *transformed* curriculum, then what does this say about its true purpose?

As we move through these challenges to Indigenize our classrooms, we must also develop a methodology that finds active ways to integrate TKW into the traditional *priority* curriculums, such as reading, writing, and math. TKW can indeed be included within these top district priorities and goals, yet First Peoples Principles of Learning are still largely omitted from formal school plans, policies, co-curricular, and curricular activities. In my experience, parents simply want to know two things about their children: Are they behaving, and can they read and write? Parents question the value of honouring cultural diversity or BC's Indigenous heritage in an era where literacy and numeracy are even more urgent issues? Consider, however, the work of Lorna Williams (2011), who argues that more important than subject knowledge, is learning the skills, gifts, knowledge, wisdom, and strength to look after self, family, community, and land.

One such way to do so is through the development of school goals and performance information, which are required annually from each school (Ministry of Education, 2015). Many of these formal school goals, which are typically in the areas of social responsibility, reading and writing, could easily incorporate TKW. The 2012-2015 *Saanich School District Achievement Contract* (Appendix 2) focuses on achievement levels in Kindergarten to Grade 12 reading, writing, math, and social responsibility. What constitutes such social responsibility could explicitly include the holistic values of First Nations culture that supports community-minded learning and the role of Indigenous knowledge. Specific to this project, science learning is a natural fit for developing and teaching the bigger picture of social responsibility, particularly with environmental and land stewardship issues so prevalent in today's social consciousness.

Inspiring my project is the work of Oscar Kawagley, a Yu'Pik anthropologist from Alaska. Similar to my proposal to transition to a universally accessible TKW curriculum design for all learners, Kawagley proposes in his book, *A Yupiak Worldview* (1995), a way of teaching that incorporates all ways of knowing, rather than just western constructs. Kawagley argues that education needs to stem from the Indigenous way of knowing, in which knowledge and skills are acquired through direct learning experiences. Rather than isolating parts of the whole, he argues that relationships and connections that include TKW need to be emphasized (Kawagley, 1995). Marie Battiste, a Mi'kmaw university professor from Potlotek First Nations, outlines how decolonizing education is for all students, not just for Indigenous students, and explains how all Canadians will benefit from this decolonization (Battiste, 2013). Battiste frames this entire text as a “critique of current Eurocentric education” and advocates for “systemic change and trans-systemic reconciliations” (Battiste, 2013, p. 14).

In addition, this project is also grounded in Williams and Tanaka's work on TKW. They argue that society is at a turning point that demands a culturally combined approach to new curriculum, one that rejects universal “truths” stemming from the status quo, which have traditionally flowed from generation to generation, from the colonizer to the colonized (Williams & Tanaka, 2007, p. 1). Instead, Williams and Tanaka suggest that we need to open up a “third space” in schools where culture and curriculum can weave together, offering alternative paths to knowledge and community wisdom (Williams & Tanaka, 2007, p. 1).

This way of educating based on TKW includes a high degree of social consciousness and sense of responsibility—the very attributes of social responsibility western educational systems are promoting in today's schools through programs such as mindfulness, self-regulation, and place-based gardening. The stage is set. TKW and modern teaching approaches are more

compatible than ever. TKW in the classroom represents a 21st century intervention that requires thoughtful integration, so it is not another of education's passing fads.

During my career in elementary teaching I have witnessed colleagues planning and facilitating rich learning activities for students. However, given the often isolated and insulated nature of compulsory public school teaching, many of these exemplary learning experiences unfortunately takes place one class at a time behind the closed door and four walls of the classroom. Providing practical strategies and recommendations to educators in an accessible format will not only promote connections and a closer-knit school community, but will also enhance teachers' skills. Without a doubt, TKW holds considerable promise, but one I fear will not be achieved if we do not develop a mindset framework to guide teachers in their understanding and involvement in Indigenized classrooms.

This project has two main goals. First and foremost, the project's purpose is to explore and analyze the new 2016 provincial curriculum design for strengths and weaknesses as it relates to infusing an Indigenous worldview into the classroom. Secondly, I will provide recommendations for teachers who are interested in following my path and continuous journey as a teacher ally to Indigenous peoples. It is my belief that the school day contains countless opportunities to incorporate the personal, moral, social, traditional, environmental, and cultural aspects of TKW.

Research Questions

This project aims to answer the following questions:

1. How does one's personal identity and experiences influence teaching within an indigenized classroom and a developing Allyship?

2. What do educators serious about transitioning to the new BC curriculum need to consider in order to Indigenize their classrooms?
3. What recommendations emerge from my own personal and professional journey for educators committed to infusing TKW?

Methodology

I have chosen to base my study on an autoethnographic approach that falls under the heading of qualitative research. It is an approach to research and writing that seeks to describe and systematically analyze and critique personal experience in order to understand cultural experience (Ellis, Adams, and Bochner, 2011). It acknowledges and values the researcher's relationship with others. It narrows the researcher's focus by defining the "meaning of the researcher's struggle," then "guides them to figure out what to do" (Adams, 2015, p. 9).

In autoethnography Madison (2005) emphasizes that the researcher be acutely aware of one's positionality in order to objectively analyze the subject matter and recognize the researcher's own power, privilege and biases throughout. For my project, this is especially important as I am not a First Nations person myself and am an outsider to local Indigenous culture I am expected to teach. As I reflect upon my experiences, being aware of this position allows my viewpoint to become reflexive ethnography, a term Maddison describes as researchers being responsible and accountable to their own power positions of authority, and turning back those learned layers in order to be open and true to self-reflection and sources of information. Through Maddison's work I came to realize, as I do in teaching, that a researcher must be patient and careful as questions are uncovered layer by layer.

To support the autoethnographic approach, I will also pull elements from the action research model, another qualitative research tradition that is based in the social sciences and the

work of Kurt Lewin (1948). It is one of the leading models for school-based research (Altrichter, 1993). Kemmis and McTaggart describe action research as “a form of self-reflective inquiry” whereby the researcher “tries out new ideas in practice as a means of improvement and as a means of increasing knowledge about the curriculum, teaching, and learning” (1998, p. 6). All action research, according to Kemmis and McTaggart, is based on a cyclical process of planning in order to improve the status quo, acting upon the plan, observing the effects of the action in context, and reflecting on these effects. This cyclical, step-by-step approach, says Lewin, is composed of “a circle of planning, action, and fact-finding about the result of the action” (1948, p. 206). I believe that the action research model will allow me to investigate the autoethnographic approach and better enable me to provide ground action-oriented solutions for educators. Action research formalizes what good teachers already do well and values the approach I believe teachers need to take when considering an infused curriculum. It honours the ethnographic process as much as the product, and emphasizes the importance of reflective practice, relationships and inclusiveness (Smith, 1999, pp. 127-128).

Given the autoethnographic methodology guiding this study, I will focus on my personal and professional experiences related to my journey transitioning from a “not a chance—I’m not allowed” mindset to an Indigenous Ally teacher. I want my story to fulfill one of autoethnography’s purposes, which is to encourage all people to think about their own lives in terms of other people’s experiences (Ellis and Bochner, 1996)—in this case, mine. To do this, I will need to provide “structurally complex narratives, stories told in a temporal framework that rotates between past and present reflecting the nonlinear process of memory work—the curve of time” (Bochner, 2000). I will periodically read over evidence from my experiences as a teacher, draw or chart patterns, and identify themes. I will then check my understandings by triangulating

evidence as I identify multiple themes and patterns that appear in the curriculum implementation process. As is typical in action research, I will then share my findings with colleagues, district staff, and project supervisor (Kemmis & McTaggart, 1998). The results of my research will help me to provide recommendations based on my research questions, with the added benefit of improving my own teaching practice.

Significance

Following an autoethnographic line of inquiry, this project will evaluate the process of implementing curriculum that includes TKW in its design. Through my personal experiences using specific examples from the grade four science curriculum, I will describe the ongoing developmental progress of TKW in the classroom, and hope that the project will open up new perspectives and ways of understanding that foster deep student learning.

The findings will be a platform for new and experienced teachers searching for support strategies to integrate TKW into their practice. The project's recommendations will reflect a value-based, cross-cultural, and communicative inquiry approach to learning. As opposed to past practice where studying First Nations was one standalone unit, for example, this study will show how incorporating TKW themes throughout the school day will open up new perspectives and ways of understanding, using specific examples from grade four science curriculum.

Curricular change that has lasting results takes time. When school systems introduce teaching models that challenge the status quo, long-standing beliefs are questioned. However, by working towards immersing TKW throughout the curriculum and adopting an Indigenous lens of inquiry, educators will thus provide children with the tools they need to make strong, wise, and catalytic decisions. Additionally, it has the potential to ensure that no child experiences the alienation of cultural bias that I witnessed my cousin suffer in the classroom. This is not

yesterday's story, but rather an initiative aligned with the *Truth and Reconciliation Commission's* hope for a new beginning. It is my hope that my research goals linking TKW with daily teaching practice will provide educators with a foundation to making TKW connections meaningful in today's schools.

**Chapter Two: A Review of Literature
Related to Educators Transitioning to
Curriculum Embedded with Indigenous Ways of Knowing**

Introduction

This project examines the implications for educators who wish to transition their current teaching practice to one that infuses Indigenous worldviews and perspectives into their classrooms. To go forward with courage requires looking to those that have journeyed before. It is therefore necessary to understand the framework, known background information and the literature on embedding First Nations content and perspectives into the curriculum for the benefit of all learners. Based on the literature, there is a strong rationale which supports ongoing curricular connections between First Nations and western perspectives, but this shared history is not always a comfortable one. This literature review will provide the background for educators, discuss limitations, and guide the purpose for the project.

The chapter is divided into four sections. The first section sets the context within the history of curriculum implementation and system-wide educational transformation in British Columbia. The second section explores the rationale for integrating First Nations perspectives into British Columbia's education system. The third section explores the implementation of Traditional Knowledge and Wisdom (TKW) within the curriculum, and provides examples of successful pedagogical and assessment approaches. The fourth section examines assessment and the related literature to seek ways of formalizing Indigenous curricular inclusion. Connections between TKW and school belief and accountability agreements are thus studied.

To begin reviewing the literature I reflected upon the work of Lorna Williams, professor emeritus at the University of Victoria and one of my own professors in my graduate program. She has long challenged the educational system to “engage in teaching and learning from an Indigenous perspective, which is fundamentally different from previous educational experiences” (Tanaka et al., 2007, p. 99). William's works have been transformative for making TKW more

visible in the classroom. She argues that we need “a concerted and cooperative effort that creates transformational education by rejecting the ‘status quo,’” moving beyond “closing the gap discourse, and contribution to the well-being of Indigenous peoples and their communities” (Archibald, Lundy, Reynolds, & Williams, 2010, p. 2).

