ATHABASCA UNIVERSITY

A DESCRIPTION OF A SUCCESSFUL INDIGENOUS ONLINE HIGH
SCHOOL: PERSPECTIVES OF TEACHERS, STAFF, STUDENTS, AND PARENTS

BY

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Abstract

Education is often referred to as a key to success – a means of empowerment that is essential for economic, social, and political success. Hence, Aboriginal education is critical to Aboriginal Peoples' efforts to control their lives and their communities. Current literature shows that in Canada, not all Aboriginal youth have access to high school programs within their local communities, and there is a gap between educational attainment levels of Aboriginal and non-Aboriginal students. Education attainment levels affect workforce participation, and in order to reduce poverty, it is necessary for more Aboriginal workers to join the workforce. In order for this to happen, the number of Aboriginal learners completing high school must increase.

Online learning provides increased opportunities for Aboriginal learners to access quality high school education while remaining in their communities and reconnecting with their languages and cultures. This case describes a successful online Aboriginal high school based on the perceptions of teachers, staff, students, and parents.

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List of Abbreviations

BCR   Band Council Resolution

EPP   Educational Partnerships Program

FN   First Nations

IS   Information System

KiHS Keewaytinook Internet High School

LFS   Labour Force Survey Estimates

LMS Learning Management System

NAN Nishnawbe Aski Nation

OER Open Educational Resources

PID   Participant Identification Number

REB   Research Ethics Board

SME Subject Matter Expert

AVS   Awa Virtual School

Chapter 1: Introduction

Overview and Background

All Canadians are entitled to receive educational opportunities that maximize the potential of learners from primary to post-secondary levels. The role of education is to impart knowledge and support the development of the whole child so that he or she is able to acquire the skills and abilities to achieve personal hopes and aspirations, fulfilling personal potential and the potential as a member of community and broader society (Haldane, Lafond, & Krause, 2012, p. 1). Mai (2011) argues that "one of the crucial tools is education; a right that should be afforded to all citizens" (p. 231). However, within Canada there are high school students living in Indigenous communities who do not have access to full graduation programs, and some have no available programs on their reserves past the grade eight level. For example, in Manitoba, of the 63 First Nations communities, only 21 offer full high school programs on reserve and 13 schools have no programming past grade eight (Manitoba First Nations Education Resource Center, 2015). Regrettably, many Indigenous youth face educational challenges at the most fundamental level: access. This issue needs to be resolved. However, it is reasonable to argue that, "addressing the needs of Aboriginal learners within the constraints imposed by limited resources requires a strategic approach that focuses investments in those areas that will yield the greatest benefits in relation to specific goals and priorities" (Friesen & Krauth, 2012, p. 7). Furthermore, the discussion about education for Indigenous learners is not a new one and some might argue, that, "schools and schooling have been at the heart of the relations between the Indigenous nations of Canada and settlers for centuries" (Castellano, Davis, & Lahache, 2000, p. 3). According to Castellano et. al, "public policy in the field of education expresses, usually

quite directly, the changes in the relationship between Aboriginal and non-Aboriginal Peoples" (p. 3). Nonetheless, history, poverty, culture, racial tensions, and the relationship between the Crown and Aboriginal Peoples have intertwined to create education gaps within Canada.

Statement of the problem. According to Gallagher-Mackay and Kidder (2013), "a key aspect of decolonization is ensuring Aboriginal participation and leadership throughout the school system" (p. 10). Franchetto and Pritchard (2014) state that students see the trend towards increasing Aboriginal control as "an important one for fostering an inclusive, welcoming environment for Aboriginal students, providing an education that recognizes and affirms cultural identity, and counteracting the legacy of residential schools" (p. 16). But can it be assumed that having Aboriginal schools, with Aboriginal teachers, automatically ensures delivery of a culturally inclusive curriculum? "Not every Aboriginal teacher has access to traditional teachings or is an expert in teaching about the history and culture of First Nations, Métis, or Inuit peoples" (Gallagher-Mackay & Kidder, p. 10). Therefore, schools might have to include other members of the Aboriginal community in the delivery of educational programs.

The issue of closing the education gap between Aboriginal and non-Aboriginal learners in Canada is one that warrants much attention, and "the gap in education levels between Aboriginals and non-Aboriginals is one of the great social policy challenges facing Canada" (Richards, 2008, p. 2). "The chronic underfunding of First Nations schools is the most urgent issue to be addressed as the inequities [were] glaringly obvious and [had to] be addressed to close the education gap" (First Nations Education Council, 2011, p. 41). The 2016/17 federal budget increase of more than $300 million comes at a time when greater funding is urgently needed for First Nations schools (Anderson & Richards, 2016, p. 2). Richards (2014b) outlines

some contributing factors to the education gap between Aboriginal and non-Aboriginal learners in Canada:

> Disproportionately, Aboriginal students come from low-income families with low formal education. Many Aboriginal parents harbor a mistrust of formal education as an instrument of assimilation and place limited importance on mastery of core subjects (reading, science, and mathematics). Aboriginal students are also more likely to reside in isolated communities. Despite higher per-student funding in rural than in urban schools, the education outcomes in small schools in isolated communities are, for all students, generally inferior to outcomes in urban communities. Negative peer effects play a role. In schools with large Aboriginal student cohorts, Aboriginal students tend to perform less well. Finally, discrimination may exist in the school system. For example, teachers and administrators may form low expectations of Aboriginal student potential.
>
> (Richards, 2014b, p. 43)

It must be emphasized that closing the education gap is not an easy quick fix that can be remedied only by increasing Aboriginal control of Indigenous education. Alongside this must enter recognition of the complexity of the issue from a historical perspective. For example, since "the residential school system was intended to remove students from their parents, and communities, to prevent the transmission of Indigenous knowledge and language from generation to generation" (Franchetto & Pritchard, 2014, p. 8), Aboriginal communities, in essence, experienced cultural invasion.

> In this phenomenon, the invaders penetrate the cultural context of another group, in disrespect of the latter's potentialities; they impose their own view of the world

upon those they invade and inhibit the creativity of the invaded by curbing their

expression. (Freire, 2008, p. 152)

Freire (2008) points out that for cultural invasion to succeed the invaded must recognize their

intrinsic inferiority (p.153). As a result of the cultural invasion of Aboriginal Peoples in Canada,

many personal and social dysfunctions arose, including "high expenditures on family and child

services" (Sharpe & Arsenault, 2009, p. 23).

       According to Freire (2008), when communities experience cultural invasion this leads to

cultural inauthenticity of the invaded; "they begin to respond to the values, the standards, and the

goals of the invaders" (p. 153). Cultural inauthenticity leads to a duality of the social "I" and this

affects education and productivity. Richards (2008) argues that "the cost of low Aboriginal

education levels is not just the impact on Canadian productivity; it is also the impact on poverty

and racial tension" (p. 6).

       Popovic (2011) characterizes Aboriginal populations in Canada as a group with low

socioeconomic and health standards whose living standards are below that of the general

population. Wang (2012) characterizes Aboriginals as a disadvantaged class. Wang argues that

it is unfortunate that Aboriginal Peoples have "traditionally only been studied, rather than

consulted, considered or respected" (p. 53). As a result, Gallagher-Mackay and Kidder (2013)

recommend a "multi-pronged approach, which includes targeted educational and social supports

(within and beyond the school), to close current knowledge, resource and achievement gaps" (p.

12).

       The role of online learning in closing the education gap. Since the majority of

Aboriginal Peoples (more than 600 First Nations) reside in rural or remote areas, "distance

education would seem in theory to offer considerable benefits to community members" (Simon,

Burton, Lockhart, & O'Donnell, 2014, p. 2). Furthermore, the trend is that K-12 distance and

online education continues to grow each year (Barbour, 2013). The growing ubiquity of

educational technology has given rise to an increase in virtual schools or online schools, in

response to the need for increasing educational opportunities for Aboriginal learners. It can be

argued that computer technology affords one of the most flexible options for providing access to

these groups (Clark & Mayer, 2011).

> Use of the Internet is not, of course, always friendly or supportive. When it is not
>
> managed carefully by skillful teachers and mediators, it can exacerbate problems.
>
> It can be a prime vehicle for cyberbullying—persistent victimization of weaker
>
> students using electronic media (including telephones). (Austin & Hunter, 2013)

However, when managed carefully, the Internet can lead to successful expansion of educational

opportunities because online learning "includes both content (that is, information) and

instructional methods (that is, techniques) that help people learn the content" (Clark & Mayer,

2011, p. 9).

Purpose of the Study

Although this case study investigates an Indigenous online education system, it does not

focus on examining different methods and approaches that online or distance education systems

can utilize to address educational issues. Rather, the research focuses on the challenges and

issues identified by and within an Indigenous community. Online education offers a particular

approach by which these challenges and issues could be addressed, reduced, and/or resolved. It is

important to highlight that the crux of this research centres on Indigenous education and not

online or distance education per se. Distance education is used here as a potential "service" that can help overcome the constraints facing small schools in isolated communities.

Sharpe and Arsenault (2009) state that "Aboriginal Peoples will undoubtedly play a significant role in shaping the economic future of Canada, and, in particular, that of the Western provinces" (p. 26). Addressing the education gap and reconnecting Aboriginal students to their communities, languages, and cultures, plays a crucial part in ensuring Canada's economic success and, more importantly, in safeguarding successful, thriving Indigenous communities. High school completion is important not only to the Canadian economy and to individual success in the labor market but also to the development of self-confidence and accomplishment. Richards (2014b) argues that although high school graduation is low on the education ladder it seems to be imperative to the job market. Essentially, high school completion "remains the crucial rung for getting a job" (p. 40). Figure 1 "illustrates the relationship between highest education level and employment rates among First Nation, Métis and non-Aboriginals. The rate within each identity group is below 40 percent for those lacking high school certification" (Richards, 2014a, p. 407).

Figure 2 shows the percentage of Canadians ages 20-24 without a high school diploma or higher. There is a gap in educational attainment levels between the non-Aboriginal population and Aboriginal population (off-reserve and on-reserve). The percentage of Aboriginal Canadians without a high school diploma is substantially higher than the corresponding non-Aboriginal population.

Figure 1: Employment Rates, Selected Identity Groups, by Highest Education Level, 2011
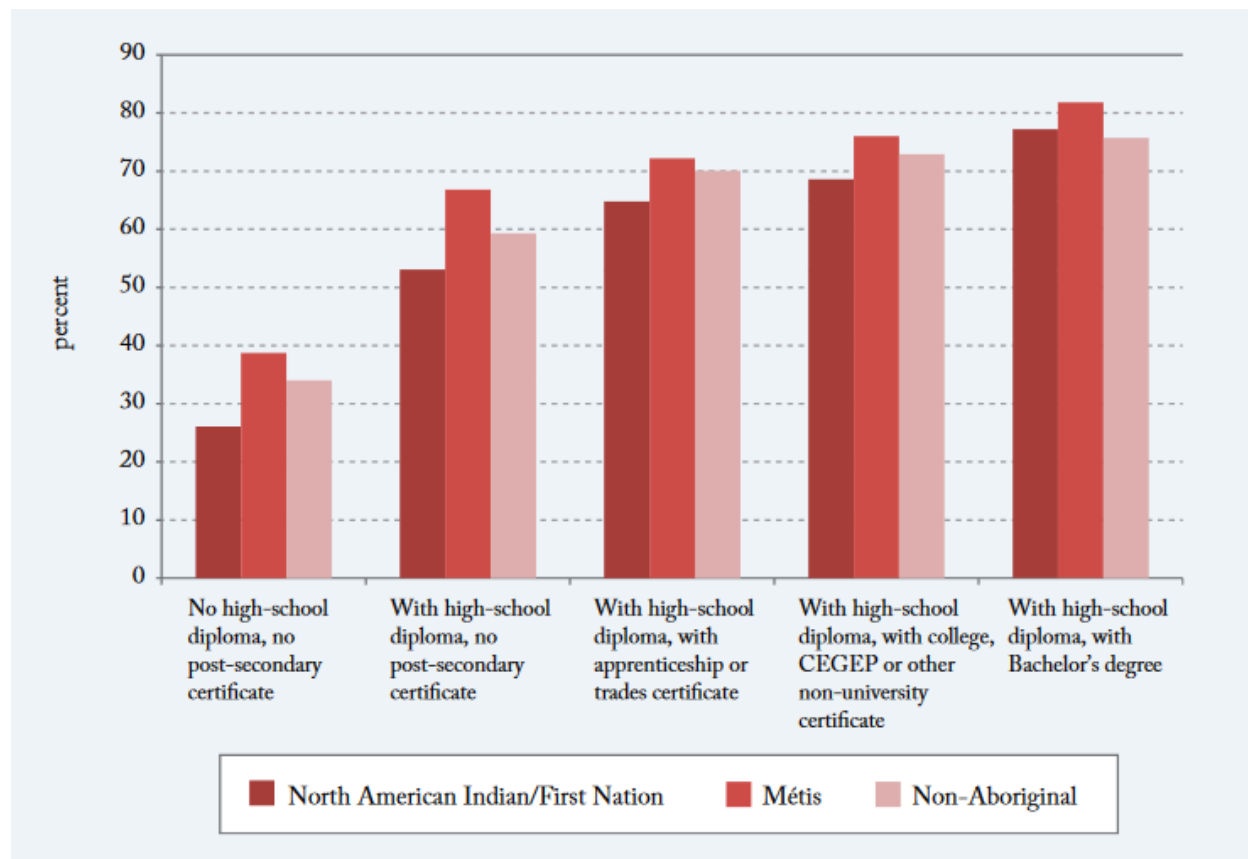
Source: Richards, 2014a, p. 408.