First Nations Curriculum in British Columbia Schools: Rationale

Studying past and current trends in today’s education system provides critical perspective and rationale for TKW in the classroom. The literature has indicated that the infusion of Indigenous concepts is ultimately based on a much bigger picture, one which paints the public as making incrementally more responsible social choices over time. The public has demanded that policy-makers do the same—especially in schools. As we have seen, over time there is widespread consensus about schools focusing on *the educated citizen*. This is because public schools in Canada, since the beginning, have intended to represent not only who we are as a people, but also our values, goals, dreams, and aspirations. Schools have become a melting pot of cultures, where all members of a community come together in the classroom to learn together. TKW initiatives are part of this vision. According to Johnson (1968), “a country’s education system is an inseparable part of its social, political and economic history” (p. 3). Public education, then, promotes a fundamental disposition in a democratic society. It attempts to provide education of good quality for every individual, regardless of race, gender, or socioeconomic status. This mirrors the values of Indigenous perspectives and its inclusion in the classroom can help decolonize education for all learners (Battiste, 2013). Including TKW in the classroom can thus be the driver for teachers to promote truly educated learners and citizens (Aikenhead, 2002; Bartlett et al., 2007; Cajete, 2000; Snively, 2006).

Another consideration however is democratic and influenced by free market business practices. Manzer (1994) states that the underlying principle of public education is political in its intent. Social studies in Canada, for example, revolves around themes of citizenship, perspectives, and relationships between people and the natural world. The purpose is to prepare children for their role as self-governing productive citizens, rather than as individuals bound to private interests. Further, the British Columbia Statement of Educational Policy Order states that the system's overarching goal is to develop the ability of students to "analyze critically, reason and think independently, and acquire basic learning skills and bodies of knowledge; to develop in students a lifelong appreciation of learning, a curiosity about the world around them and a capacity for creative thought and expression" (2016, p. 89). Schools provide the means to this end and a learning process in which the people can strive for social integration, cultural survival, and economic success.

This learning process is exactly what the Truth and Reconciliation Commission recommends by calling to action educators across the country to focus on valuing TKW in our schools. It recommends mandating educators to share best practice social studies methodologies to design and deliver "age-appropriate curriculum on residential schools, Treaties, and Indigenous peoples' historical and contemporary contributions to Canada" (2015, p. 7). It goes on to say that educators should develop students' cross-cultural understanding, empathy, and mutual respect. However, Battiste notes that "the education system has not yet ensured that non-Indigenous children develop an accurate understanding of the Indigenous peoples in Canada and their knowledge systems, much less who is their neighbor (2013, p. 32).

Despite the challenges Battiste presents, a similar consensus exists for the purpose of science education, as the provincial *Building Student Success* philosophy for science is "to

support the development of scientifically literate citizens” (2015, p. 1). In 2005, the province defined scientific literacy as “the ability to maintain a sense a wonder about the surrounding community and world, and to develop an ongoing connection of science-related attitudes, skills, and knowledge in order to become life-long learners through inquiry, problem-based learning, and decision-making” (p. 9). This is consistent with the 2015 *Building Student Success* definition, which asks the scientifically literate learner to show “an appreciation of evidence; an awareness of assumptions and a questioning of given information; a healthy, informed skepticism; a seeking of patterns, connections, and understanding; and a consideration of social, ethical, and environmental implications” (p. 2). Although TKW is not specifically mentioned, it is at least implied. Science and social studies clearly include in their rationales citizenship, communication with others, and an understanding of the world around us. But is implied inclusion enough?

Despite this, a common educational theme in Canada can be defined as the progressive promotion of student attitudes that help them become responsible citizens. Calabrese points out that “schools are often expected to demonstrate values such as justice, integrity, equity, full participation, inclusion, and fairness” (1991, p. 15). These are the very same values as those presented in most social justice and First Nations education programs. Barlow and Robertson (1994) take the matter even further, arguing that a school is not simply “a building where teachers come to teach” (p. 112). According to Johnson (1968), if we are to educate all our citizens for the 21st century, then schools viewed as static entities, or future business opportunities, will have to go. Schools must reflect the world that children live in, and the goals that the public has set out:

All civilized societies strive for a common goal, including not only material but also intellectual and moral elements. If the federal government is to renounce its right to associate itself with other social groups, public and private, in the general education of Canadian citizens, it denies its intellectual and moral purpose, the complete conception of the common good is lost, and Canada as such becomes a materialistic society (Royal Commission on Arts, Letter and Sciences, as cited in Johnson, 1968, p. 126).

Governments and corporations are realizing that the public demands socially and environmentally responsible products and programs. The push towards global awareness, health and environmental literacy, and making communication, collaboration, creativity and innovation is as essential as curricular skills such as reading, writing, and math (P21, 2015). Indeed, the Province of British Columbia has a renewed focus on including Indigenous content in the curriculum. The 2016 *Building Student Success* framework for science reports that there is international consensus on the validity of including TKW into educational programs. Even two decades ago, Snively (1995) pointed out that the curriculum at the time referenced the 1997 World Commission on Environment and Development and the resulting Brundtland Commission report entitled *Our Common Future*. This report demonstrated the need to include in classrooms discussions on sustainable forest practices in Clayoquot Sound, the United Nations' Convention on Biological Diversity, Agenda 21, and the 1992 Earth Summit at Rio de Janeiro—all international examples of recognizing TKW (Our Common Future, 2005). The time has come for First Nations education to come to the forefront of instructional design. However, according to Saul (1995), the problem education faces is not one of a technical nature, but one of commitment to education being about common, higher purpose. To be accountable to the public, educators

must somehow inform them of the current educational reforms and the consequences of continuing to resist change or to concede to budgetary or political interests.

Public Education's Purpose as a way of Promoting TKW

Public education has not been intended to serve the particular priorities of certain parent groups, teachers or school district stakeholders. Public education's stated intent is to balance the interests of all of its citizens to create learners with the knowledge, skills, and abilities to contribute to a healthy society (Ministry of Education, *Service Plan*, 2016). Yet we remain focused on short-term year-to-year budgetary realities and on the even shorter-term day-to-day management needs of our students. As journalist Russel Searle correctly states: "It's time we put politics behind us, and students and their education in front—after all, they're our most precious resource and deserve nothing less than our best efforts" (1998 p. A17). Putting children first by allowing them to explore the world around them is not only the right thing to do, it is the smart thing to do, and can only be done through smart curriculum choices—ones where course content is looked at as a living entity, not a static one. Based on the literature, the study of First Nations topics in schools should not be one guided by logistics or finances, but one guided by ethics. It is ethical to place First Nations integrated education at the forefront of modern-day educational design.

For TKW in the classroom to be fully valued, the traditional mindset that First Nations education is "a fringe subject of study" must be overcome (R. Hunt, personal communication, February 2016). The infusion of First Nations perspectives is very recent, with The Truth and Reconciliation Commission's *Call to Action* only one year old. Society faces serious human, environmental, and social problems brought on largely by the rise of large private corporations and government institutions. More and more, school district managers and policy-makers, as

well as individual school administrators, are realizing that the public demands that they conduct their affairs in ways that improve, solve, or at the very least minimize some of our social and environmental problems. How, then, can Indigenous ways of knowing gain exposure when the curriculum is already full?

Integrating First Nations Curricula

Rather than recommend educators focus on one framework to support quality instruction, Chickering and Gamson (1987) proposed a combination of approaches based on a meta-analysis of research on effective pedagogy. Their research omitted considering traditional Indigenous teaching methodologies and perspectives, but it is interesting to note that their findings match teaching methods used by First Nations societies for millennia. Chickering and Gamson showed that educators need to:

- focus on regular, frequent student contact in and outside of class time to keep students intellectually motivated and connected to their learning;
- approach teaching and learning as a social, team effort;
- make learning active through speaking, listening, reading, writing, and creating in order to make learning *their* learning;
- provide frequent performance feedback for learning that gives students specific targets they can apply immediately;
- maximize learning time and encourage time management amongst students;
- model and expect high expectations to value students' capacities;
- accept that students have many talents and should be given opportunities to show their abilities in ways that work for them. (1987)

The literature also points to other advantages of such interdisciplinary, universal instructional design, especially in regards to cross-cultural perspectives in education. Peter Senge's research (2000) on "fragmented knowledge" demonstrates that life presents itself to us as a whole. This research supports Chickering and Gamson's teaching approach, but more importantly Indigenous worldviews and perspectives, and further confirms why we must teach using their model that showcases life's interdependencies. This is, and has always been, a TKW tenet.

Challenging problems in life are often daunting because they have many interdependent facts. Yet our schools are still designed around providing instruction, according to Senge, through separate categories rather than interdependent ones: "Over here we have literature, which is separate from mathematics, which is distinct from science. We must recognize interrelationships instead of telling students that what matters most is the size of their narrow pile of knowledge" (2000, p. 47). Of all school subjects, Indigenous education is poised to do an excellent job integrating into the curriculum. This is probably due to the fact that Indigenous education is still a relatively new field of study being introduced to the system at the same time as the new curriculum. Educators are thus already rethinking their traditional ways of teaching and incorporating into their practice modern advances in pedagogy. This provides an effective launching pad for TKW to fully emerge in today's classroom.

TKW Teaching Approaches through Integrated Instruction

In *Connecting the Curriculum through Interdisciplinary Instruction* (John Lounsbury, Ed.), Mary A. Davies (1992) gives considerable insight into effective interdisciplinary approaches. Her research indicated that educators must adhere to the principle that students enjoy units more if they perceive a direct relevance to their lives. This results in a "learner world" full

of connections between content, self, and community. Davies (1992) says that students respond favourably to integrated instruction and that choice in topics, group cooperation, sharing, and community involvement all reinforce learning.

One issue that can hinder integrated instruction is when teachers prioritize certain subjects over others. For several decades, for example, researchers and leaders in the field of science education have called elementary science a “vanishing species” (Rowe 1980). Daily instructional time is down, fewer dollars are allocated towards science education, and many elementary teachers say that science has to compete for space among increased topics of study in an already full teaching schedule (Chiappetta & Koballa, 2014). This creates problems for teachers, who often lack the training and the resources to deal with the overload of teaching requirements. This brings us to the advantage of imbedding TKW into the so-called priority subjects of reading, writing, and math: in times of funding uncertainties, it prevents funding cuts to Indigenous Education, a fate that befell some social education programs during the 1970s and 1980s (Disinger & Schoenfeld, 1987).