Figure 2: Share without High-School Certificate, Selected Aboriginal and Non-Aboriginal Identity Groups, Ages 20-24, 2006 and 2011
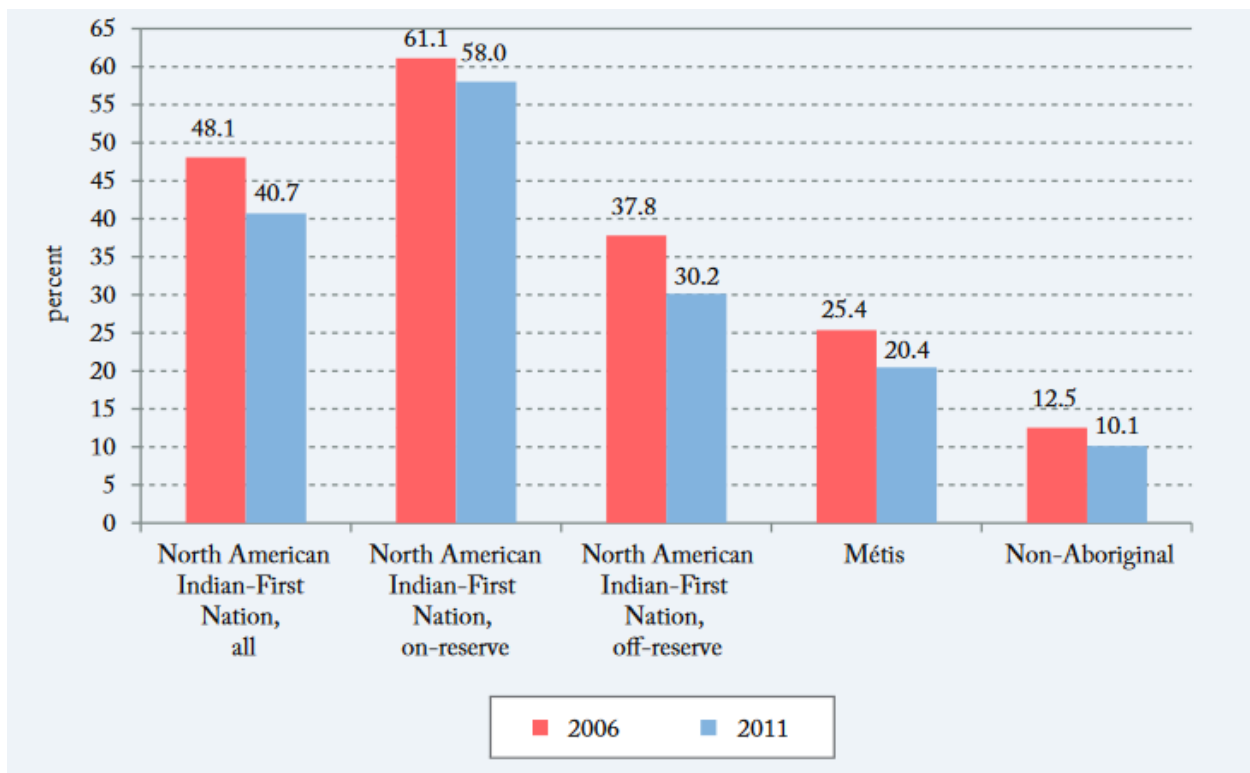
Source: Richards, 2014a, p. 407.

Research Questions

The research questions which drive this study of a successful Indigenous online high school are derived from inquiry into the research problem and the related literature. The study seeks to answer the following questions by examining the perceptions of teachers, staff, students, and parents:

1. What are the essential components of a successful Indigenous online high school?

2. What role does Indigenous culture play in shaping a successful Indigenous online high school?

Significance of the Study

According to Barbour, Siko, Sumara, and Simuel-Everage (2012), there is limited published literature on K-12 virtual schools in Canada, despite sustained growth since their inception in 1993. Since 2010 almost every province and territory has had some form of virtual schooling (p. 1). While research of Indigenous online learning at the post-secondary level is scarce, very little attention goes to Aboriginal K-12 online learners. Investigating the issues surrounding online learning in Indigenous schools, especially at the K-12 level, is urgently needed. Understanding Indigenous learning as a key element of national significance is essential to improving the co-existence of Aboriginal and non-Aboriginal knowledge, and developing large-scale policy and programmatic responses.

Academic audiences will gain new knowledge regarding Indigenous perceptions of online education, definitions of success, and the role of Indigenous culture in shaping success within the context of a virtual high school for Indigenous learners. Non-academic audiences, such as Indigenous learners, teachers and parents, provincial policy-makers, and all Canadians interested in online learning, will be given tools to reflect and debate on the status of Indigenous online education as well as the efficiency, fairness, and relevance of online education at the high school level in Indigenous communities.

Theoretical Paradigm

Theoretical paradigms offer various explanations that describe how knowledge is attained (how we come to know). The general doctrine of positivism which posits that all genuine knowledge is based on sense experience and can only be advanced by means of observation and

experiment (Cohen, Manion, & Morrison, 2011, p. 7). Thus, positivism relies solely on experience, and it excludes understanding and judgment. Essentially, it includes data of senses but not the data of consciousness. However, this is where the limits of positivism become apparent (Cohen et al., p, 7). While empirical data might be useful for scientific explanations, human behaviour cannot be explained if we exclude knowledge at the levels of understanding and judgment.

Dunne (1985) proposes an alternative, explaining that after we have gone through the processes of experience and understanding we must then ask, "Is it so?" This paradigm, interpretive by its very nature, calls on us to place judgment on our experience and understanding. This case study research project is aligned with Dunne's (1985) view that knowing involves more than just experience, but also understanding and judgment – the interpretive paradigm has concern for the individual and focuses on action (Cohen et al., 2011, p. 17). This may be thought of as behaviour-with-meaning; it is intentional behaviour and as such, future-oriented (Cohen et al., p. 17). Drawing on an interpretive paradigm, this research project describes the key factors that contribute to the success of an Indigenous online high school based on the meanings and perceptions of people in that context (teachers, staff, students, parents, and stakeholders in the community).

Theoretical Underpinning. Constructivism serves as the theoretical underpinning for this research project because "constructivist epistemology claims that knowledge is a subjective interpretation imposed by the individual on the world" (Lim & Sudweeks, 2009, p. 232). According to Stake (1995), constructivism is rooted in a belief that knowledge is primarily made up of social interpretations as opposed to awareness of an eternal reality. Participants in this case study were invited to share their thoughts about what success means, the essential components

for success, and the role of Indigenous culture in shaping success within the context of a virtual high school for Indigenous learners. Their individual ideas, thoughts, and perceptions may be different although they have shared experiences within this context of study, and this reflects constructivist epistemology. Stake (1995) argues that knowledge is constructed, not discovered. The participants in this case study share their constructs or perceptions, which in turn inform the findings of this research project. Furthermore, the researcher constructs meaning from the data through a process of data analysis.

Ontological and epistemological considerations. Hoffman (2013) argues that "Aboriginal ontologies and epistemologies are rooted in worldviews that are inclusive of both the sacred and the secular" (p. 190). According to Hoffman, the central ontological belief is that "the world exists in one reality composed of an inseparable weave of secular and sacred dimensions" (p. 190). Roy (2014) explains that the concept of relatedness – "the links of humans to each other as well as to the natural environment and to the spiritual world" – is important to Aboriginal ontology. Hoffman further explains that the epistemological principle is derived from the belief that knowledge is gained through interaction with the physical and spiritual aspects of the world (p. 190). Hoffman suggests that the academy must accept "Aboriginal knowing":

> That is the ontological basis of Aboriginal knowing. We must also be willing to
> accept the Aboriginal perspective that time is not strictly a linear construct as it is
> framed in the Western academic tradition. Further to that, we must acknowledge
> that the spiritual and emotional aspects of human beings are of equal importance
> to their physical and mental natures. We must also be willing to understand that
> the spiritual and emotional domains are ways in which individuals come to know.
> (p. 193)

Historically, research related to Aboriginal Peoples has been based in a positivist framework, on the basis that "truth is determined via direct observability and replicability of findings. Meaning, experiences, and context are considered irrelevant and beyond the scope of inquiry" (Roy, 2014, p.118). This study defers to the Aboriginal interrelatedness of knowledge and emotions by drawing upon an interpretivist approach to Indigenous online education, building on the idea that knowing involves more than just experience (observability) but also understanding and judgment (Dunne, 1985).

Conceptual and Operational Definitions

The first step in identifying factors for a successful Indigenous online high school is a clear definition of success. Interpretations of the word "success" abound, depending on the viewpoint from which it is examined. While the literature regularly emphasizes a Western perspective of success for high school learners, which is often limited to achieving credits for graduation, success from an Indigenous perspective must be considered in all of its capacity to move beyond this limited interpretation, in order to gain a global understanding of success from an Indigenous frame of reference.

Definition of success. Tunison (2007) states that "success with respect to the *Learning Spirit* is typically seen through the lens of protecting and reclaiming language, culture, and tradition while focusing on long-term goals such as graduation and transitions to work and post-secondary institutions" (p. 13).   Tunison's definition of success will be used in this study. Key to this definition of success is the notion that the curriculum must be culturally inclusive and must prepare students for both academic and life-long success. A culturally inclusive curriculum can be understood as the "integration of Aboriginal content, history, culture, perspectives, and ways

of knowing into the regular curriculum, as well as specialized programs and greater knowledge, understanding, and respect for Aboriginal communities and cultures" (Friesen & Krauth, 2012, p. 14). Integration of all of these aspects of Indigenous culture will ensure that the crux of "Aboriginal education focuses on maintaining cultural identity while achieving formal education" (Munroe, Lunney-Borden, Murray-Orr, Toney, & Meader, 2013, p. 319).

Definition of culture. Kipuri (2009) defines culture as "a patterned way of life shared by a group of people" (p.52). According to Kipuri, Indigenous cultures are very rich and diverse and they foster profound spiritual relationships. Unlike Western cultures, Indigenous cultures are closely connected to land and natural resources – the people are not outside the realm of nature, but a part of it. There is a deep attachment to land and territory, and a collective perspective. Cultural values and activities or identity is a function of a group, not individuals (Kipuri, p. 52). For the purpose of this case study, culture is defined as shared knowledge, beliefs, traditions, customs, arts, morals, languages, and practices of a group.