The literature however fails to point out several objections to integrating Indigenous Education into programs such as language arts. In an informal survey at a provincial conference I recently attended, some teachers said that language arts programs, for example, are not ideally suited to include Indigenous Education, and that TKW dilutes core subjects such as reading writing and math. Some said that teachers already have enough to do. I argue that teachers have the knowledge, resources, and power to include First Nations education—without compromising student success. Teachers have a high level of education and specialized training. They use their expertise to solve problems for kids every day. They provide healthy working environments, stability, and the safety, order, well-being, and learned guidance for children. They are

committed to working for the public good and they engage in ongoing education to ensure that their knowledge is current and that acceptable standards of practice are maintained. These same professionals are primed to recognize that including Indigenous learning through science is no different (Kanu, 2011). Is looking at the narrative story, and the wonder of reading, not the perfect environment to address Indigenous science with learners?

An additional dimension that was shared during the 2016 British Columbia Principals' and Vice-Principals' Association's annual Short Course conference was that language arts curricula is focusing more on developing new strategies to entice boys to read. Educators differ on why boys' reading lags, and there is no consensus on how much genetics, environment and culture are responsible for the gap (Strauss, 2005). The only consensus is that there is a problem. Educators are recognising that reading is not just about picture books, novels, and poetry: "A lot of teachers think of reading as reading stories," says Lee Galda, professor of children's literature at the University of Minnesota. "In fact, a lot of boys, and not just boys, like nonfiction. But we keep concentrating on novels or short stories and sometimes don't think of reading nonfiction as reading. But in fact it is, and it is extremely important" (as cited in Strauss, 2005, p. A15). First Nations texts can be written at any length and at any difficulty level. They frequently include "hands-on, feet wet" activities. Support for readers can be provided by pictures, definitions, and most importantly, experiential formative and summative activities. These are all activities that adapt well to the learning styles of both boys and girls.

Integrating First Nations Curriculum: Examples and Approaches

British Columbia is increasingly committed to including First Nations themes into the curriculum. Out of that first company school in Victoria in 1865 has grown a system of more place-based learning, stewardship knowledge, and environmental education than ever before.

However, the main findings from the readings demonstrate that educators can still misplace curricular intent by personal bias and experiences (Battiste, 2013). And, there must be a balance between what is mandated provincially and what is relevant to local learners. Therefore, despite the many advantages of having locally developed curriculum, we must approach curriculum change and the infusion of Indigenous knowledge with a blend of wonder, and caution.

First, we must avoid taking the traditional, purely rational and objective approach to science through the scientific method, for Western science is a cultural entity itself through which its “way of knowing” represents assimilation into western culture (Aikenhead, 1996). Just as western science has the term *scientific method*, “Indigenous method” could be coined to provide students and educators with a new learning framework. This would perhaps help equalize perspectives and spark discussion.

Williams (2007) also argues that the topics an educator chooses to teach can negatively bias learning against TKW. Instead of teaching a unit on 2025 robots, reframing that unit into studying place-based survival technologies past and present is a strategy that can meet the same learning outcomes. Modern western science and technology does not favor TKW, but if the topic of study were on sustainable communities or inserting values into scientific decision making, western modern science would be disadvantaged. However, the point is “not to establish that one form of science is superior to another, but to develop scientific thinking and to enable students to examine their own assumptions” (Williams, 2007). Based on this premise, a cultural, participatory approach to the teaching of Indigenous and environmental ways of knowing must be taken: “If the living, experiencing being is an intimate participant in the activities of the world to which it belongs, then knowledge is a mode of participation” (Dewey, 1916, p. 393).

Given the resurgence in the public eye for infusing First Nations perspectives into education, the field has benefited from the most recent advances in instructional design. Many forms of participatory, subject-integrated Indigenous Education curricula existed even before the 2016 curriculum and *Aboriginal Worldviews and Perspectives in the Classroom* resource. Books like *Teaching about Climate Change* by Tim Grant and Gail Littlejohn (Eds.) contain hands-on, minds-on teaching strategies that engage students in critical thinking skills. Camille Baggett's research project on wetlands (2003) showed that students as young as seven have an increased knowledge and understanding when exposed to local experiential education they can connect with. The Ministry's *Aboriginal Worldviews and Perspectives in the Classroom* is a made-in-BC visionary treasure trove of ideas for responsive Indigenous Education for all learners. The Capital Regional District's *Parks and 3R School Outreach* programs, along with Peninsula Streams educational programs, provide interactive, field-based environmental workshops that now include Indigenous perspectives. Children are excited, involved, and on task. The question that arises, then, is why not all outside agencies are on board.

In May 2016, for example, the University of Victoria's *Science Venture* program visited my school to provide experiential learning workshops that met prescribed Ministry of Education outcomes for elementary science. Without explaining the learning objectives to the children, or that the children were going to study using an established colonial world view, these workshops engaged children in rocket building, kite making, bridge engineering, and space exploration. All were learning adventures that encouraged students to "think like a scientist," and to apply "logic, reasoning, and process" to their discoveries. The program devoted formal instructional time to teaching the scientific method. When asked why this was the case, program coordinators gave no reason. Yet in their paper *Transcending cultural borders: implications for science teaching*

(1999), Jegede and Aikenhead describe the effects of teaching only an assimilated worldview on a child, especially when there may be students in the room who are then forced to abandon or marginalize their own life-world concepts, replacing them with “new”, “scientific” ways of conceptualizing. By ignoring other knowledge systems which some students may have received, and not even asking students if they have other perspectives, this assimilative teaching style can “alienate students from science” (Jegede & Aikenhead, 1999, p. 47)

The literature suggests that although the provincial government is including in the new curriculum Indigenous Knowledge, , there is little responsibility as to whether Indigenous Knowledge is actually taking place in the classroom. It could also be argued that some outside partner groups, such as Science Venture, ArtStarts performing groups, Stream Keepers, CRD Nature programs, and the Royal British Columbia Museum, are looking at the curriculum and either being complacent or staying with their “tried and true” model. The literature also demonstrated that the new curriculum resource has not communicated to all curriculum planners the new philosophy of including Indigenous instructional design. To avoid this, the Ministry of Education should require schools to actively communicate to guest speaker, on any subject area, the First Peoples Principles of Learning, and that any proposed learning experience needs to incorporate the values, local context, and learning styles of the student audience. As well, suggested cross-curricular teaching methods, such as personalized learning through student flexibility and choice, and inquiry learning, where instruction is based on student curiosity and questioning, are often quite different from what teachers are used to, and teachers are reluctant to go out of their traditional comfort zones. One strategy to help educators overcome this is for Indigenous scholars and practitioners of TKW, who are authoritative primary sources, to bring TKW into the classroom as the master teacher (Kimmerer, 2002). As well, Snively (1995)

recommends a step-by-step process model for producing TKW learning assignments that include western science and indigenous perspectives, a model which develops deep thinking, personal connections, and self-reflections of the learners 'own worldview to gain a more complete understanding of the world around them (APPENDIX E). Teachers can then explore TKW from a variety of student and subject perspectives, integrated through all curricular areas.

So how do we increase the exposure of Indigenous education in our science classroom? In *Exposing the Environment through Children's Literature* (1992), Helen Smith argued that exposing children to a sense of place through literature is one such way, and literature is a medium elementary educators are very comfortable with. Through well-written, attractively illustrated books, children receive a double advantage in their learning experience. Smith (1992) ascertains that place-based learning should be introduced throughout the entire school curriculum and so, too, with Indigenous children's literature that honours the source. It should be noted that books should be selected that are culturally approved or written and that do not appropriate indigenous knowledge.

This inclusion of the Indigenous voice through literature should be built into discussions and activities related to books rather than being treated as a separate subject. In this way, educators will not be overburdened and the children will begin to see environmental concerns as a regular part of everything they do" (p. 1). And go farther and say what they are, what they have been, and what they can be Smith also suggests many books that explore a sense of place and connection through children's literature (1992). For example, the story of *The River* by David Bellamy centres around the creatures that live in and on the banks of a river and what happens to them when people intrude on their environment. Several follow-up activities, such as collecting rainwater, cleaning a local stream, and demonstrating pollution run-off give children the

opportunity to obtain a deeper connection with water as life, how their interactions with water impacts themselves and their community, physically and spiritually. Violet Poitras, Cree Elder of the Paul First Nation in Wabamun, Alberta, said it best: “Once we understand each other a bit more clearly, we can tell the rest of the people, this is what’s happening to our water and how to take care of it - because it’s taken care of us up till now” (Native Counselling Services of Alberta, 2016).

As I learned from Kwag’ul hereditary chief Calvin Hunt and Alert Bay elder Vera Newman, like all creation water came about from what came before it. With this in mind invitations to elders to share a water ceremony with students may enable the children to deeper appreciate the significance of water for Indigenous communities. Water ceremonies play an essential role in Indigenous communities and as such are a right under the UN Declaration of the Rights of Indigenous Peoples, “Water is the lifeblood of the Earth and we as First Nations recognize water as a sacred gift that connects all life.” Teaching science in a way that honours TKW must include aspects such as culture and spirituality that are not thought of as scientific under the western scientific model, but are essential to Indigenous ways of being.

There are many other advantages of using literacy as one way to bring Indigenous voices to science. In *Science, Language and Links*, Wells noted that writing is one of the ways children learn in science (1998). It is readily accepted that young children “find it easier to assimilate new facts when they are presented within the framework of a story” (Wells, 1986, p. 42).

TKW connections could also be reinforced through the use of poetry. When students use poetry to express their feelings about the environment, they learn that nature can be a source of inspiration. Dave Bouchard’s *The Elders Are Watching*, Sean O-Huigin’s *Atmosfear*, and Jennifer Curry’s *The Last Rabbit* are excellent poetry resources with TKW themes. In *The Elders*

are Watching, students investigate ways to conserve the environment—for example, through reducing, reusing and recycling. They develop and implement a plan to motivate others to conserve and although recycling does not solve the environmental problems introduced by western science, this type of poetry serves as an entry point for deeper discussions, ones where children are more likely to acquire a growing appreciation for and understanding of current environmental concerns and their histories. Opportunities for children to demonstrate concern and care for the environment may begin in the classroom, move to the community, and then to the world at large (Lake, 1993, p. 56).

According to Jo-Anne Lake, in *Imagine: A Literature-based approach to Science*, science-focused literature introduces science concepts through contextualized language and illustrations. For example, Yoshi's *Who's Hiding Here?* introduces the concept of animals adapting to their environment to young children through rhyming text and illustrations. In this book, animal camouflage is explored in the text and reinforced through die-cut pages exposing the hidden animals. Instantly, children are able to grasp the meaning of camouflage and thus traditional ways of knowing the environment (p. 15). The environment is not an abstract idea, but becomes a real, living, breathing entity and one that is all around children in their everyday lives. Reading and listening to stories takes on less of a lecturing perspective and more learning with the child at the centre of the story. Literature is story and story centres sharing and learning within Indigenous communities.