Other definitions. The following definitions are used in this case study research project:

Aboriginal Peoples: First Nations, Métis, and Inuit Peoples. The terms *Aboriginal Peoples* and *Indigenous* are used interchangeably in this case study project.

Asynchronous model: Delivery of classes, exchange of ideas, and sharing of online resources and information at different times. While asynchronous delivery allows a student to access course materials at any time and does not require "real time" or "live" participation, it does not necessarily allow flexible start and end dates or continuous enrolment.

Attending-school: A brick-and-mortar school in a First Nations community. Most of these schools do not offer a full high school program and some do not offer any courses past grade eight.

Course developer: The subject matter expert (SME) who designs and develops courses for online

delivery in the Learning Management System (LMS).

Culturally inclusive curriculum: The inclusion of Aboriginal culture, art, history, perspectives,

and traditions in the regular Western curriculum.

Distance education: Delivery of education programs where the teacher and student are

physically separated (not in the same physical location). Delivery of the program could

be asynchronous, synchronous, or a combination of both.

Essential components: Aspects of a program or organizational structure or system that are

necessary for success. Without these components, the program, organizational structure

or system will fail. The terms *critical factors* and *essential components* are used

interchangeably in this case study.

Flexible study: Education programs that have flexible start and end dates and continuous

enrolment. Semester-based programs are not considered flexible.

Indigenous: First Nations, Métis, and Inuit Peoples. The terms *Aboriginal Peoples* and

Indigenous are used interchangeably in this case study project.

LMS (Learning Management System): An educational software system that serves multiple

functions, including course management, administration, tracking, and reporting; useful

for delivery of content, assessment, and providing asynchronous and synchronous

opportunities for interaction and collaboration.

Online learning: Organized formal instruction that is delivered to students via the Internet.

Role of culture: The purpose and function of culture, i.e. the driving force, the glue, or the

foundation of success.

Synchronous model: Delivery of classes, exchange of ideas, and sharing of online resources and

      information in real time and at the same time.

Virtual high school: An educational institution that provides online secondary level courses and

      that is accredited by a provincial department of education. The terms *online* and *virtual*

      are used interchangeably in this case study.

Chapter One Summary

      This chapter sets the stage for this case study by depicting its context and discussing the extent to which the research problem affects Canada as a nation. Figure 3 shows the conceptual framework that was developed during the process of researching and preparing the literature review that follows in Chapter Two. A description of the conceptual framework is as follows: The core circle represents Aboriginal ontological views which provide the basis for Aboriginal epistemologies; the second circle represents the two components of Aboriginal pedagogy; and the third circle depicts the essential components of an online learning system.

Figure 3: Conceptual Framework
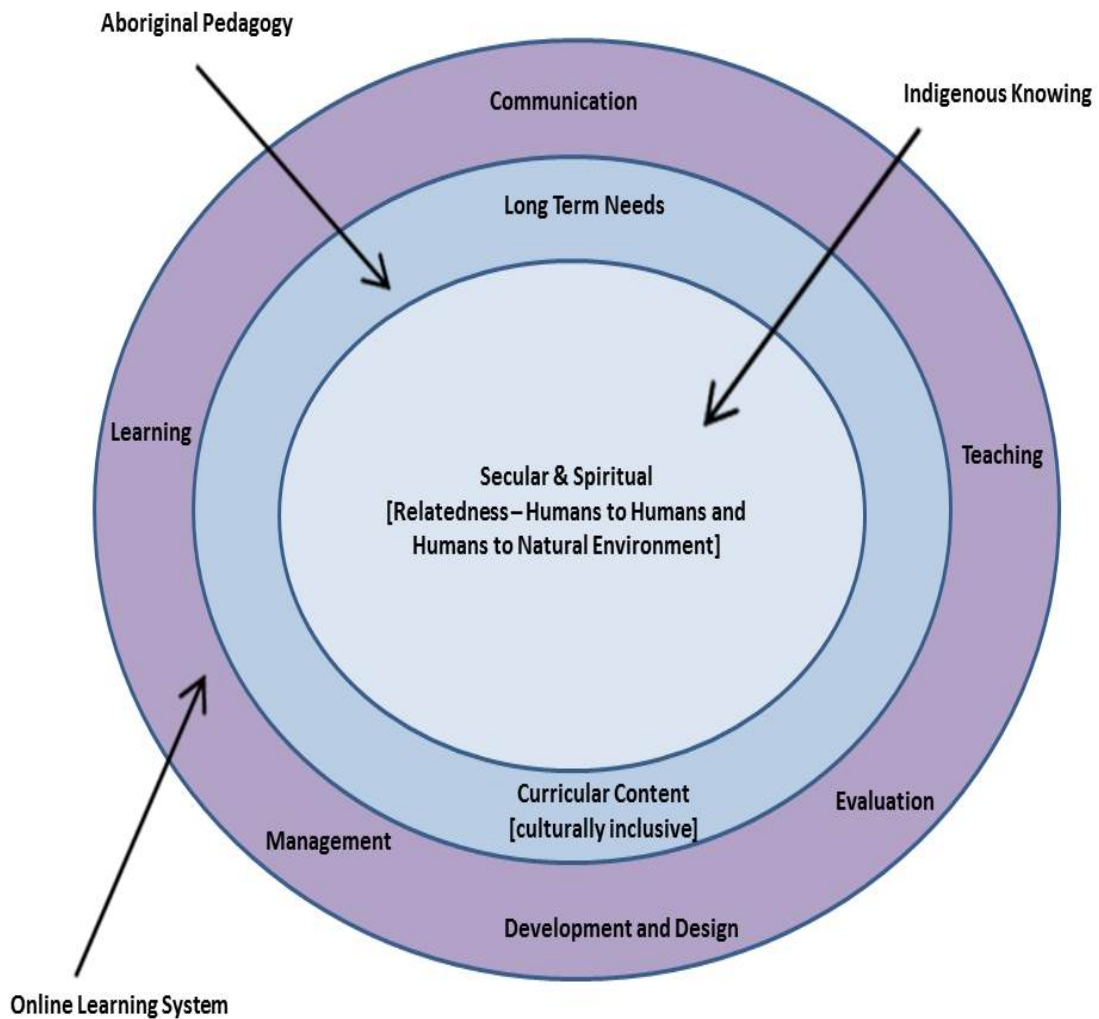
Throughout this case study, the reference to Aboriginal Peoples includes Inuit, First Nations, and Métis peoples. However, as "First Nations (FN) children are the fastest growing segment of the Aboriginal population in Canada" (Rogers & Rowell, 2007, p. 13), this study draws primarily on online learning in First Nations communities while also including limited references to Inuit and Métis groups.

Chapter 2: Literature Review

Introduction

The study of an Indigenous online education system requires a review of a broad range of literature that provides a deeper understanding of Indigenous online education. Therefore, the literature review focuses on the following seven topics: historical review of Aboriginal education; effective Aboriginal pedagogy; Aboriginal school culture; distance education; evolution of distance education; successful distance education; and the need for online learning in Aboriginal communities. This chapter develops the research context, connects this case study to previous research, and shows how this case study builds on existing research. Broad issues are discussed first and then the discussions move toward a narrow focus of studies that help explain the findings of this case study research.

Historical Review of Aboriginal Education

There are three phases of Aboriginal education in Canada and arguably, the first phase did not provide Aboriginal learners with a learning environment that allowed them to thrive or be successful. Nguyen (2011) outlines Brady's (1995) three phases of Aboriginal education in the subsequent paragraphs, which are also presented in Table 1.

The evolution of Aboriginal education policy in Canada stems from the British North America Act of 1867 and the Indian Act of 1876 (Carr-Stewart, 132). These Acts gave the federal government jurisdiction over Aboriginal education policies even though education is an area normally controlled by provincial

governments. According to Patrick Brady, the federal government's role in Aboriginal education can be characterized by three distinct phases (Brady, 1995). The first phase, and possibly the most infamous, was the creation of residential schools in which the federal government entered into agreements with numerous Christian denominations to create industrial schools that would partake in the education of Aboriginal children by teaching them the Euro-Canadian way of life (Brady, 350). Aboriginal children were sent away from their homes and forced to reside at the residential schools for extended periods of time and later it was reported that many endured mental, physical, and emotional abuse, ultimately hindering their development.

The period after World War Two signified the beginning of phase two and was marked by the new Indian Act of 1951 (Brady, 351). This Act allowed the federal government to enter into agreements with provincial governments and permitted Aboriginal children to attend provincially operated schools but these schools were culturally insensitive to the needs of Aboriginal children.

The third phase was characterized by the Indian Education Paper Phase One of 1973 that emphasized the need to improve Aboriginal education and transfer control of education back to Aboriginal society (Brady, 351). (Nguyen, 2011, pp. 235-236)

Table 1: The Three Phases of Aboriginal Education

Phase	Description	Government involvement	Schools
One	North America Act 1867 & Indian Act 1876	Federal government granted jurisdiction over Aboriginal education	Residential schools
Two	New Indian Act 1951	Agreements between the federal government and provincial governments	Aboriginal students could attend provincial schools
Three	Indian Education Paper 1973	Federal government initiates transfer of control back to Aboriginal communities	Schools run by Aboriginal communities

From a historical perspective, the idea of Westernized education is rooted in distrust and this has an impact on attitudes toward traditional schools. "The generations of Aboriginal Peoples who were forced to attend the residential school system are the parents and grandparents of the children and youth currently in primary and secondary school" (Pin & Rudnicki, 2011, p. 4). Aboriginal communities "are still facing serious psychological, identity, and identity-redefinition problems because of the injuries and losses they have suffered" (Wang, 2012, p. 53). As stated earlier, the Aboriginal students who had the unfortunate experiences of residential schools are now parents of school-aged Aboriginal learners, and the residential school experience has shaped negative attitudes towards formal schooling (Milne, 2016, p. 277; Agbo, 2011, p. 336). These parents and other community members support increased First Nations control of educational systems, including both online and face to face programs. "As early as 1972, in a paper on *Indian Control of Indian Education*, First Nations sought greater control over First Nations education, more parental involvement in decision making about their children's education, and better support for the promotion of First Nations languages and culture" (Aboriginal Affairs and Northern Development Canada, 2013, p. 2).

The need for First Nations to control their education systems and processes is

rooted in the contemporary colonial relationship between First Nations and the

Canadian state. More than a decade ago, the Canadian government's most

extensive Royal Commission of inquiry found that the historical treaties between

the Crown and First Nations were replaced with Canadian policies intending to

remove Aboriginal Peoples from their homelands, suppress Aboriginal nations

and their governments, undermine Aboriginal cultures, and stifle Aboriginal

identity (Royal Commission on Aboriginal Peoples, 1996). Government policies

continue to have an explicit goal to remove First Nations from remote and rural

regions so that the lands and resources can be exploited for commercial industries

such as mining and forestry (Alfred, 2009; Coulthard, 2007; Palmater, 2011). In

this context, [online education] can mitigate the destructive effects of government

policies designed to remove remote and rural First Nations people from their

lands. (Simon, Burton, Lockhart, & O'Donnell, 2014)

Furthermore, Nguyen (2011) argues that external control by the Crown has led to an erosion of

Aboriginal communities.

The Crown in Canada has been instrumental in the destruction of Aboriginal

communities, economies, and culture. In the tradition of empire-building, the

British stripped Aboriginals of their land, attempted to assimilate the Indigenous

population and change the power relations within Aboriginal societies. By doing

this the Crown changed what was once an egalitarian society into a class-based

society and consequently altering the livelihood of Aboriginal communities. More

specifically, the engine behind empire building — the expansion of the market

economy — changed Aboriginal communities towards the capitalist variety. That

is, Aboriginal communities began to lose their self-sufficiency and became

dependent on the colonizers for their livelihood. More importantly, Aboriginal

culture began to change and erode. (Nguyen, 2011, p. 232)

Recognition of the erosion of Aboriginal culture is key to understanding why there is a need for

culturally inclusive curriculum. Aboriginal education must facilitate cultural reconnection in an

effort to prevent any further cultural erosion so that communities can thrive and celebrate their

languages, cultures, ceremonial rites, and ways of knowing.

Effective Aboriginal Pedagogy

Within the wide context of education, the literature has revealed that the teaching

organization plays a critical role in supporting the process of creating knowledge and deepening

student learning. As Moore and Kearsley (2005) point out, "the sources of the content to be

taught and the responsibility for deciding what will be taught in an educational program is that of

the organization providing the program" (p. 12). Further to this, Moore and Kearsely state that

"in all education there has to be communication between a teaching organization and a learner"

(p. 15). What is most important in an Aboriginal context is that the teaching organization must

have an understanding of the needs of the learners – not just academic needs but cultural,

linguistic, and even spiritual needs. Inclusive education recognizes all of these areas.

Furthermore, the "purpose of this kind of inclusive education is to strengthen Aboriginal

worldview and perspectives, and to increase educational opportunities for all Aboriginal

students, thereby strengthening Aboriginal cultural knowledge and improving the coexistence of

Aboriginal and non-Aboriginal knowledge" (Wang, 2012, p. 54).

According to Tunison (2007), "effective pedagogy for Aboriginal learners must consider both the immediate needs of the learners (curricular content) and long-term needs of the Aboriginal graduate" (p. 20). Inclusive curriculum does this by "providing opportunities for full participation and equal chances for all students" (Wang, 2012, p. 54). Wang argues that public schools, not just Aboriginal learners, benefit from the inclusion of Aboriginal content and perspectives in curriculum. This different approach to learning will enhance the sense of connection and purpose among Aboriginal and non-Aboriginal youth, motivating them to understand each other better and further their studies (Wang, 2012, p. 54; & Munroe, Lunney-Borden, Murray-Orr, Toney, & Meader, 2013, p. 319). Above all, a culturally inclusive curriculum is centered on the learner: "what matters is that the individual learner achieves a successful outcome. The learner is the purpose" (Neidorf, 2006). Two quasi-experimental studies that present evidence of the causal effect of culturally inclusive instruction on academic outcomes include Tharp's (1982) study; and Lipka and Adams' (2004) study. Tharp's (1982) study of the Kamehameha Early Education Program (KEEP), a reading program for Hawaiian children that incorporated elements of Indigenous Hawaiian culture, provides evidence of positive effects of the program on reading test scores (p. 521). Furthermore, Lipka and Adams (2004) found that a culturally-based mathematics unit provided to Yup'ik students in Alaska had positive achievement effects (p. 28).

As mentioned earlier, the literature confirms the importance of Aboriginal control of the education of Aboriginal learners in an effort to reconnect students to their cultural identities. Distance education can be used to facilitate this cultural and linguistic reconnection. As Aboriginal populations continue to increase in Canada, there is an increasing need to improve educational opportunities and successful educational experiences for Aboriginal learners.

> Based on the 2006 Canadian census, Aboriginal Peoples account for 3.8% of the
> total population of Canada, an increase from 3.3% in 2001 and from 2.8% in
> 1996. Given these increases, the Canadian Aboriginal population has been
> identified as the fastest growing segment of Canada's population, increasing by
> 45% between 1996 and 2006. This rate of growth is nearly six times faster than
> the 8% rate of growth for Canada's non-Aboriginal population over the same
> period. (Rukholm et al., 2009, p. 139.)

Despite this population growth, according to the Report of the Senate Committee on Aboriginal Peoples (2011), seven out of ten First Nations high school students will not graduate and therefore "First Nations education is in crisis" (p. 1). The Report (2011) shows that for more than 35 years, numerous reports have highlighted "the very serious problems with the provision of First Nations education in Canada, including teacher training, retention and recruitment, the development of culturally-appropriate curriculum, language instruction, parental engagement, and funding necessary to deliver high quality education" (p. 1). As mentioned in the Report, there is a call for both reconnection of First Nations children to their languages, cultures, and communities as well as a transformation from paternalistic government relations to partnership relations. According to Wang (2012):

> The issue of Aboriginal culture in Aboriginal students' education is a subset of
> multicultural education, which is being applied across Canada, and has different
> meanings from province to province and from school to school. Some choose to
> focus on human relations and the activities that promote cultural and racial
> understanding among different groups, while others study groups individually,
> such as Black Studies and Women Studies. (p. 54)

Creating opportunities for dialogue around Aboriginal and non-Aboriginal relationships in

Canada as well as the history of Aboriginal education is important for all Canadians.

Furthermore, it is necessary to reiterate that the inclusion of Aboriginal culture in curriculum will

not only benefit Aboriginal learners but also non-Aboriginal students (St. Denis, Silver, &

Ireland, 2008, p. 4). However, there are challenges associated with achieving this due to issues,

including but not limited to the diversity of Indigenous cultures, economic constraints, lack of

Indigenous teacher education programs, limited Indigenous knowledge experts, and lack of

familiarity with Indigenous languages. According to Rice (2015), there are over 60 Indigenous

languages in Canada and they fall under 10 language families. Table 2 shows the Indigenous

languages in Canada. According to the 2011 census of Canada, only 17 percent of the Indigenous

population speak Indigenous languages (Statistics Canada, 2011 National Household Survey,

Statistics Canada and AANDC tabulations).

Table 2: Indigenous Languages in Canada

Language Family	Languages spoken in Canada	Location
Algonquian	Blackfoot (two dialects: Pikanii, Siksika); Cree (dialects: Plains Cree/Nehiyawewin, Woods Cree/Nthithawīwin, Moose Cree, Swampy Cree, Northern East Cree, Southern East Cree) and closely related Montagnais (dialects Western Montagnais: Piyekwâkamî, Betsiamites; Eastern Montagnais: Innu-Aimûn) Naskapi, Atikamekw/Nēhinawēwin/Nehirâmowin); Delaware (dialect: Munsee); Mi'kmaq, Maliseet-Passamaquoddy; Anishinaabemowin/Ojibwe/Ojibwa (dialects: Algonquin, Central, Eastern, Nipissing Algonquin, Northwestern, Odawa, Oji-Cree/Severn Ojibwa, Saulteaux, Western Saulteaux), Potawatomi/Neshnabémowen, Western Abenaki.	• Traditionally found east of Lake Winnipeg • Prairies • British Columbia • Eastern Canada
Dene (Athapaskan/Athabaskan/ Athabascan + Tlingit)	Athapaskan/Athabaskan/Atahbascan: Dane-Zaa/Beaver, Dakelh/Carrier/□□□, Tsilhqot'in/Chilcotin, Witsuwit'en/Babine-Witsuwit'en, Dene Sųłiné/Chipewyan, South Slavey/Dene Zhatié/Dene Dhah, Tłįchǫ	• Prairies • British Columbia

	Yatìi/Dogrib, Gwich'in, Hän/Han (Dawson dialect), Tsuut'ina/Sarcee/Sarsi, Tsek'ene/Tse'khene/Sekani, Dene/North Slavey (dialects Bearlake/Délı̨ne, Hare/K'ásho, Mountain/Shúhta/Shíhta), Tahltan/Tāłtān], Kaska/Danezāgé', Tagish, Northern Tutchone, Southern Tutchone, Upper Tanana.	
Eskimo-Aleut/Eskaleut	Western Canadian Inuktun (dialects Siglitun, Inuinnaqtun, Natsilingmiutut), Eastern Canadian Inuktitut (dialects Kivalliq, Aivilik, North Baffin, South Baffin, Nunavik, Nunatsiavut)	• Eastern Canada • Western Canada • Nunavut
Xaad Kil/Xaaydaa Kil/Haida (isolate)	Dialects in Canada: Haida Gwaii	• British Columbia
Iroquoian	Cayuga (two dialects), Mohawk (several dialects), Oneida, Onondaga, Seneca, Tuscarora, Wendat	• Eastern Canada
Salishan	Nuxalk/Bella Coola, Éy7á7juuthem/ʔayʔjuθəm-Saɬuɬtxw (dialects Comox, Sliammon, Homalco, Klahoose), Halkomelem (Halq'eméylem, Hul'q'umi'num', Halq'eméylem), Lushootseed, SENĆOŦEN/Saanich/Northern Straits Salish), St'át'imcets/Lillooet, Okanagan-Colville (several dialects), Shashishalhem/Sechelt, Secwepemctsin/Shuswap, Squamish/Sqwxwumish/Skwxwu7mesh, Straits (several dialects), Nłeʔkepmxcín/Thompson	• British Columbia
Ktunaxa/Kutenai/Kootenai (isolate)	Ktunaxa is spoken in Canada, with some speakers in the United States as well.	• British Columbia
Siouan	Nakoda/Stoney, Assiniboine/Nakota, Lakota (Teton), Dakota/Sioux (Yankton, Santee)	• Prairies
Tsimshianic	Sm'algyax./Coast Tsimshian, Ski:xs/Sgüüx.s/Southern Tsimshian, Gitsenimx./Gitxsan/Gitksan, Nisga'a/Nishga/Nass	• British Columbia
Wakashan	Xenaksialak'ala/Haisla, Hailhzaqvla/Heiltsuk-Oowekyala (dialects Heiltsuk/Bella Bella, Oowekyala), Kwak'wala, Nuu-chah-nulth/Nootka, Diitiidʔaatx/Ditidaht/Nitinat/Nitinaht	• British Columbia

Aboriginal School Culture

The current options for First Nations students to attain a high school education that prepares them for post-secondary entrance, the job market, or career training include: 1) federal schools controlled by the Department of Aboriginal Affairs and Northern Development Canada; 2) local band-operated schools, or 3) provincial/territorial schools (Report of The Senate Committee on Aboriginal Peoples, 2011, p. 9). However, Aboriginal education in Canada has a dual mandate: to help prepare students for long terms goals such as graduation, post-secondary entrance, and workforce participation, and to reconnect them to their Indigenous languages, history, and cultures (Wang, 2012; Tunison, 2007; Report of the Senate Committee on Aboriginal Peoples, 2011).

Reconnection to and reclamation of Indigenous cultures is crucial for learner success, along with the uptake of a culturally inclusive curriculum, provide pathways to achieving this. The underlying and consequential assumption here is that Indigenous knowledge is different from Western knowledge. Aboriginal Peoples define Indigenous knowledge as "an ancient, communal, holistic and spiritual knowledge that encompasses every aspect of human existence" (Brascoupé & Mann, 2001). According to Brascoupé and Mann, Indigenous knowledge contains the following major areas:

- Agriculture and horticulture
- Astronomy
- Forestry
- Human health, traditional medicines and healing
- Knowledge of animals, fish and ecological systems
- Sustainable use of natural resources and the environment

- Traditional classification systems for living and other resources

- Learning systems and oral traditions

- Spirituality

- Symbols

- Traditional arts and culture

"Artwork, designs, symbols, scientific and ecological methods, crafts, music, dance, songs, stories, foods, medicines and wellness (or disease-prevention) products – all draw on Indigenous knowledge" (Brascoupé & Mann, 2001, p. 1). Totem poles, stories, dances, learning circles, wood carvings, artwork, building canoes, drums and rattles are all examples of artifacts and practices that incorporate Indigenous knowledge. First and foremost, Indigenous knowledge differs from science in its way of accessing knowledge – specifically, in how it approaches, communicates, teaches, and explains knowledge. The main differences between science and Indigenous knowledge are presented in Table 3, as follows:

Table 3: Differences Between Science and Indigenous Knowledge

Factor	*SCIENCE*	**Indigenous Knowledge**
How approached	Compartmental	Holistic
How communicated	Written	Oral
How taught	Lectures, theories	Observations, experience
How explained	Theory, "value free"	Spiritual, social values

Source: Brascoupé, S., & Mann, H. (2001).