Lake also observed that an integrated reading and writing approach helps make associations and draw relationships between the facts children are studying. The advantages of this approach, according to Lake, are numerous.

Science-based literature:

- connects related issues, topics, and sub-topics;
- provides teachers with an opportunity to build knowledge quickly;
- provides multi-sensory experiences;
- provides motivation to learn through hands-on manipulatives;
- is more easily understood than science texts;
- conveys much more meaning through accessible illustrations;
- introduces hands-on instruments through text and illustrations;
- serves as a catalyst to link observing, classifying, seriating, communicating, measuring, inferring, predicting, hypothesizing, experimenting, controlling variables, interpreting, making models, and manipulating equipment and materials;
- ensures higher student success through the use of a broad range of children's books as opposed to a single science text. (pp. 15-24)

As Katherine Paterson eloquently states in *Stories in the Classroom* (Barton and Booth, 1990):

I know as you do that words can be used for evil as well as good. But we must take that risk. We must try as best we are able to give our children words that will shape their minds so they can make those miraculous leaps of imagination that no sinless computer will ever be able to rival—those connections in science, in art, in the living of this life that will reveal the little truths. For it is these little truths that point to the awesome, unknowable unity, the Truth, which holds us together and makes us members of one another (pp. 15-16)

Indigenous Perspectives within Assessment and Evaluation

Most education resources contain suggested assessment strategies that may or may not align with provincial standards, let alone Indigenous assessment techniques (Little Bear,

2009, Kanu, 2011). It is too time-consuming for many educators to create meaningful assessments that align with leveled provincial standards, and they would therefore rather have access to resources that already match provincial assessment performance standards. The research of Carole Dagenais, spring 2005 Association of Canadian Immersion Teachers conference keynote speaker, indicates that teachers want to find efficient ways to teach and assess the entire curriculum (personal communication, April 22, 2005). Dagenais states that science and social studies top the list of curricular areas that are most often set aside. Dagenais also states that teachers need the ability to quickly describe a student's performance level as either not yet meeting expectations, minimally meeting expectations, fully meeting expectations, or exceeding expectations. When evaluating students' perspectives on Indigenous worldviews, educators must balance Ministry of Education and school board policies, and add Indigenous assessments based on The First Peoples Principles of Learning (Appendix B), such as observation, learning by doing, mastery learning, experiential learning, and self-assessments. Resources must use mandated curriculum as a medium to gain wide acceptance amongst teachers. By having TKW resources that have accountable assessment strategies, TKW will be more easily accepted by teachers in school districts around BC.

Most experienced teachers will proclaim that they know a great deal about their students in terms of what the students know, how they perform in different situations, their attitudes and beliefs, and their various levels of skill attainment. The large-scale challenge, then, is to transpose this rich evidence about students' understanding, problem-solving processes, and attitudes and beliefs into meaningful data in an era of standardized testing. British Columbia assessment priorities, such as the Foundations Skills Assessments administered in grades four and seven, need to be rebalanced so that classroom-based evidence is as respected as the

statistical number crunching based on such testing. The Ministry of Education is ending FSA in 2017, and design trialing its replacement in the fall of 2017. The new model will include more TKW and reflect real classroom social learning such as collaborative activities and self-reflection.

When it comes to assessment, however, the disadvantages of conventional testing methods are well known, and do not match TKW practices. They have led to an increase in dropout rates and declines in graduation rates, especially among minorities (Amrein & Berliner, 2002). “Converting four out of five to 80 percent or three out of four to a grade of B can destroy the entire purpose of assessment” (Kulm, 1994, p. 99). Kulm explains that directly translating lesson delivery to tests to grades focuses the attention on the end product—the grade—and not the purpose of education: the learning process itself. In a worldwide review of 250 articles on assessment, Black and William found evidence that student-involved assessment overall has positive effects, especially on low achievers (1998, p.141). Even more interesting is the fact that the work of Meisels, Atkins-Burnett, Xue, and Bickel (2003) revealed how student-involved assessment, including student-teacher interviewing and documentation projects, yielded gains on standardized test performance. In sum, the evidence reveals that non-standard assessment tools align well with TKW philosophies and can indeed fit into meaningful strategies to guide school accountability.

Aligning Traditional Ways of Knowing with School Beliefs, Accountability, and Goals

All schools in British Columbia are mandated by law to have accountability agreements and School Planning Councils that include community stakeholders. They ensure individual school accountability and long-term goal setting. In 2015, BC’s Ministry of Education has also been working to improve each district’s reporting requirements of student learning. *The*

Framework for Enhancing Student Learning requires districts to submit school and district achievement plans annually. A survey of the Saanich School District's individual school plans shows that schools are developing goals prescribing reading, writing, numeracy, and social responsibility, but not explicitly including TKW. For 2016, Saanich will provide to the Ministry of Education student achievement in literacy, numeracy, student engagement, and graduation rates (Framework for Enhancing Student Learning, 2016).

In order to examine how TKW fits into school districts' commitment to Indigenous accountability agreements and socially responsible education, one must ask the basic question about what "public responsibility" really means. In their book on corporate, political, and public responsibility, Keith Davis and Robert Blomstrom (1975) describe the term as "the obligation of decision makers to take actions which protect and improve the welfare of society as a whole along with their own interests" (p. 39). This definition implies that schools have responsibilities to society above and beyond their traditional duties of planning instruction, teaching, managing, and assessing students, and communicating with parents. In other words, schools have an "obligation to pursue those policies, make those decisions or to follow those lines of action that are desirable in terms of the objectives and values of society" (Steiner, Miner & Gray, 1986, p. 38).

Society is indeed demanding socially responsible and environmentally aware citizens who are in touch with their local community and the world around them. However, just like the traditional territory acknowledgement as an "agenda item", many principals, superintendents, and school trustees consider meeting TKW responsibilities as a static requirement—something that has to be looked after—rather than as a dynamic element in modern instructional design (Hayek, 1993). Therefore, the idea of making TKW a priority continues to be a subject of debate.

What is deemed to be socially responsible at one given point in time may not be considered to be at another. Is the “socially responsible” acknowledgement statement of traditional territories meaningful enough, and something that “has to be taken care of” (Jason Price, personal interview, March 17, 2016)? Where are educators on the “acceptance line” of Indigenous Education?

This generalised justification of TKW suggests a compelling argument for a school's accountability agreement to be involved in TKW—namely that it is in the school's long-range self-interest to educate its children to better understand the cultural mosaic of our nation, and to internalize the importance of the environment. In the past, some social problems arose in the first place in schools who disregarded such issues (Day, 1992, p. 211). Schools should thus assume a role that enhances their involvement in ethical, social, and environmental issues in order to avoid past problems.

If schools are to prosper in the future, they must be accountable organisations that are highly regarded by political parties *and* by the public. For example, if the media discovers that a school has been involved in environmentally destructive behaviour of some kind, the school in question will probably lose much of its former integrity. Thus, if schools do not act in an environmentally responsible fashion, they will lose their legitimacy.

This "long-range self-interest" view means that if schools are to have a healthy climate in which to exist in the future, and if they are to educate children for the world they live in today, they must take actions now that will ensure their longer-term viability. Perhaps the reasoning behind this is that society's expectations are such that if schools do not respond to Indigenous Education on their own, their role may be altered in more intrusive ways by the government, or

by reactive public outcry. To the extent that schools police themselves on a local level, with self-disciplined guidelines, future government intervention can be somewhat forestalled.

Public education, in other words, must be responsive to society's expectations over the long term if they are to survive in their present form: "In the long run, those who do not use power in a manner which society considers responsible will tend to lose it" (Davis & Blomstrom, 1971, p. 95). Davis and Blomstrom argue that the position of schools could hardly be expected to continue unless they assume social responsibilities. Some schools might argue that "it is difficult to anticipate what environmentally and socially responsible issues public opinion will demand next" (Monson, 1973, p. 111). This is a valid objection, but it does not override the Davis and Blomstrom assumption.

Finally, the "proacting is better than reacting" view holds that if schools proact—i.e., anticipate and initiate—this is a more practical and less costly posture than that of simply reacting to what has been ignored (Hartford, 1994). For example, agrologists, soil scientists, and environmental waste managers know all too well that it is much wiser not to allow environmental degradation to occur in the first place than to attempt to clean up rivers, lakes, and contaminated sites that were neglected for years. This analogy holds true for schools. Schools no longer simply educate children. The role of the school is now multi-disciplinary, encompassing many more facets of educational, economic, and political work than ever before. Schools must now make TWK an explicit priority, and, at the same time, put forth their best public image driven by a high moral standard of practice.

There are, however, those who argue that schools should concentrate solely on continuing to "teach what works" rather than on new approaches to issues of social responsibility. One such view holds that social matters are not the concern of schools and that government, legislation,

and the free market system should resolve these problems (Friedman, 1962). However, as has been previously shown by Searle (1998), children must come first. School district officials must perform their duties "while conforming to the basic rules of society, both those embodied in the law and those embodied in ethical customs that the public demands" (Friedman, 1962, p. 33). Friedman's viewpoint supports the argument in favour of the value of environmental education in today's schools.

Most members of the public believe that schools should indeed be involved in issues of infusing Indigenous Education. The debate usually centres on the *kinds* and *degrees* of such infusion rather than on the basic question of whether the school has it or not (Tillis Frederic J., cited in Day, 1992). Schools must therefore strive for optimal standards of practice within their working environment. They must be involved in issues of cultural and environmental responsibility to the extent that they do not jeopardize or domineer the overall program. In return, the school's involvement in TKW will provide the school with integrity and unity. Recently, for example, my grade three and four class released salmon fry into a local creek. These salmon had been raised from eggs in our classroom, and were showcased around the school. In years past, the Salmon in the Classroom Program was strictly science, whereas now, place-based connections and the infusion of TKW is a natural component. In three years' time, my students will be going back to the stream to see their salmon spawn, a circle of learning that TKW has triumphed for centuries. Indeed, the sense of wonder and curiosity on that trip was immeasurable. Like the salmon, First Nations education does indeed have a place in our schools.