By providing a framework that incorporates Indigenous knowledge, distance education programs offered by First Nations educational groups in Canada allow students the opportunity to receive instruction that is culturally and linguistically sensitive. Therefore, learning is more

relevant to the students as "the student's learning environment is also part of the distance education system, having considerable impact on the effectiveness of those parts of the system controlled by the educational agency" (Moore & Kearsley, 2005, p. 17). Fryberg, Troop-Gordon, D'Arrisso, Flores, Ponizovskiy, Ranney, and Burack, (2013) state that:

> Understanding the relationship among individual cultural identities, school cultural values and norms, and academic performance is not simply a matter of differentiating whether the school culture (i.e., teacher's views, curriculum) reinforces the majority or minority culture, but rather how the school culture interacts with the student's individual cultural identification. (p. 74)

Is there a relationship between school culture and student success? It is reasonable to state that individual cultural identities of Aboriginal learners are reinforced by the cultural identity of Aboriginal schools or programs because "individuals absorb 'nutrients' from interactions with the social environment, which provide support of autonomy, competence, and relatedness" (MacTeer, 2011, p. 129). A study conducted by Verna St. Denis contained interviews of 59 Aboriginal teachers across Canada including First Nations, Métis, and Inuit Peoples. The teachers who participated in the study said they valued the opportunity to teach Aboriginal history and culture to foster responsible citizens, to challenge negative stereotypes of Aboriginal Peoples, and to serve as role models (St. Denis, 2010). Incorporating Aboriginal culture into K-12 curriculum can have significant results, as demonstrated by schools throughout Canada. Table 4 shows some examples of how provinces have integrated Aboriginal culture into K-12 curriculum across Canada.

Table 4: Examples of How Aboriginal Culture Has Been Included in Curriculum Across Canada

Location	School/s	How Aboriginal culture has been included in curriculum
Saskatchewan	Sakewew High School	Sakewew High School opened its doors in the fall of 2002, providing Aboriginal students in North Battlefords with a place where they can learn about Aboriginal culture as well as reading, writing, and arithmetic. (Wang, 2012, p. 54)
Saskatchewan	Mary's Community School	At Mary's Community School, hoop dance resource kits and other projects include material devoted to the construction and significance of the teepee, Métis history and culture, and the Aboriginal's unique relationship with the environment. This school has worked hard to make Aboriginal content a part of their everyday lives in the classroom. (Wang, 2012, p. 54)
Toronto, Ontario	First Nations School of Toronto	The Toronto District School Board, the largest school board in Canada, has taken a number of steps to reach out to and support its Aboriginal students since the board was created in January 1998. These efforts include offering tradition-based curriculum through the First Nations School of Toronto and including Aboriginal history and perspectives across the curriculum. Based on the statistics gathered from Aboriginal organizations (i.e., the Native Canadian Centre and Native Child and Family Services), the Board recognizes from the outset the need for programs such as mentoring, academic tutors, language program, and addiction counseling. (Wang, 2012, p. 55)
Niagara Region, Ontario	Five urban schools	In the Niagara Region, teachers have developed Native support circles in five urban schools designed to assist "Aboriginal students who have difficulty making the cultural transition from their home to their school. Support circles emphasize Native cultural values and procedures, allowing students to express personal concerns or raise questions about school programs. (Wang, 2012, p. 55)
British Columbia	All regions	In British Columbia, although improving Aboriginal education in the province is a priority for the government, efforts to provide Aboriginal students with a culturally relevant school curriculum are only in the early stages. Currently, 14 of the province's 60 school districts have Aboriginal Education Enhancement Agreements in place, with another 30 close to being finalized. The First Nations communities with agreements in place are pleased to have input into what goes on in the schools that their children attend. The provincial government also provides funding to schools and school districts so they can make such improvements on their own. For example, for each Aboriginal student enrolled, a school district gets $950 in additional funding from the province, specifically for providing programs to its Aboriginal students (Petten, 2004). Such initiatives that involve significant cultural elements help tailor programs to Aboriginal students, which in turn encourage the students to stay in school and do as well as non-Aboriginal students. (Wang, 2012, p. 55)
Alberta	Alberta Learning & Edmonton Public Schools	In Alberta's public schools, Aboriginal content and perspectives used to be limited to the Aboriginal 10, 20, and 30 courses offered to high school students. Starting in 2005, Alberta Learning (a provincial commission on secondary education) introduced a newly revised social

		studies curriculum that reflects Aboriginal perspectives and other similar areas of the curriculum as well. Edmonton Public Schools have completed a report ("Infusion of Aboriginal Perspectives into Alberta Core Curriculum") that Alberta Learning will use to develop a curriculum to represent Aboriginal students more suitably (Petten, 2004). (Wang, 2012, p. 55)

First Nations school governance. The third phase of Aboriginal Education was established by the Indian Education Paper (1973) that highlighted the need to improve Aboriginal education and hand control of education back to Aboriginal society (Nguyen, 2011, p. 236). However, with this responsibility for control of education systems come many barriers and hurdles. Each band council is then responsible for "hiring teachers, including specialist teachers who may rotate among schools based on need; negotiating salaries and terms of teacher employment; designing curriculum; and testing and reporting student outcomes" (p. 30). Graham (2012) notes that First Nations governments are the largest in the world based on per capita expenditure (p. 34) and argues that large size gives way to political risks, particularly where the government is the "only game in town" (p. 34). Graham states that many of the First Nations communities are too small to efficiently deliver the services they are responsible for and calls for aggregation of First Nations education governance (p. 39). A second problem associated with First Nations education governance is the departments and agencies of the federal government.

> Part of the problem is that the sheer number of federal departments and agencies
> dealing with First Nations – more than 30 – creates a difficult coordination
> challenge under the best of circumstances, especially since the majority have only
> a peripheral interest in First Nation matters. Even the much smaller number of
> departments and agencies with major spending programs aimed at them create an
> enormous reporting burden for First Nations. (Graham, 2012, p. 43)

Richards and Scott (2009) state there are approximately 500 reserve schools across Canada and while some of these schools may have links with adjacent provincial schools, the reserve council makes the administrative decisions with little consultation with other reserve schools or provincial schools (p. 43). According to the Report of the National Panel on First Nation Elementary and Secondary Education for Students on Reserve (2012), increased accountability is essential to improving First Nations education:

> Children in schools must be accountable to teachers and administrators for their behaviour and their participation in classrooms and other activities. Teachers must be accountable to school administrators and professional organizations for their performance and for their adherence to standards in the teaching of children. Schools must be accountable to governing councils and boards and to education authorities for the quality of child centered instruction and programs, for personnel and financial management and for school activities generally.
>
> In a well-developed system, schools and governing councils or boards are accountable to an education body such as a government department for their oversight, management and administration of their schools, for the quality and standards of education offered in their schools and for the use and disposition of funds, including those provided by government, which in most cases make up almost the whole of funds available. Resources must be used to support children. Government departments are accountable to all parts of the system, including but not limited to parents, communities, parliaments and legislatures for the adequacy of the resources provided to support the education of children and for the appropriateness of the instruments used to account for resources provided. (p. 27)

In 2014, Richards predicted that if the status quo persisted without greater professionalization of reserve schools, "there will be pockets of on-reserve education excellence led by exceptional chiefs and councils. Coalitions of First Nation and provincial politicians will undertake tentative reform initiatives in some provinces. Overall, however, there will be far too many underperforming schools" (Richards, 2014b p. 49). Online Indigenous high schools can help address this issue. If they are set up utilizing a systems view (Moore & Kearsley, 2005), various band councils could work together to provide financial and administrative support so that students from many different on-reserve schools could access a complete high school program without leaving home.

Mandate of band-operated schools. Attending-school refers to a brick-and-mortar school in a First Nations community. These schools are on-reserve and are band-operated. According to the Report of the National Panel on First Nation Elementary and Secondary Education for Students on Reserve (2011), approximately 40 percent, or about 45,000 First Nation students who live on reserves attend schools in the provincial system, and the percentage of students who attend band-operated schools is greater than 50 percent (p. 14). First Nations local community schools have a dual responsibility – to provide "students with an academic foundation that promotes success in higher education, and [to provide] a learning environment that embodies the cultural and linguistic teachings of home and community" (Oskineegish, 2014, p. 508). Richards (2012) echoes this and states that "Reserve schools have two major tasks – to teach traditional culture and the core competencies of reading, writing, science and mathematics necessary for success in the mainstream economy" (p. 29).

Richards argues that notwithstanding some exceptions, on-reserve schools are unsuccessful at both mandates. What are some of the issues and challenges of First Nations local

community schools? The first challenge stems from the hiring and retention of qualified and experienced teachers. As these schools are on-reserve and in remote and rural areas, they do not attract provincially certified teachers who are highly qualified, experienced, and experts in Aboriginal pedagogies (Oskineegish, 2014, p. 509). A second challenge stems from the design of the curriculum. The results of this case study show that First Nations educational agencies utilize the provincial curriculum because Aboriginal curriculum are not available and are too expensive to design and develop.

Oskineegish (2014) states that "In many First Nations schools there remains a division between First Nations knowledge and Western knowledge" (p. 510). Oskineegish argues that First Nations cultural and language instruction is often under-valued, under-resourced, and Western knowledge is given the majority of instruction time. "This division and disregard of cultural and linguistic teachings sends the harmful and false message that First Nations students, their community, and their cultural teachings are less valuable than Western knowledge" (p. 510). A third challenge is the lack of technology infrastructure that continues to be an issue in rural communities that are long distances away from urban centers (Indigenous and Northern Affairs Canada, 2009, p. 28). Poor physical conditions of the buildings, ineffective teachers, division and disregard of cultural and linguistic teachings all help to contribute to poor attendance and completion rates.

According to the Report of the National Panel on First Nation Elementary and Secondary Education for Students on Reserve (2011), "First Nation education should reflect and incorporate First Nation culture in order to provide the basis on which learning inevitably depends and in order to help confirm a positive sense of identity in students as First Nation persons" (p. 20). Additionally, "First Nation education must take place in a safe and healthy environment" (p. 20).

Moreover, First Nations schools "housed in old, worn pre-fabricated buildings and trailers that contain unwanted wildlife, or are poorly heated or over-crowded, will defeat any sense of pride or social comfort, and will only devalue the school experience and undermine student commitment to attendance and engagement" (p. 20).

Thus far, the literature highlights several issues that need to be addressed within First Nations education systems. These issues include; lack of full high school programs on-reserve, teacher recruitment and retention, teacher training, poor physical conditions of on-reserve schools, and a division between First Nations knowledge and Western knowledge. Online Indigenous high schools can help address some of these issues and the subsequent section describes online learning and how it could be used within Indigenous education systems.

Distance Education

Distance education can be characterized as "an educational process in which for the majority of the time the learning occurs when the teacher and learner are removed in space and or time from each other" (Bradley & Yates, 2002, p. 7). Bates (2005b) also provides a simple definition of distance education: "Students can study in their own time, at the place of their choice (home, work, or learning center), and without face to face contact with a teacher" (p. 5). "In distance education, technology is the sole or principal means of communication which of course is not the case in a [brick-and-mortar] classroom" (Moore & Kearsley, 2005, p. 3).

Online learning. Online learning is a form of distance education that can be defined as organized formal instruction that is delivered to students via the Internet. "The terms e-learning and online learning are often used interchangeably, although e-learning can encompass any form of telecommunications and computer-based learning, while online learning means using

specifically the Internet and the Web" (Bates, 2005b, p. 8). This paper uses the term online

learning consistently and does not interchange the two terms.

It is also commonly recognized in the literature that online learning "is emerging as a

solution for delivering online, hybrid, and synchronous learning regardless of physical location,

time of day, or choice of digital reception/distribution device" (Guemide & Benachaiba, 2012, p.

37). Moreover, "the flexibility of online learning may enhance learner's motivation because it

provides autonomy, thereby aligning learning pace with learning preferences" (MacTeer, 2011,

p. 131). Another important point is the fact that "digital technologies are gaining overall

acceptance in Indigenous communities on a global level" (Eady & Woodcock, 2010, p. 25).

According to Weiyuan (2013), online learning can be categorized in three ways. "First

generation [online learning] is a one-way technologically-driven transmission mode; second

generation [online learning] is an interactive pedagogically-driven learning mode; and third

generation [online learning] is a comprehensive mode of [online learning]" (Weiyuan, 2013).

Considered in a dynamic, culturally sensitive light, the latter is most effective in that it allows

multi-way communication that can incorporate culturally-focused curriculum.

> The literature on [online learning] has identified different factors which affect
>
> [online learning] effectiveness. These factors which comprise different aspects
>
> and participants in [online learning] are: The learner's control, social interactivity,
>
> learning types as well as system design and its usability. (Perez-Gonzalez, Soto-
>
> Acosta, & Popa, 2014)

Online learning effectiveness within Indigenous contexts must include cultural reconnection as a

critical factor because these programs are implemented not only to respond to the need for an

expansion of educational opportunities, but even more so to reconnect Aboriginal learners to

their languages, cultures, and communities. Albeit learners' control, social interactivity, and system design and usability are important factors, the literature reveals these are not enough to ensure success for Aboriginal learners. A cultural component needs to be included as well.

Indigenous communities throughout Canada and beyond have been adopting online learning since the late 1990s to provide alternative programs for high school students within their communities which don't require physical attendance to a brick-and-mortar school (Potter, 2010, p. 14). The benefits are numerous – "educational organizations see advantages in making their programs accessible via a range of distributed locations, including on campus, home and other community learning or resource centers" (Sevinç Çağlar & Turgut, 2014, p. 43). Similar to post-secondary distance education, online learning in secondary schools "gives students and their families living in remote and rural regions the option to stay in their communities while they study instead of moving to the cities where the institutions are based" (Simon, Burton, Lockhart, & O'Donnell, 2014). McMullen and Rohrbach (2003) state that "remote Aboriginal communities across Canada have intelligent, resourceful people who, if provided the appropriate courses delivered in a culturally and technologically appropriate manner, will be successful" (p. 11).

Evolution of Distance Education

"The basic idea of distance education is simple enough: students and teachers are in different places for all or most of the time that they learn and teach" (Moore & Kearsley, 2005). Of course, distance education first started as paper materials delivered by postal mail. Therefore, the earliest interpretation of distance education implies the absence of a teacher. As Rumble (2001) states, "this does not, however, mean the total absence of a teacher."

According to Stenerson (1998), since its inception, which dates back over 100 years, distance education has generated a conflict with many traditional colleges and universities. Bates (2005a) states that distance education can bring increased access and support innovation in teaching. Today, many institutions, both secondary and post-secondary, are using distance education and distance technologies to aid instruction. Distance education evolved from the first generation one-way communication, started in 1840 by Isaac Pitman who offered shorthand courses via mail, to the sixth generation which includes multi-way communication via the Internet and Web 2.0 tools such as blogs and wikis.

Scholars and researchers are investing much time in the field of distance education and myriad research themes are prevalent in the literature: the role of interaction in distance delivery models, barriers that affect usage of distance technologies, how collaborative learning environments facilitate social constructivism, etc. Notions of culture have been found to be particularly significant, with discussions around globalization of educational systems sparking research interests regarding how cultural factors affect the success of distance education. Abderrazek (2014) looks at the relationship between culture and information systems based on Markus' (1983) theories:

> To account for the success or failure of the technology adoption, Markus (1983)
> has identified three basic theories that model this relationship between culture and
> information system (IS): system-determined theory, organization determined
> theory, and interaction theory. System-determined theory holds that the success or
> failure of a technology adoption will depend on features inherent in the
> technology rather than on organizational culture (Markus, 1983). In contrast,
> organization-determined theory proposes that the success or failure of a

technology adoption depends on organizational culture (Markus, 1983). Common

sense suggests taking into account both the system and the culture into which it is

introduced. The third theory, interaction theory, holds that the success or the

failure of technology adoption depends on the interaction of the technology with

specific traits of the organizational culture over time (Markus, 1983). From this

perspective, we can explain why members of different organizations respond

differently to the same system. (Abderrazek, 2014)

This study will not provide any pre-determined theoretical ideas about how technology interacts

with organizational culture. As this case study focuses on an online high school, technology will

be discussed, but only in terms of its relevance to the analysis of the key factors that contribute to

the success of the online Indigenous high school.

      Synchronous and asynchronous delivery. When the teacher and learner are separated

by either physical space or time, technology can be used to deliver education programs. There

are two types of delivery models that can be used: asynchronous or synchronous. "Asynchronous

[online learning], commonly facilitated by media such as [learning management systems], email,

and [online] discussion boards, supports work relations among learners and with the teacher,

even when the participants cannot be online at the same time" (Hrastinski, 2008). Synchronous

learning, on the other hand, requires real-time participation among teacher and students, and

draws on "same time" technological tools such as web conferencing technology, instant

messaging, live chat, video conferencing and telephone. While asynchronous distance education

provides more flexible options, synchronous technology allows for real-time communication

exchange between students and the teacher, which can be argued to more akin to traditional face-

to-face classroom scenarios. In spite of its limitations – mainly, the need for teacher and student

to meet at the same time using some type of communication medium – there are many benefits to a synchronous model, including the ability to "check in" on student progress in real time. "In [online learning], without synchronous teacher-learner interaction, it is much harder for a teacher to realize if learners are still on task and able to follow the course or likely to drop out" (Ertl & Helling, 2014). Furthermore, adding a synchronous component to an online program addresses the concern of alienation that students can experience in online environments that do not offer "live" interaction.

> Alternatively, research has shown learners may experience a sense of isolation and alienation in an online environment. Through a questionnaire-based survey of 522 online learners, Wei, Chen, and Kinshuk (2012) found that user interface and social cues have significant effects on social presence reducing the feelings of isolation and alienation which in turn affects learning performance. Sun and Rueda (2012) surveyed 203 online higher education students [and] strongly correlated emotional engagement with interest, "suggesting that it is important to facilitate emotional engagement by increasing student interest." The flexible and self-paced nature of online learning has the potential to motivate and engage students in active learning by replacing lecture time with online and face to face discussions, group and individual work, as well as providing instantaneous feedback, and one-on-one support. (Corry & Carlson-Bancroft, 2014)

In addition to decreasing learners' sense of isolation, good use of technology, interaction with students, good assessment practices, adherence to best practices, and instructional design are commonly recognized in the literature as key contributing factors to success (Stevens, 2013). The literature reveals that a combination of synchronous and asynchronous delivery can lead to

greater success in courses offered via the Internet (Ertl & Helling, 2014; Malik, 2010; Hrastinski, 2008). By the same token, this combination of delivery models could help increase success in online Indigenous schools.

Meeting the needs of online teachers is also crucial to providing meaningfully structured learning experiences within online spaces. "The quality of online programs in higher education is strongly correlated with how the professional development approaches respond to the needs of online teachers. These approaches are critical in helping online teachers adopt online pedagogical practices and reconstruct their teacher persona in an online environment" (Baran & Correia, 2014). The same would be true for online teachers in the K-12 sector.

Successful Distance Education

Minnaar (2013) argues that the promise of successful distance education remains unfulfilled in many post-secondary and secondary institutions due to poor planning and implementation. Moore and Kearsley (2005) recommend that distance education programs utilize a systems view in order to be successful. The system must include student learning, appropriate teaching, effective communication between student and teacher, sound curriculum design, and overall good program management. According to Stenerson (1998), it is important that a distance education system be customized and designed to meet the needs of the student. Bates (2005a) states that conditions for success in a distance education system can be broken into essential parts: students, course design, and course delivery. Bates argues that research into successful models of distance education needs to be integrated with decision-making within the distance institution. Stenerson also suggests that the design of the distance education system

must come from both the "how" (epistemology) and the "what" (ontology). Stenerson argues that to begin investigating a distance initiative, it is imperative that institutions apply systems theories. Not to do so could result in both financial and academic disaster (Stenerson, 1998, para 49).

Needs of online learner. Learner needs can originate from lack of online learning readiness, academic gaps, or deficient technical skills. Owens-Hartman (2015) investigates high school students' perceptions about their technology skills and argues that online high school students have an inflated technology self-perception, which means they perceive their technology skills to be higher than they are. Owens-Hartman states that there is limited research on high school students' self-efficacy – in other words, students' belief in their ability to perform well – for online learning. However, technology skills are not the sole requirement for successful online learning. Technical factors (access and skills), environmental factors (personal learning environment), personal factors (character traits), and various learning characteristics (which successful online students exhibit) all contribute to learner success (Phu, Vien, Lan, & Cepero 2014, p. 6).

According to ChanMin, Seung Won, Cozart, and Hyewon (2015), student motivation and student engagement are critical to success for online high school students. "Motivation and engagement do not always coexist. In other words, there could be motivation but without engagement (e.g., only wanting something but not actually doing it)" (p. 262). ChanMin et al. argue that effort regulation (i.e. taking action) transforms motivation into engagement and students must learn how to apply metacognitive regulation (i.e. thinking strategies) and effort regulation. "Such regulation happens more easily when students engage in the learning tasks that are (a) perceived easy to execute and (b) interesting and enjoyable" (p. 262). If students are

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unsuccessful in their own self-regulation, they will depend on the online teacher to help them transform motivation into engagement.

   Effective online instruction. According to Borup, Graham, and Drysdale (2014), there are five elements of teacher engagement that online high school teachers must apply to ensure effective online instruction: facilitating discourse (with parents and teachers), instructing (not teaching), nurturing, motivating, and monitoring. Savery (2010) states that online high school teachers must be VOCAL: "Visible, Organized, Compassionate, Analytical, and a Leader-by-example [in order to] improve their performance in the online instructional environment" (p. 149). In addition to this, online high school teachers must have the technical skills needed for online course design and delivery, be knowledgeable about online pedagogy, and be content experts. Kerr (2011) expands on this and states that successful online high school teachers need to "provide timely feedback, encourage student-student interaction, consider students' technology access when planning learning activities, guard against diminishing the value of content knowledge, and use their online course to teach content and literacy skill building" (p. 28).

The Need for Online Learning in Aboriginal Communities

   Forced displacement resulting from a lack of on-reserve educational opportunities is a harsh reality faced by many Indigenous students as they enter secondary school. A number of First Nations students in Ontario were forced to leave their home communities to attend high school in urban regions, with negative consequences (Potter, 2010).

   For decades, students in most of Canada's remote First Nation communities had
   no choice other than to leave their home communities if they wished to pursue a

high school education. Many communities in the Nishnawbe Aski Nation (NAN)

territory did not have the numbers to financially justify a high school funded

through the federal Department of Indian and Northern Affairs. So each year

communities in the north were emptied of students age 13 and above who

travelled to cities and communities, as far away as Toronto, to try and attain the

secondary education that other Canadians take for granted in their home

communities or area. Many of these students experienced a shock in culture,

being separated from their parents and families, education programs not designed

for First Nations students, and new peer influences. Some students experienced

cycles of failure, as they tried year after year to make it in this new system only to

be sent home after a few weeks when it was established that they were not doing

well. Sadly, many students did not make it home alive, with an unbelievable

number of the First Nations youth returning home in caskets due to an inability to

handle the changes that life away from home brought. (Potter, 2010, p. 14)

According to McMullen and Rohrbach (2003), "the search by remote Aboriginal students for the

benefits of Western education, while maintaining their culture, traditional learning, and

language, leads to conflicting motivation as the focus of the two approaches can be very

different" (p. 62). For example, "Aboriginal Peoples traditionally learned by listening to stories

told by the Elders and not by reading textbooks or by attending formal classes with a teacher

from outside their community" (McMullen & Rohrbach, 2003, p. 69). Tunison (2007) points out

that "historically, in First Nations communities learning was not compartmentalized away from

'real life'; rather, First Nations' epistemological structures viewed learning simply as a fact of

life" (p. 6). Another important point to consider is "often Westernized cultural logic dominantly

overrides the more subtle attributes offered by Indigenous cultural logic" (Eady & Woodcock, 2010, p. 31). On the other hand, it is imperative to remember that while "cultural experiences do have an effect on a child's learning style, it is important not to stereotype all children within a culture" (Rogers & Rowell, 2007, p. 15).