Summary and Next Steps

Teachers are involved in one of the most complex, demanding, and important professions in the world—a profession where changes emerge in the blink of an eye. It is clear that teaching

TKW is a balancing act—a challenge of meeting the above goals in an era where fulfilling all curricular outcomes is a requirement. The literature suggests that in today’s learning environment, society does place value on First Nations education, but its implementation at the ground level as an equal perspective is lagging, with inadequate accountability processes in place. The main conclusion that can be drawn from the literature is that the current teaching methodologies and teacher resources in the fields of environmental and First Nations education do indeed do a satisfactory job connecting the topics of study with children, but still have difficulty gaining acceptance with mainstream teachers. Curriculum change is always difficult. First Nations education, however, is perfectly poised to create meaningful and powerful learning environments by bringing TKW into the existing priorities of reading, writing and social responsibility. For a successful program, teachers must have access to easily available, accountable, integrated resources—innovative, yet familiar with what they know. In this way, teachers and students will be actively engaged in a challenging, relevant, timely, interesting, and assessable program that connects students with past experiences and engages them in constructing active and new understanding. This is what powerful learning is all about.

Chapter Three—Methodology

“Everything on the earth has a purpose, every disease an herb to cure it, and every person a mission. This is the Indian theory of existence.”

Mourning Dove

Autoethnography—A Teacher’s perspective

My qualitative study is based on an autoethnographic mixed methods approach. Autoethnography is defined as “a research method in which the researcher’s personal experiences form both the starting point and the central material of study” (Uotinen, 2011, p. 1308). Similar to student inquiry learning introduced in the 2015 *Building Student Success* new curriculum framework, autoethnography uses writing about the self to make visible aspects of culture (Reed-Danahay, 1997). Student inquiry learning encourages students to ask deep questions, self-reflect, and thus build capacity, which brings aspects of students’ lives and cultures apparent in the classroom; in the same way, autoethnography exposes culture through critical analysis of personal experience. To accomplish this, I used self-observation, reflective notes that accompanied my teaching plans, journaling, and mindful place-based reflection, during which, as the elders of Alert Bay taught me, I immersed myself in nature to help unify my mind and place. This allowed me to create critical self-reflexive autoethnographic moments that sparked new discoveries about myself and education with the goal of modeling a learning space “where others might see themselves” (Pelias, 2005, p. 419). I knew that if I were to ask my own

students to think deeply about themselves, the choices they make, and personal and community connections to their own lives, then it was imperative that I do the same.

Self-reflection has long played a role in teacher education, but autoethnography as a research method is a relatively new form of educational research, with few studies examining the theory of this approach and the range of writing styles it can employ (McDonough, 2015). What is established, however, is that ethnographic research and writing seeks to describe and systematically analyze and critique personal experience in order to understand cultural experience (Ellis, Adams, & Bochner, 2011). It acknowledges and values the researcher's relationship with others, narrows the researcher's focus by defining the "meaning of the researcher's struggle," then "guides them to figure out what to do" (Adams, 2015, p. 9).

Qualitative ethnographic inquiry lends itself perfectly to this type of introspective research because it allows the researcher to fully participate in research work in a familiar context. It "provides an in-depth understanding of people's experiences, perspectives and histories in the context of their personal circumstances or settings" (Spencer, 2004, p.17). Creswell's (1998) book, *Qualitative Inquiry and Research Design*, emphasizes that the close relationship of the researcher to the subject, the value-laden aspect of inquiry, and the personal approach to writing the narrative are all characteristics of a good qualitative study and autoethnographic research (p. 73).

The Gift of Sharing the Autoethnographic Story

As I reflected upon these established definitions of ethnography, I thought back to my graduate coursework in 2004, when I traveled to Hanson Island in the Broughton Archipelago with members of my cohort and Kwakiutl elders from Alert Bay, BC. I remember 'Namgis elder Vera Newman telling me that stories are sacred. In her people's culture, stories were told long

into the night, particularly during the winter storms, as a way of keeping these stories secret amongst trusted ones. Following this, it ironically became time for me to write during the bright days of summer, with my own secrets to be disseminated to an open audience, Allied or not. Although I had a personal story to share, and one with value, I was nevertheless struck with concerns that my ethnographic voice may not be authentic. I questioned whether an ethnographic voice was “real research”. Yet I knew that my story and experiences had shaped and shifted my identity as an educator to make me a stronger advocate for Indigenous learning. Those who have traveled this path before me left me with words of inspiration and reassurance:

If you can increase the understating of an issue or a circumstance, illuminate one experience, portray one person’s story in a new light, you have helped others to understand the social world a little better. This is what research is all about.

(Kirby & Mckenna, 1989, p. 96)

Narrowing the definition

As I worked to make connections between the classroom experience and TKW, I further discovered that ethnographic research allowed me not only to study the subject, but also to study myself and my place within the object of study (Razack, 1998). As an ethnographic project, this research is about my teaching experience and critical analysis of how my life experiences and current practice influences student experiences in relation to social justice, a changing curriculum, and the presence, or lack thereof, of TKW in the classroom. Through this, I created what Spry (2001) calls a “self-narrative that critiques the situatedness of self with others in social contexts” (p. 710). Further guiding me through the ethnographic process were the key tenets of autoethnography as outlined by Carolyn Ellis:

Autoethnography is not simply a way of knowing about the world; it has become a way of being in the world, one that requires living consciously, emotionally, reflexively. It asks that we not only examine our lives but also consider how and why we think, act, and feel as we do. Autoethnography requires that we observe ourselves observing, that we interrogate what we think and believe, and that we challenge our own assumptions, asking over and over if we have penetrated as many layers of our own defenses, fears, and insecurities as our project requires. It asks that we rethink and revise our lives, making conscious decisions about who and how we want to be. And in the process, it seeks a story that is hopeful, where authors ultimately write themselves as survivors of the story they are living. (in Jones, 2013, p. 10)

New Discoveries through Autoethnography

Armed with these new understandings, I came to value the way autoethnography included and valued my “living story” as a valid form of academic writing, which can often present as being stripped of humanness and difficult for educators to access. My goal was not to hide behind walls of inaccessible “edu-speak”, but to be transparent, using a relational form of communication to foster a deeper connection with my topic. I soon realized that this style of writing required taking risks, but by doing so provided a necessary grounding in self to inspire creative results.

Throughout my self-exploration, I discovered that autoethnography bridged the gap and opened dialogue between professional experience and the personal lives of the researcher, allowing me to explore the historical context and my own circumstances that have led me to be

the educator I am today. This model allowed me to further develop my growing Allyship with First Nations peoples in Canada from my position of privilege and power as an established white male teacher. My social position, location, ability, class, sexuality, race, and wealth all influence, subconsciously or not, my view of the world; and an autoethnographic lens provided the needed structure to reflect upon these facts.

Using mainly narrative self-study analytical autoethnographic writing developed by Anderson (2006) as the medium for study, I was able to examine aspects of my personal and professional life, how I saw my role and its effects in the classrooms, and what it was like to be an educator in this age of educational transformation. I wanted to share my experiences and transform them into a method whereby others may also explore their professional and personal lives and how they interact with the construction of “teacher” within Indigenized classrooms. As such, I focused on my personal and professional experiences related to my journey transitioning from a “not a chance” mindset to “one foot in” to an Ally teacher. I wanted my story to fulfill one of autoethnography’s purposes, which is to encourage all people to think about their own lives in terms of other people’s experiences (Ellis & Bochner, 1996)—in this case, mine. To do this, I needed to provide “structurally complex narratives, stories told in a temporal framework that rotates between past and present reflecting the nonlinear process of memory work—the curve of time” (Bochner, 2000, p. 270). With that in mind, I systematically read over my own journal notes from my experiences as a teacher in order to draw or chart patterns and identify themes. I then checked my understandings to find evidence of multiple themes and patterns that appeared in the new curriculum.

Looking to the future, I knew that an Indigenized classroom meant creating community, culture, a strong student sense of place, and student appreciation of TKW and storytelling. I

began to see that in the absence of an author visit to talk about salmon, cedars, and berries, as a class we should go to a stream and try to experience the author's message ourselves. I began to see that an Indigenized classroom was indeed equal to anything else in the curriculum, to be studied throughout the curriculum as opposed to a discrete stand-alone unit. Authentic literature samples and embedding story, memory, and history into learning would allow students to discover who they are and what they believe, just as the new curriculum emphasizes.

Links to Action Research

Through this approach I also drew elements from action research and the work of Kurt Lewin (1948), as I felt that autoethnography and action research both involve self-reflective inquiry. Both include critical analysis, but action research also requires looking forward to improve current practice while reflecting on the researcher's experience. Action research in itself is a journey of learning, one characterized by collective curiosity and connection with others; and it is particularly relevant to my work as a teacher and as a researcher. It generates new understandings, including positive differences that we can all make in our communities.

Another reason to include the action research framework is because it aligns itself with the *Building Student Success* curriculum. Through the themes of big ideas, inquiry learning, and change, as examined through the filters of self, others, and community, I knew that my research and self-analysis would allow me to further my successes as a teacher and hopefully inspire others to do the same. Through autoethnography and Allyship, I felt I could create more successes for all learners in our community; engage in collective inquiry around how Indigenized classrooms can make a difference; and support, sustain and enhance a community of constant learning.

Challenges linking mixed method autoethnography with teaching

One problem I immediately identified with this mixed method approach is that although I am studying the self, I needed to be acutely aware of my surroundings and the teaching environment in which I worked. Markus and Saka (2006) discuss how schools can easily decentralize the “I” in autoethnography, and Schatzki (2002) also explores the idea of self being composed relationally amongst others. Schatzki presents the idea that the self is easily displaced as the primary site of experience and meaning, and needs to be considered by the researcher. This poses challenges when teaching is a professional landscape filled with the immediate needs of children, and ever-changing, fluid demands based in the moment, with no time for reflection. By scheduling reflection time and making it an equal priority with other demands, I hoped to minimize this risk.

Final Thoughts

During my residency in 2004 on the traditional lands of the Kwakiutl peoples, I learned the elders’ traditional belief that for children to be successful in the future, they needed to know where they came from. This construct can be applied to all children in our classrooms if we respect and honour our own origins, but it also applies equally to my ethnographic research, for where I come from influences my research and future as an educator as well.

Over the process of thinking and writing autoethnographically, I found myself becoming more and more vulnerable with myself, examining what I feared as a professional. A child I could not reach. A parent struggling with their own school experiences. Or even questioning the value of my chosen profession. A vulnerable mindset, like risk-taking in teaching, could open doors of trust with myself and the reader, who may or may not have one foot in Allyship. I knew

I needed to eliminate the desire to write what I thought “should be written”, and submit to the process regardless of how others may perceive my work.

Chapter 4—Results and Recommendations

Being An Ally is a Journey that requires constant emergence

Using the new *Building Student Success* curriculum in its 2015 pilot year, I discovered that Indigenous knowledge does not have to align, nor should it be expected to, with Western science. It can stand alone, and it can stand beside Western science, but as educators we do not have to find ways for indigenous knowledge to “fit” within it, for that assigns higher value to Western ways of teaching. We need to model that traditional knowledge is equal to the established ways of viewing the world. This is especially important to me because I believe that I would not be living in this part of the world today had it not been for the traditional way of life of the SENCOTEN people that was passed down during early colonial times, allowing them to survive and settle in place. This is an important connection for learners as well, as they think about their own lives, over time, in their own communities.

As I examined the new science curriculum, I realized that the *Building Student Success* framework alone could not solve the legacy of colonial teaching, and to improve my practice, and even envision myself as a developing Ally, I needed a mental framework in order to provide intentionality that doesn’t come naturally in our colonial world. I identified the need to filter my own learning and teaching through the learning organizers of content, while continually asking three questions: Can the curricular content reflect First Peoples’ Principles of Learning? How does the learning fit within students’ community and place? What is the value of the learning for each individual? By focusing on these three frameworks, I discovered that it is possible to be a strong curricular Ally each and every day in the classroom.

Content, Community, and Self

The four main themes of the new British Columbia grade four science curriculum are:

- living things sense and respond to their environment
- matter has mass, takes up space, and can change phase
- energy can be transformed
- the motions of Earth and the moon cause observable patterns that affect living and non-living systems (Ministry of Education, 2015)

As I processed this required curriculum through the content filter, I saw that the only Ministry of Education reference to Indigenizing this learning was for students “to identify First Peoples perspectives and knowledge as sources of information” (2015). Although the content was there, and could indeed reflect First Peoples Principles of Learning, it was up to me not only to find the resources but also to make them work for my level of Allyship. I consider this inaccessibility to resources a failure of the new curriculum. Once I found the material, I then wanted to share it in a way that connected learning with the community, and have students connect with self and think deeply about the value of their learning. As I thought about these three filters, the idea of creating a “parklet” parking spot park was born.

There are more dos than don'ts

Moments of brilliance occur in teaching when the teacher is prepared to fail. The best learning opportunities come from taking risks and entering that space that teachers fear the most: lack of control. But by taking risks, we also open doors to opportunity.

My best teaching has always occurred when I have been fully prepared to fail; when naysayers doubted the potential of my ideas and the logistics of attempting untested ways to reach children. The entire premise of decolonizing education is to open up (Kinew, 2015). Maxine Greene (2005) describes this frame of mind as having the courage to go beyond the status quo, and moving into teaching what is right. “Without the ability to think about yourself, to reflect upon your life, there’s really no awareness, no consciousness. Consciousness doesn’t come automatically; it comes from being alive, awake, curious, and often furious” (p. 79) In this “space of hesitancy, perhaps, of imagining what might follow after, a space of reflection, of consideration there is bound to be a kind of breathlessness, a straining to reach across a space in order to transcend”(Greene, p. 79). As teachers submit to this awareness, and develop a richer, deeper, more balanced perspective, they are giving away power to students, and creating more inclusive, “low floor, high ceiling, high interest” activities to reach all learners.

One of my recent class science projects based on the new curriculum involved transforming a parking stall into a parklet, showcasing how by reclaiming pavement, we could use matter to create a new structural space where children could learn and play. Critics said I would never get permission to build a safe structure, that it would be too expensive, too time consuming, and end up being vandalized. Through inquiry learning and assigning children the roles of engineers, marketers, landscape designers, suppliers, team managers, and construction

workers, the vision became a reality, not just physically but figuratively. In addition to having all supplies donated and the support of the school district maintenance department, we even convinced the school principal give up *his* own parking space!

As we reshaped and reimagined this sterile concrete space, we made connections to traditional native plant groupings pulled from Indigenous knowledge. We learned that wild strawberry leaves were traditionally used to treat an upset stomach, that our planted salal in recycled chimney flue planters could help heal cuts, and that mint could relieve symptoms of asthma (Wata, personal communication, June 2004).

Following the First Peoples Principles of Learning, we recognized that learning takes patience and time, and that for the project to be well received by hundreds of learners, we needed to explore and reimagine our own identity and express it through the design of our parklet. When learners follow this Indigenous educational philosophy, they need to use their own life experiences and opportunities to explore their identity, especially when that exploration is grounded in community and place (Cajete, 1994). And reimagine they did; although it is most likely that the person who learned the most from this initiative was me, the teacher, as I submitted to risk and gained a better understanding of myself.

The Power of Story

From the very earliest times people have shared stories: pictographs drawn on rocks, messages etched on stone tablets, family histories carved in cedar, oral accounts passed down from one generation to the next. The urge to tell stories seems as old as humankind, and is key to engaging learners in identifying with their learning. Story entertains, instructs, persuades, preserves culture, and creates bonds between the storyteller and the audience. Story contains shared emotion of the human experience.

Hooks (2003) claims that one of the hallmarks of a healthy learning community is one that shares and receives stories as a way to open our minds and hearts to other worldviews and perspectives. We are only recently beginning to discover the vast treasure trove of traditional stories; and to give them authenticity, ideally, the original oral nature of the stories should be preserved. Storytelling using primary sources maintains authentic Indigenous thought, rethinks power relations between Indigenous peoples and settler Canadians, and reduces the divide between Indigenous communities that arises when people have been removed from their heritage and thus, from themselves (Taiaiake, 1999).

When Indigenous authors are invited into schools, the storyteller can use verbal and nonverbal techniques to adapt the story to the audience. As we try to understand traditional stories and their often spiritual nature, it can be difficult for the Western mind to make sense of them using more than the conditioned Eurocentric worldview. Is a story creature “real” or allegorical in nature? As a teacher, it is important to share with students that events and characters can be important on several literal and symbolic levels. For example, Raven’s return to right the wrongs of the world may be both the literal animal form and a symbolic representation of humankind. My conclusion for teachers who, like me, are also struggling to understand traditional story through a Western upbringing, is to realize that story has an incredible teaching value both morally and instructionally, and provides the ideal medium to ask deep questions with students. Story contains valuable lessons about respect for the environmental, social, emotional, and moral well-being of self and community, and scientific detail of natural phenomenon.

Wait—are we stealing stories?

I'm an alien, I'm a legal alien.

-Sting

As educators, we must ensure that when we bring Indigenous cultural knowledge and Ways of Knowing into the classroom, it does not come at the expense of those whose knowledge we are sharing. Do all Indigenous peoples want their shared knowledge systems freely disseminated? With First Nation peoples having already lost so much, we need to recognize that knowledge systems, whether shared during winter storms amongst trusted ones or not, contain power and influence, and although language and story need to be preserved, it needs to be done in a way that respects this knowledge in an “outside” world. It should be noted that this is not an act of restoring that knowledge into classrooms, as it has never been there in the first place. It is a new beginning. Therefore, this new path must be walked with utmost respect and humility as we honour these knowledge systems in our classrooms. As Battiste says, the walk must do more than avoid harm to participants, it must benefit those involved (in Henderson, 2000).

As a French Immersion teacher, I made a connection between the sharing of First Nations knowledge and teaching French in Western Canada. It has always been a struggle to champion the francophone voice in Anglophone British Columbia, yet Canada's Francophones remain strong and resilient in their language and culture, having fought for decades to retain their unique voice and story. Parallels can be drawn between Canada's Francophones, French Immersion, and the Indigenization of classrooms. Am I unconsciously, as a non-authentic Anglophone French

Immersion teacher, stealing the francophone story and language? Similarly, am I stealing Indigenous stories as I share them in my classroom?

Mourning Dove, Wab Kinew, artists like Bill Reid and storytellers like Harry Robinson have long seen story preservation as power, for if they are lost there is nothing. As an educator, I am reassured by the philosophy that it is a privilege and a responsibility to share these stories. We can learn so much about ourselves, land stewardship, and how choices affect community from stories such as “The Raven and the First Men”, in which sadness is revealed, but the raven returns to put the world right again.

Decolonizing classrooms

A huge wave of white people will come and with their coming the native spirit will be wiped out to almost nothing, but when it hits its lowest point the Indian spirit would start to rise up again and out of this new rising would come not only strong brown Indians but white Indians.

(Chief Leonard George, Tsleil-Waututh Nation, North Vancouver (1991))

Early on in my journey of understanding I realized that despite the Indigenous Education movement, there are ongoing effects of settler colonialism in our schools and the communities students come from. Recognizing this is an important step towards decolonizing our minds. Veracini (2011) states: “As long as the decolonization of the settler colonial situation remains unresolved, settler colonial present and settler colonial past inevitably resemble each other” (p. 180).

Upon further reflection, I concluded that this awareness must transition from thought to restitutive action if it was to have any true decolonizing effect.

Once educators are able to see that colonialized Canada still affects learning in the classroom, we can begin to question assimilationist forms of teaching and be inclusive of non-Eurocentric worldviews. As I thought about how others (Smith, Dei, Wane, Kinew, Battiste and Henderson, Tuck, Yang, et al.) have charted new waters and defined new routes towards decolonization, I realized that I had taken up these frameworks and constructed my own—content, community, and self—in the context of the elementary classroom. I now consider this reflective teaching mindset an instructional strategy unto itself for indigenizing education. Indigenizing what and how we teach requires undoing decades of past practice. Such decolonizing of classrooms can be a long process as well; trust takes time and teachers should not expect quick results (Tuck & Yang, 2012). The British Columbia settler history of colonization and its effects on First Peoples has been systematically silenced and until recently unspoken in curriculum. (Battiste & Henderson, 2000; Smith, 2012; Battiste, 2013). Who are those who were silenced? How can we bring their voices back into our classrooms through authentic learning environments? Elementary science as a teaching tool is a good medium to begin decolonizing education because the Eurocentric scientific method and worldview has long since been heralded as unchallenged. If elementary science can change its ways, so too can other disciplines.

Large scale Organizational Strategies

While classrooms are becoming more and more Indigenized, it is important that teachers are supported in a cohesive manner. Districts must help guide educators through accessibility, authenticity, and accountable planning for the future.

Accessibility refers to districts supporting a place-based, local approach to delivering a provincial curriculum. It makes learning relevant to students' lives in their own communities through direct interaction and communication with land and peoples, and requires that

connections be made with local knowledge keepers and resources so all teachers have equal access to supporting the new curriculum, not just those who have established connections. Actively seeking connections and conversations, and promoting those community ties throughout the learning community will link teachers and students with learning experiences in multiple ways, with multiple audiences.