The literature reveals that not only is there a need for online education in Indigenous communities, but also online (distance) education is the only way to connect students and teachers who are geographically separated during times of extreme weather conditions. Philpott, Sharpe, and Neville (2009) examine the perspectives of students, educators, and parents involved with high school online courses in Aboriginal communities in Labrador. "A theme that emerged early was a sense of surprise and relief that these students were able to meet with academic success in these courses and compete with their provincial counterparts" (Philpott et al., 2009). The online environment was found to be particularly conducive to this success: "The dominant theme that emerged from the data was wide-spread recognition of the critical importance of e-learning in these communities" (Philpott et al., 2009).

The need for online learning in Aboriginal communities also becomes apparent when viewing education through a socio-geographic lens, in that the online learning environment can establish a strong sense of connection between members of displaced communities. "For those communities that have experienced displacement from their traditional territories, digital media technologies provide a means to overcome this socio-geographical separation and can be used as a tool for communication between their members" (Corbett & Mann, 2012).

Perhaps the most striking Canadian example of the need for online and distance programs is in the newest territory, Nunavut.

From a geographic perspective, Nunavut seems like a natural candidate for

distance learning programs. Its 30,000 residents live in 28 communities with

populations ranging in number from 140 to 6,200 scattered across the northeastern

portion of Canada's landmass. The territory constitutes one-fifth of the entire

country, nearly 2 million square kilometers. There are no roads between

communities or between Nunavut and southern Canada, and except for

snowmobile trails and a brief shipping season from August to October, only

transportation by air is available. Bringing people together is expensive at the best

of times and is often impossible because of extreme weather conditions. Even so,

all communities have satellite access to TV, radio, and the Internet. (McAuley &

Walton, 2011, p. 18)

Based on the example of Nunavut, it can be stated that there are instances where online learning

is not only a good alternative but truly the only alternative. Therefore, it is important that

delivery of online learning and development of curriculum are supported by the intention of

providing good quality education and not haphazardly put in place. Furthermore, it is important

to consider that while educators may successfully connect to Aboriginal students in rural

communities electronically, it does not guarantee "an effective or meaningful online learning

experience for Aboriginal Peoples. To provide an effective teaching and learning experience, we

need to become aware of Aboriginal Peoples' ways of knowing, and include this knowledge in

our pedagogical approaches to teaching and learning" (Gordon, Hodson, & Kitchen, 2014, p. 3).

Online learning for K-12 in Aboriginal schools. There are four K-12 distance

education programs under federal jurisdiction (Barbour, 2014). This is a small number when

considering the total rate of attendance in K-12 distance education programs in Canada. In 2012-

2013, nearly 285,000 students participated in distance programs (Barbour), with less than 1% of students in federally funded programs (Barbour).

KiHS was the first school in Ontario (and one of the first in Canada) to offer First Nations students the opportunity to remain in their home communities while receiving a high quality education. KiHS provides an online teacher and a local teacher for students. The online and local teachers work together to provide high school programs for students who attend a physical classroom in the remote communities where the local teacher provides support while instruction is given by the online teacher. Both the local and online teachers are certified in Ontario. Barbour and Ferdig (2011) identify the three most common classifications of virtual high schools: supplemental programs, full time programs, and blended programs. "Supplement virtual schools are programs in which students are enrolled in a traditional physical school and enroll in one or more online courses to supplement their in-school courses" (Barbour & Ferdig, 2011, p. 56). KiHS and Wapaskwa Virtual Collegiate in Winnipeg, Manitoba are examples of supplement virtual schools.

The role of Indigenous culture in shaping success. The literature shows that First Nations students are not meeting with success as defined by the standards of Western society. Success, though, can be defined in different ways, and through the lens of Western society, may be limited to graduation rates with test scores and other data to prove successful learning. "Given the history of Aboriginal Peoples in Canada, public demand for data to 'prove' successful learning may be interpreted as paternalism and seem like just one more way to impose external control of Aboriginal education" (Tunison, 2007, p. 7).

It is important to consider individual culture and organizational (school) culture alongside planning for teaching and learning, curriculum development, course development, course design,

course management, course delivery, clerical staffing, administration, and evaluation. When individual culture and organizational culture are taken into consideration, the decision as to the most appropriate form of online learning is better informed.

Hick (2002) investigates the success of First Nations students in a first year university social work course. Hick's study finds that the barriers to success of an online course include: lack of access to computer equipment and Internet connections in remote communities; lack of knowledge of learners on how to use e-mail, conferencing and Internet browsers; and the need to motivate learners to consistently go to the course on their own time and on a consistent basis (p. 279). Solutions to physical or extrinsic barriers can be easily identified, for example, purchasing computer equipment and providing training on how to send email. However, addressing intrinsic barriers is more challenging, for example, motivating learners to go to the online course consistently. Perhaps, this is where understanding culture of the learner is critical. In order to improve barriers such as learner motivation, there needs to be an understanding of the individual in a cultural context.

The need for a culturally inclusive curriculum. Indigenous distance education high school programs in Canada are specifically targeted at Indigenous students. These programs provide opportunities for Aboriginal students to engage in distance learning as an alternative to traditional face to face instruction. McMullen and Rohrbach (2003) provide a list of some secondary and post-secondary Indigenous distance education programs across Canada that use a culturally inclusive curriculum, including: Wahsa Distance Education Centre (http://www.nnec.on.ca/Wahsa) and Keewaytinook Internet High School in Northwestern Ontario (http://www.kihs.knet.ca); Aurora College in Northwest Territories (www.auroracollege.nt.ca); Cree School Board and Heritage College in Northern Quebec

(http://cegep-heritage.qc.ca or http://www.cscree.qc.ca); Headwaters Education Centre and

Northlands College in Northern Saskatchewan (www.northlandscollege.sk.ca); and Kwadacha

Nation in Northern British Columbia (http://www.kwadacha.com and http://www.cnc.bc.ca and

http://bcou.ca).

When looking at a practical application of a culturally inclusive curriculum, it is

important to remember that the concept of traditional school as defined by Western society may

not necessarily be idealized (i.e., focus on core subjects, test scores, and graduation rates). For

example, "specific programs and practices advocated by many Aboriginal communities and

organizations include the teaching of traditional languages, the inclusion of Aboriginal history

and culture in the curriculum, experiential learning, bringing Elders into the classroom, and a

host of other locally defined practices" (Friesen, 2012, p. 21). Language reclamation is critical as

numbers of speakers continue to decline. Figure 4 shows the distribution of population with

knowledge of Aboriginal languages. The percentages displayed in Figure 4 include the following

number of speakers: Cree (96,690); Denesuline (12,950); Innu/Montagnais (11,450); Inuktitut

(36,950); Ojibway (25,160); Oji-Cree (10,180); All other Aboriginal languages (51,740); and N=

245,120 total speakers of Aboriginal languages.

Figure 4: Distribution of Population with Knowledge of Aboriginal Languages (with ≥ 10,000 Speakers), 2011 NHS
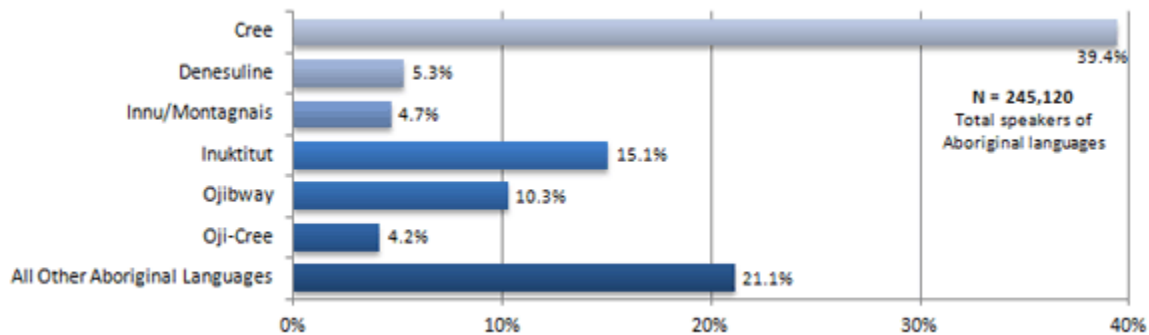
Sources: Statistics Canada, 2011 National Household Survey, Statistics Canada and AANDC tabulations.

The role of culturally focused curriculum appears to be paramount for successful Indigenous distance education programs. Therefore, it is important that these programs are administered by groups who aim to promote greater awareness for the need to reconnect Indigenous learners with their communities, languages, and culture.

Some research has been done, albeit very little, to determine the effectiveness of existing Indigenous distance education programs in Canada. Kawalilak, Wells, Connell, and Beamer (2012) conducted an exploratory study that focuses on the learning needs of Aboriginal adult learners residing in selected First Nations communities in rural Alberta, and the potential for increasing access to online learning education. Kawalilak et al. (2012) found that low self-confidence was the biggest barrier to academic success.

The literature reveals there is a need for online learning in Aboriginal communities, and this need is recognized by the communities themselves. In the Labrador study of high school Aboriginal students, Philpott et al. (2009) state: "All participants — students, educators and parents, voiced appreciation that this mode of instruction [online learning] was available to students." Furthermore, "participants viewed [online learning] as an opportunity to receive a

level and range of education which would not otherwise be available to them." Online learning

has the potential to provide supplementary or full-time educational supports for Aboriginal

students, and if these supports are provided with culturally appropriate curriculum, success is

more likely. Alongside a culturally appropriate curriculum, cultural sensitivity is key (Rukholm,

Carter, & Newton-Mathur, 2009). According to Kawalilak et al. (2012), the literature suggests

that providing technological access to distance education programs is not enough to ensure

learner success – cultural sensitivity to learning preferences and cultural and linguistic traditions

of Aboriginal learners is much more important. "In schools controlled by Aboriginal people,

language and cultural activities have become prominent features of programming" (Castellano,

Davis, & Lahache, 2000, p. 252).

      The benefits of online learning in Aboriginal schools. Online learning "is supposed to

provide particular learning means with respect to different goals and target groups" (Ertl &

Helling, 2014, p. 1). Hence, it is reasonable to argue that online learning that is focused on

cultural reconnection, combined with effective course delivery and design that follows best

practices can have positive results on the Aboriginal learner. In a study conducted by Philpott et

al. (2009), it was found that "the vast majority of [Aboriginal] high school participants felt that

along with boosting academic confidence, the online learning experience fostered

communication and leadership skills." Online learning can also facilitate development of life

skills that are necessary for successful careers and lifelong learning, including "improved skills

in time management, computer literacy, collaboration, independence, and an enhanced work

ethic" (Philpott et al., 2009). Beyond technical skills, Paul's (2011) study reveals that online

learning also fosters and optimizes psychological factors such as motivation, confidence, and

work ethics, which in turn have helped Aboriginal high school students in the Yukon improve

academic performance (p. 15). Furthermore, the online environment creates a facilitated space which encourages improved knowledge retention – "studies consistently show that [online learning] students learn material between 30% and 50 % faster, and retain in post-testing about 30 % more than do students during traditional lectures methods" (Keengwe, Onchwari, & Agamba, 2014, p. 890).

It is important to examine when and how to use distance education systems. "As distance education is perceived to be an increasingly effective method of instruction, educational researchers need to examine the purposes and situations for which distance education is best suited" (Armstrong & Frueh, 2002, p. 32). Kawalilak et al. (2012) argue that distance learning has the capacity to address the education gap by allowing learners to remain in their communities while receiving educational supports such as online lessons (para. 13). The literature reveals that distance education programs are a viable option for providing culturally relevant programs in an alternative format to support a transformation of Aboriginal education. For example, students at Gai Hon Nya Ni: Amos Key Jr. E-Learning Institute have the opportunity to obtain four credits in Native Languages like Cayuga, Mohawk and Ojibway (Barbour, 2013, p. 74).