The second guiding principle is one of authenticity. I believe that authentic top-down district leadership results in a model educators trust and see the value in promoting. Authentic Indigenized classrooms mean that all educators, including superintendents, assistant superintendents, directors of instruction, and all management staff, are role models and are open to multiple perspectives and worldviews. The authentic Indigenized classroom starts at the top with management and the bottom with teachers and makes learning relevant and transferable from the classroom to the students' own lives.

The third principle, planning for the future, takes into account the past, present, and future. It asks questions about how we got here, what we are doing now to right the wrongs, and consistently checks that the actions we are taking are going help our world now, and in the ever-changing future. To do so, we need to ask students directly how they feel they are doing. Can students identify themselves as student Allies? Have students internalized their learning or are they dependent on the teacher? By checking that students understand the task (what they are doing) and the purpose (what they are learning and why), we can get a full picture of students' depth of understanding to help guide learning and resources to support that learning.

K-12 Connections and Capacity Building

In my own learning journey, I discovered that systematic change does not occur in isolation by individual teachers. A district vision is needed to provide support to teachers and

focus, cohesion, and accountability to districts when integrating Indigenous pedagogy and perspective into classrooms. One shortcoming of many districts is the lack of communication and shared learnings between elementary, middle, and high schools. Some of the richest activities I have been a part of as a teacher involved elementary students visiting middle or high schools for marine or biology lessons taught by high school students, the oral sharing of authentic stories, and outdoor education activities where elementary students interacted directly with students outside of their own school. Within the prescribed curriculum, one recommendation I propose is for districts to provide Indigenous themes to each level, and then promote exchanges of knowledge amongst and between the levels.

At elementary, culture and language could be the focus. Residential schools resulted in the majority of Indigenous people speaking English as their mother tongue. By focusing on language and culture at the elementary level, students would learn local language and key phrases as part of the reconciliation process. Elementary students could learn language through story, place names, art, and music. In middle schools, student would learn sophisticated scientific understanding of traditional ecological knowledge and ways of knowing. As Wata (2004) states, students would explore the pharmacy in our forest and the breadbasket of our waters. Finally, our high school youth could explore youth leadership, elder connections, and reconciliation. By providing set themes at each level, deeper learning can occur as the levels connect and build upon each other and as communication amongst learners at different schools and levels is facilitated.

The IPAC

Parents are a vital part of their children's education, and their importance is formally recognized by all school districts through each school's Parent Advisory Council (PAC) as well as each

district's Confederation of Parent Advisory Council (COPAC), which officially represent each school's PAC. The COPAC is a formal seat at the planning table and is tasked by the province to advise the board on any matter related to education" (British Columbia Confederation of Parents' Advisory Councils, 2015). A district Indigenous Parent Advisory Council (IPAC) would specifically advise the board on any matter related to Indigenous education. Like the COPAC, the IPAC would be an advisory body representing elementary, middle, and high schools in each district, and would help rebuild connections with our First Nations learners and parents, better ensure accountability in matters related to Indigenous Education and student achievement, and provide the district with authentic Indigenous initiatives.

The IPAC would formally acknowledge the importance of First Nations communities and the Indigenous voice. It would be an ongoing, inclusive process for sustaining the living and ever changing nature of school values, vision, and mission, and the important role Indigenous peoples have to play. What can the district do to promote Truth and Reconciliation at the school level? What can the district do to support teachers' development of Indigenous teaching practices? What needs to happen to address the needs of Indigenous students in our schools? What can our schools do to develop positive relationships with our Indigenous families and communities? Do schools' codes of conducts reflect Indigenous beliefs and learning? IPACs would help provide direction to these questions as districts reflected upon the impact or district responses to curriculum change upon Indigenous peoples, as well as all learners.

Assessment

While gathering research I remembered from my experience in Alert Bay the community members who shared their land with me, stating that elder experts "showed through doing and example" tasks children needed to learn, such as fishing or drum making. Traditionally this is

how knowledge was passed on, with older community members sharing their knowledge with the next generation. Elders or community knowledge keepers felt the learner was ready then they were left to refine the skill independently or move on to more complex tasks. The teaching was highly relevant to students' lives and took place as day to day living happened, often following seasonal calendars. From a First Nations perspective this was a very formal process and shows how the "modern" movement towards personalized learning actually has its roots in precolonial times.

Even this past June, I found myself falling back into wanting to evaluate students in science using standard district methods such as the scientific method and the science processes of observing, measuring, questioning, and hypothesizing. In other subjects, top-down mathematics tests and artificially stressful one-on-one reading evaluations are still the "go to" assessments. One of my research goals was to integrate both traditional and Western science teaching, but it is hard to break old methods of teaching and evaluation, especially when traditional assessment techniques have not been developed in the new curriculum.

Community Relationship Building

I believe that in order to move forward enacting the Truth and Reconciliation Commission's recommendations, all community members have a role to play. Instead of talking about elders, we need to invite a local elder to the school to share their story, their past, and their connection with the land. Instead of reading about a creation story, have an elder orally share this history. This same story read from a textbook provides no context or authentic framework to help learners rethink the real lives of Indigenous peoples' past as told through story. This type of local awareness and direct connection to authentic sources shifts understandings and creates an awareness needed to help decolonize our classrooms. We need to start a relationship with our

local Indigenous communities. Instead of the education system walking in front of Indigenous peoples as it has over the last 150 years, we need to walk together, side by side, as mutual partners, to make Canada a better place.

Ethical Decision Frameworks

How do teachers help themselves and others understand and embrace Indigenous values and beliefs so they are reflected in the values and beliefs of the school? By filtering the decision making process through the First Peoples Principles of Learning and the content, community and self frameworks previously described, responsible decisions in which all partners and voices are heard can better the learning conditions for all learners. Teachers need to reflect upon past practice and historical problems that may impact decision making when working with Indigenous students and parents. By modeling an open and honest inquiry, and ways of encountering challenges and finding resolution when making educational decisions, this method of decision making ensures that Indigenous values are always considered.

Student Voice

None of these recommendations matter if they cannot be portrayed through the student's own character and voice. As a teacher I would much rather my students engage in learning conversations with the strength of character and courage to fight injustices where they find them than to have memorized the capital cities of each province. We know that among our students are the future leaders of our country, the ones who will provide leadership and stewardship of our land, the ones who will make future decisions about reconciliation, and it is not too early for these youth to start coming to terms with the history of Indigenous peoples in British Columbia. As teachers we must watch. We must listen. We must show respect.

Final Thoughts

"Come to the edge, He said.
They said: We are afraid.
Come to the edge, He said.
They came. He pushed them,
And they flew . . ."

Guillaume Apollinaire

My goal for this chapter was to present the idea that what is more important than merely a list of teaching strategies is the mindset that must accompany any Indigenous resource. The process of self-interrogation and reflection when decolonizing and Indigenizing classrooms is one that is built up, like many layers of a blanket, protecting and reassuring learners that Indigenized education is not only the best practice, but the right practice. It is my belief that if teachers engage in a learning journey such as mine, they too might listen and act as new Allies in the reconciliation of our classrooms. Through autoethnography I have become a stronger Ally, but still a developing one, equipped with a more intimate knowledge of lived experiences and their effects in classrooms. My goal is to continue to disseminate truthful information about Indigenous communities via professional development opportunities, my teaching practice, and my work with the Ministry of Education designing provincial assessment materials.

Overall, this project was highly instrumental in broadening my knowledge of the various approaches used when including an Indigenous perspective. We all teach in the legacy settler colonialism left behind, one so entrenched in our daily practice it is the invisible normal. While

carrying out this critical ethnographic study, as an Ally to Indigenous communities, I was mindful to fulfill the ethical considerations I presented in my methodology section. In future projects, both as a teacher and as a researcher, I would like to work more closely with my local Indigenous community members on collaboration projects to ensure that what was attempted to be forgotten shines a new light on how and what we teach. My work will continue to be informed by Indigenous knowledges, cultural studies, and connections with elders, and guided by an anti-colonial perspective and constant Indigenous filter to guide my practice. As I continue to reflect upon complex questions of how to move forward when historically marginalized populations were disregarded and essentially “gag orders” were put on some educational topics in the recent past, I am led to a richer awareness of my current practice.

We are entering a brand new world in which we want to Indigenize our classrooms and our district leadership standards; but it should be recognized that the Indigenous peoples of Canada have already been doing this for hundreds of years. It is only recently that First Nations, Métis, and Inuit peoples have become formally part of the process. Chief Dan George, a culturally strong leader of the Tsleil-Waututh Nation of North Vancouver, asked, “Can we talk of integration until there is integration of hearts and minds? Unless you have this, you only have a physical presence, and the walls between us are as high as the mountain range.” What resonates with me in this quote is “hearts and minds.” Teachers can go to workshops, study new curriculum documents, and teach required Indigenous concepts, but if we as educators do not open our hearts and minds to the process of understanding Indigenous people in British Columbia, true reconciliation will not occur. The barrier will still be there and we need to challenge ourselves to do what is best for all learners, for everyone in the room—every child, Indigenous or not. Reconciliation is realized when two people, or groups of people, come

together and understand that what they share unites them and that what is different about them needs to be respected.

Teaching is a privilege and educational transformation to include more Indigenous content requires courage during moments of struggle. In such moments, we need to take care of ourselves. At the recent Short Course conference at the University of British Columbia, I was speaking with a Nisga'a colleague who told me a story about when he too as a teacher was feeling like "his battery power was low." And so he went to his grandma's house, where she told him to have a seat. And then she shared. She explained that when she was young and entering into adulthood, life became difficult. And so her grandma sat her down. And in the way Indigenous peoples have existed for centuries upon this land, she instructed him to go into the forest, and talk to the trees, to let the trees be his audience. He was told to allow himself to share with the trees what was on his heart and mind. To allow himself to cry. To scream, just as he did when he took his first breath and entered into the world, for like that first breath, it was his medicine, she said.

So, he went to the trees and talked to the trees and cried to the trees and screamed at the trees. He did not know grandma was standing in the forest behind those trees. And when he was done, and exhausted, the wind started to blow. And the leaves rustled. And grandma stepped out and said, "Way to go! The trees are applauding for you and giving you advice with their applause." Peter was then able to stand tall again.

As educators, we need to take care of ourselves before we can help others. There are trees watching us, and in the classroom little eyes watching us, admiring us as we stand before them. The world needs healthy teachers and leaders to ensure that the children entrusted to our daily embrace will leave our schools with a sparkle in their eyes. A sparkle of respect for a cultural

way of teaching to reframe, restate, reimagine, and reclaim lived experiences and help create their own story.

Telling

We long for a new reading of history.
We wax nostalgic.
We wish the newsreels of history
Could be rewound, run backwards
Before our eyes.
Warriors would drop their rifles.
Constructed residential schools
Could be deconstructed.
Dying languages would find
Our throats once more.
The Indian Act would be unwritten.
Perhaps our worth would be known,
Our intellect revealed
and Recognized as needed.
We long for a new telling of history.
Such a story would remain our own,
A fire ashore at night.
Gentle and honest and telling,
Before all eyes.

-Chief Leonard George, Tsleil-Waututh Nation, North Vancouver

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APPENDIX A
Ally Bill of Responsibilities

Responsible Allies:

1. Do not act out of guilt, but rather out of a genuine interest in challenging the larger oppressive power structures;
2. Understand that they are secondary to the Indigenous people that they are working with and that they seek to serve. They and their needs must take a back seat;
3. Are fully grounded in their own ancestral history and culture. Effective allies must sit in this knowledge with confidence and pride; otherwise the “wannabe syndrome” could merely undermine the Indigenous people’s efforts;
4. Are aware of their privileges and openly discuss them. This action will also serve to challenge larger oppressive power structures;
5. Reflect on and embrace their ignorance of the group’s oppression and always hold this ignorance in the forefront of their minds. Otherwise, a lack of awareness of their ignorance could merely perpetuate the Indigenous people’s oppression;
6. Are aware of and understand the larger oppressive power structures that serve to hold certain groups and people down. One way to do this is to draw parallels through critically reflecting on their own experiences with oppressive power structures. Reflecting on their subjectivity in this way, they ensure critical thought or what others call objectivity. In taking this approach, these parallels will serve to ensure that non-Indigenous allies are not perpetuating the oppression;
7. Constantly listen and reflect through the medium of subjectivity and critical thought versus merely their subjectivity. This will serve to ensure that they avoid the trap that they or their personal friends know what is best. This act will also serve to avoid the trap of naively following a leader or for that matter a group of leaders;
8. Strive to remain critical thinkers and seek out the knowledge and wisdom of the critical thinkers in the group. Allies cannot assume that all people are critical thinkers and have a good understanding of the larger power structures of oppression;
9. Ensure that a community consensus, or understanding, has been established in terms of their role as allies. Otherwise, the efforts of the people will be undermined due to a lack of consultation and agreement;
10. Ensure that the needs of the most oppressed –women, children, elderly, young teenage girls and boys, and the disabled –are served in the effort or movement that they are supporting.

Otherwise, they may be engaging in a process that is inadequate and thus merely serving to fortify the larger power structures of oppression. Alternatively, their good intentions may not serve those who need the effort most. Rather, they may be making the oppression worse;

11. Understand and reflect on the prevalence and dynamics of lateral oppression and horizontal violence on and within oppressed groups and components of the group, such as women, and seek to ensure that their actions do not encourage it;

12. Ensure that they are supporting a leader's, group of leaders', or a movement's efforts that serve the needs of the people. For example, do the community people find this leader's efforts useful, interesting, engaging, and thus empowering? If not, allies should consider whether the efforts are moving in a questionable or possibly an inadequate direction, or worse yet that their efforts are being manipulated and thus undermined, possibly for economic and political reasons;

13. Understand that sometimes allies are merely manipulatively chosen to further a leader's agenda versus the Indigenous Nations', communities', or organizations' concerns, and when this situation occurs act accordingly;

14. Do not take up the space and resources, physical and financial, of the oppressed group;

15. Do not take up time at community meetings and community events. This is not their place. They must listen more than speak. Allies cannot perceive all the larger oppressive power structures as clearly as members of the oppressed group can; And finally,

16. Accept the responsibility of learning and reading more about their role as effective allies.

APPENDIX B

First Peoples Principles of Learning

First identified in relation to English 12 First Peoples, the following First Peoples Principles of Learning generally reflect First Peoples pedagogy.

Learning ultimately supports the well-being of the self,
the family, the community, the land, the spirits, and the ancestors.

Learning is holistic, reflexive, reflective, experiential, and relational
(focused on connectedness, on reciprocal relationships, and a sense of place).

Learning involves recognizing the consequences of one's actions.

Learning involves generational roles and responsibilities.

Learning recognizes the role of Indigenous knowledge.

Learning is embedded in memory, history, and story.

Learning involves patience and time.

Learning requires exploration of one's identity.

Learning involves recognizing that some knowledge is sacred and only
shared with permission and/or in certain situations.

Because these principles of learning represent an attempt to identify common elements in the varied teaching and learning approaches that prevail within particular First Peoples societies, it must be recognized that they do not capture the full reality of the approach used in any single First Peoples society.

APPENDIX C

The five-step process for producing cross-cultural science teaching that incorporates Traditional Ecological Knowledge (TEK) while exploring the two perspectives (Western science and indigenous science). The process includes:

Step 1. Choose a Science Concept or Topic of Interest (e.g., medicine, cultivating plants, animal migrations, geology, sustainability)

Step 2. Identify Personal Knowledge

- Discuss the importance of respecting the beliefs of others
- Brainstorm what we know about the concept or topic
- Brainstorm questions about the concept or topic
- Identify personal ideas, beliefs, opinions

Step 3. Research the Various Perspectives

- Research the Western modern science perspective
- Research the various indigenous perspectives and, if possible, the local TEK perspective
- Organize/process the information
- Identify similarities and differences between the two perspectives
- Ensure that authentic explanations from the perspectives are presented

Step 4. Reflect

- Consider the consequences of each perspective
- Consider the concept or issues from a synthesis of perspectives
- Consider the consequences of a synthesis
- Consider the concept or issue in view of values, ethics, wisdom
- If appropriate, consider the concept or issue from a historical perspective
- Consider the possibility of allowing for the existence of differing view-points
- Consider the possibility of a shared vision
- Ensure that students compare their previous perspective with their present perspective
- Build consensus

Step 5. Evaluate the Process

- Evaluate the decision making process
- Evaluate the effects of personal or group actions
- Evaluate possibilities in terms of future inquiries and considerations
- How did this process make each person feel?

(adapted from Snively, pp. 66–67)

APPENDIX D

12 Standards of Education for Aboriginal Students

Eber Hampton, Saskatchewan Indian Federated College

1. *spirituality* -- At the centre of spirituality is respect for the spiritual relationships that exist between all things.

2. *service to the community* -- The individual does not form an identity in opposition to the group but recognizes the group as relatives (included in his or her own identity). The second standard is service. Education is to serve the people. Its purpose is not individual advancement or status.

3. *respect for diversity* -- The respect for diversity embodied in the third standard requires self-knowledge and self-respect without which respect for others is impossible.

4. *culture* -- Indian cultures have ways of thought, learning, teaching, and communicating that are different than but of equal validity to those of White cultures. These thought-ways stand at the beginning of Indian time and are the foundations of our children's lives. Their full flower is in what it means to be one of the people.

5. *contemporary tradition* -- Indian education maintains a continuity with tradition. Our traditions define and preserve us. It is important to understand that this continuity with tradition is neither a rejection of the artifacts of other cultures nor an attempt to 'turn back the clock'. It is the continuity of a living culture that is important to Indian education, not the preservation of a frozen museum specimen.

6. *personal respect* -- The individual Indian's sense of personal power and autonomy is a strength that lies behind the apparent weakness of disunity. Indian education demands relationships of personal respect.

7. *sense of history* -- Indian education has a sense of history and does not avoid the hard facts of the conquest of America.

8. *relentlessness in championing students* -- Indian education is relentless in its battle for Indian children. We take pride in our warriors and our teachers are warriors for the life of our children.

9. *vitality* -- Indian education recognizes and nourishes the powerful pattern of life that lies hidden within personal and tribal suffering and oppression. Suffering begets strength. We have

not vanished.

10. *conflict between cultures* -- Indian education recognizes the conflict, tensions, and struggle between itself and White education.

11. *sense of place* -- Indian education recognizes the importance of an Indian sense of place, land, and territory.

12. *transformation* -- The graduates of our schools must not only be able to survive in a White dominated society, they must contribute to the change of that society. Indian education recognizes the need for transformation in the relation between Indian and White as well as in the individual and society.

APPENDIX E GRADE 4 Building Student Success Framework

Area of Learning: SCIENCE

Grade 4

BIG IDEAS

All living things sense and respond to their environment.	Matter has mass, takes up space, and can change phase.	Energy can be transformed.	The motions of Earth and the moon cause observable patterns that affect living and non-living systems.
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Learning Standards

Curricular Competencies	Content
<p><i>Students are expected to be able to do the following:</i></p> <p>Questioning and predicting</p> <ul style="list-style-type: none"> • Demonstrate curiosity about the natural world • Observe objects and events in familiar contexts • Identify questions about familiar objects and events that can be investigated scientifically • Make predictions based on prior knowledge <p>Planning and conducting</p> <ul style="list-style-type: none"> • Suggest ways to plan and conduct an inquiry to find answers to their questions • Consider ethical responsibilities when deciding how to conduct an experiment • Safely use appropriate tools to make observations and measurements, using formal measurements and digital technology as appropriate • Make observations about living and non-living things in the local environment • Collect simple data <p>Processing and analyzing data and information</p> <ul style="list-style-type: none"> • Experience and interpret the local environment 	<p><i>Students are expected to know the following:</i></p> <ul style="list-style-type: none"> • sensing and responding: <ul style="list-style-type: none"> – humans – other animals – plants • biomes as large regions with similar environmental features • phases of matter • the effect of temperature on particle movement • energy: <ul style="list-style-type: none"> – has various forms – is conserved • devices that transform energy • local changes caused by Earth’s axis, rotation, and orbit • the effects of the relative positions of the sun, moon, and Earth including local First Peoples perspectives

- | | |
|---|--|
| <ul style="list-style-type: none">• Identify First Peoples perspectives and knowledge as sources of information• Sort and classify data and information using drawings or provided tables• Use tables, simple bar graphs, or other formats to represent data and show simple patterns and trends• Compare results with predictions, suggesting possible reasons for findings | |
|---|--|

Learning Standards (continued)

Curricular Competencies	Content
<p>Evaluating</p> <ul style="list-style-type: none"> • Make simple inferences based on their results and prior knowledge • Reflect on whether an investigation was a fair test • Demonstrate an understanding and appreciation of evidence • Identify some simple environmental implications of their and others' actions <p>Applying and innovating</p> <ul style="list-style-type: none"> • Contribute to care for self, others, school, and neighbourhood through individual or collaborative approaches • Co-operatively design projects • Transfer and apply learning to new situations • Generate and introduce new or refined ideas when problem solving <p>Communicating</p> <ul style="list-style-type: none"> • Represent and communicate ideas and findings in a variety of ways, such as diagrams and simple reports, using digital technologies as appropriate • Express and reflect on personal or shared experiences of place 	