Chapter Two Summary

The literature review shows that the Canadian Aboriginal population is growing, young, and consists of diverse cultures. The population has low high school completion rates and high unemployment rates. Since the majority of Aboriginal Peoples live in rural or remote areas, it is reasonable to infer that these communities would benefit from distance education. Of course, there are barriers of use that need to be taken into consideration including access to high speed Internet.

The literature shows that Indigenous communities are adopting online learning to provide alternative programs for students within their communities. Two examples include Keewaytinook Internet High School (KiHS) in Ontario and Wapaskwa Virtual Collegiate in Manitoba. Similar to post-secondary distance education, online learning in secondary schools allow students from remote and rural regions the option to stay in their communities while they study. The literature reveals that online education is the only way to connect students and teachers who are geographically separated during times of extreme weather conditions. Moreover, online learning is a viable option for addressing the needs of schools in rural Aboriginal communities.

Chapter 3: Methodology

Introduction

This chapter provides a description of the research design, data collection and analysis, and ethics framework used in this study. This section explains the research methodology, demonstrates how this methodology is suited to the research purpose, and shows how the research design helps to uncover the answers to the two research questions.

Research Design

According to Hyett, Kenny, and Dickson-Swift (2014), discussions about case study limitations have led some researchers and scholars to debate whether case study is a methodology or a method. Therefore, it is important to highlight that this project's research design utilizes a case study methodology, and not case study method. According to Stake (1995), case study methodology is appropriate when:

> The case is specific. Even more, the case is a functioning specific. The case, in the
> words of Louis Smith (1978), is a "bounded system." In the social sciences and
> human services, it has working parts, it probably is purposive, even having a self.
> It is an integrated system. The parts do not have to be working well, the purposes
> may be rational, but it is a system. Its behavior is patterned. (p. 236)

An Indigenous online high school is a bounded system. Moore and Kearsley (2015) state that a distance education system consists of component parts that work together in an egalitarian relationship. These include learning, teaching, program/course design, management, policy, and

organization. Two main case study approaches can be considered in their capacity to guide case study methodology, one proposed by Stake (1995) and the second by Yin (2003, 2006).

Stake (1995) approaches case study methodology following an interpretivist tradition while Yin (2003, 2006) approaches case study methodology following a positivist tradition. For Yin (2003), a case study is an empirical inquiry. While this study is more in line with Stake's (1995) interpretivist approach, aspects of Yin's (2003, 2006) approach are also useful. According to Yin (2003), case study methodology is appropriate when the study covers contextual conditions that are relevant to the topic of study, and in instances of bounded systems (interdepending parts into a functioning whole). Based on Yin's (2003) recommendations, an empirical case study methodology is useful and appropriate for this research project because Indigenous contextual conditions are relevant to the study; the research deals with a bounded system; and the answers to the research questions have been derived from participants' meaning – for example, how they describe a successful online Aboriginal high school. In addition, this case study is aligned with Stake's (1995) position that case study should allow the multiple realities that are constructed by research participants, the researcher, and the readers of the study.

Lincoln and Guba (1985) state that the content of a case study report hinges on its purpose, use, level, and audience. The purpose of this case study is to describe a successful online Indigenous high school by examining the perceptions of teachers, staff, students, and parents. The results of this study can be useful to teachers, staff, and administrators, and can help their understanding of how they can develop and sustain successful online programs for Indigenous high school students.

Patton (1987) and Seidman (1991) agree that research questions for studies that use qualitative methodology often have "how" or "what" questions. This case study poses two

"what" questions. I argue that using case study methodology and a qualitative approach, "what" questions are appropriate for this research project.

This case study also utilizes Stake's (1995) major conceptual responsibilities of qualitative case research (p. 244): bounding the case, conceptualizing the object of study; selecting phenomena, themes, or issues – that is, the research questions – to emphasize; seeking patterns of data to develop the issues; triangulating key observations and bases for interpretation; selecting alternative interpretations to pursue; and developing assertions or generalizations about the case.

According to Yin (2003), case studies can be explanatory, exploratory, or descriptive. He also differentiates between single, holistic case studies, and multiple-case studies. Stake (1995) "identifies case studies as intrinsic, instrumental, or collective" (Baxter & Jack, 2008, p. 547). An intrinsic case is unusual, an instrumental case provides insight into an issue, and a collective case studies several cases that [together] provide insight into an issue (Creswell, 2013). This case study is single, descriptive, and instrumental. Data were collected at one online Aboriginal high school. It provides a description of a successful online Aboriginal high school and gives insight into how to create opportunities for student success in this context.

Research Method

Stake (1995) states that in the early stages of development of the case study, the researcher must ensure there is an adequate definition of the case. To begin the discussion of case definition, it is important to reiterate that this study seeks to answer the following questions.

1. What are the essential components of a successful Indigenous online high school?

2. What role does Indigenous culture play in shaping a successful Indigenous online high
   school?

The aim of case study research "is to create as accurate and as complete as possible a description

of the case" (Cronin, 2014, p. 20). According to Lincoln and Guba (1985), case study is the

primary vehicle for emic inquiry directed toward a reconstruction of the respondents'

constructions. The research focuses on how participants see the world and presents its findings

through their own voices. According to Lincoln and Guba, phenomena actually not only rely on

context for the purpose of constructing meaning but it actually depends on context for its

existence (p. 360).

Research site. This case study can be perceived as sensitive as it raises questions around

racial tensions that exist in Canada and the relationship of the Crown with Aboriginal Peoples. I

recognize the sensitivity of this topic and to respect the privacy of the research participants, a

pseudo-name is given to the school used in this investigation. The school will be referred to as

Awa Virtual School (AVS). Awa in the Cree language translates to "this one." AVS is under the

leadership of a First Nation Education Centre committed to working with First Nations in the

development of partnerships to ensure the highest standards of education are achieved in First

Nations schools.

In 2009, 49 First Nation chiefs came together and signed band council resolutions to

create AVS. In 2015, 45 chiefs signed directives for the government to continue funding AVS.

AVS provides First Nations students with over 30 course offerings to enable them to remain in

their communities while completing their high school credits. Registrations (per semester) range

between 300 and 800 students with a cap of 25 students per class. AVS received its first year of

project funding through the Educational Partnerships Program (EPP) in September 2009.

I selected AVS as the online high school for this study for a number of reasons. Firstly, AVS is accredited by a provincial department of education. Secondly, AVS's mandate is to provide senior high school education services to First Nations schools. Thirdly, AVS has reported consistent course completion rates of 65 percent and higher since 2009-2015. AVS has served 1,432 students since 2010-2015 and granted a total of 728 credits. In addition, teachers at AVS include Indigenous culture in the school curriculum. Teachers use a learning management system (LMS) to host their online courses. The LMS contains an integrated set of tools that make it "possible for one system to perform all the tasks [an online learning system] requires including design, development, delivery, management, and administration of courses" (Palahicky, 2015, p. 20).

Access and permissions. According to Stake (1995), the process of data collection involves at least a small invasion of someone's personal privacy: "In requests to district, school, and teachers, the nature of the case study, the sponsor, the activity intended, the primary issues, the time span, and burden to the parties should be made known" (p. 57).

Prior to my contacting research participants, the Research Ethics Board (REB) of Athabasca University approved the project. Once approval was granted, a brief written description of the research project was provided to all research participants in a Letter of Consent. Participants were informed that participation in the study was voluntary, that they could withdraw at any time without penalty, and that participation required their informed consent.

Data collection methods. According to Roy (2014), "there is a strong argument that, in order for Aboriginal Peoples to move forward in addressing the health and wellbeing of their communities, all available methods – qualitative and quantitative – need to be applied in pragmatic ways that bring benefit" (p. 124). This case study used methodological triangulation,

which means that two different research methods were applied to the same object of study (Stake 1995). Hence, two types of data collection methods were used - interviews and an online survey.

"Qualitative methods of data gathering (such as dialog-oriented interviews with open-ended questions) resonate with the oral tradition of Aboriginal cultures" (Roy, 2014, p. 122). In addition, mixed data collection methods are commonly used in case study research, and case study methodology "enables the researcher to gather data from a variety of sources and to converge the data to illuminate the case" (Baxter & Jack, 2008, p. 556).

Yin (2003) and Stake (1995) recommend mixed methods for case study research and argue that a combination of qualitative and quantitative data can be used to build a comprehensive understanding of the case. "Indeed, a strong argument can be made for taking a mixed-methods approach to Aboriginal research, involving a combination of qualitative and quantitative methods (Botha, 2011)" (Roy, 2014, p.123). In addition, Fetters, Curry, and Creswell (2013) argue that the nature of the case, feasibility issues, and the research questions determine when mixed methods are appropriate in case study (p. 2138). "Several advantages can accrue from integrating the two forms of data", including the capacity to help explain qualitative findings (O'Cathain, Murphy, & Nicholl, 2010, p. 2135).

Interviews and participants. Awa Virtual School (AVS) has a relatively small school team consisting of seven full time teachers who are also course developers, three administrators, two IT staff, one receptionist, and four other staff shared with a First Nation Education Centre. In total, the school team has 17 members.

According to Baškarada (2014), "anything less than 15 interviews per case study organization is generally not considered sufficient" (p. 12). A grand total of 16 interviews were

completed for this study (14 completed face to face and two by telephone), fulfilling Stake's

(1995) recommendation that an adequate number of and variety of data sources are used.

Administrators (3), teachers (7), staff (4), and parents (2) participated in interviews. The

duration of the interviews was 20 to 80 minutes depending on the length of the participant's

responses. In total, the interviews were 435 minutes long. An interview script was used to

administer the interviews which were audio-recorded using *Audacity* software, and later

transcribed. The transcriptions included pauses and other natural phrases such as "um."

The interview questions were open-ended with some Likert-format scales. The questions

were divided into three sections:

- Section One. General Information (one question)

- Section Two. Essential Components of a Successful Online Aboriginal High School
  (three questions)

- Section Three. The Role of Indigenous Culture in Shaping a Successful Indigenous
  online high school (four questions)

Limitations of interviews. Miles and Huberman (1994) state that one of the benefits of

qualitative data is that instead of stripping away the context of the local situation, we take

context into account (p. 10). Thus, it is reasonable to state that interviews provide context-based

data. However, interviews are heavily dependent on the interviewees' decisions to participate

fully and honestly.   An interview script was used to help keep the questions focused and I

allowed "space" for the participants to reflect before responding to questions.

Online survey and participants. Seventeen participants completed the online survey,

including: administrators (2), teachers (7), staff (2), parents (2), and students (4). The participants

who completed the online survey were essentially (but not totally) the same individuals who

were interviewed. Combining interviews with an online survey allowed parents and students to participate in the study. Frels and Onwuegbuzie (2013) suggest that this combination of formats will create a rigorous process which "allows the researcher to contextualize further the qualitative interview responses" (p. 188). The online survey was completely anonymous. While all parents were invited to participate, not all of them were able to or willing to participate in this research project. Parental consent was required for student participation. Therefore, the request for student participation was sent to parents and not directly to students.

Limitations of online survey. The online survey for this case study followed guidelines established by Cohen et al. (2011), namely: consideration of file size (limit graphics and keep the file small), using automatic box ticking, avoiding "check-all-that-apply" type questions, keeping the survey short (no more than one screen), careful selection and wording of the first question, a marker to indicate to the respondent where he/she has reached, and instructions on how to complete the item located right next to the item. In response to Solomon's (2003) suggestion that follow-up contacts with non-respondents can improve response rates, one follow-up reminder was sent to all participants, which in turn resulted in additional participation.

Data analysis. Creswell (2002) outlines six steps that are useful for the process of qualitative data analysis. It is important to note that while these steps are presented in a linear fashion, they were not applied in a static linear order. Data analysis must incorporate some repetitive elements and Creswell describes this as an interactive practice.

Creswell's (2002) first step is to organize and prepare the data for analysis. A detailed transcript of each interview was completed. I then transferred the qualitative data from the individual transcripts into an Excel document with multiple sheets (one for each interview

question). The responses were pasted into the appropriate sheet and identified with a Participant Identification Number (PID).

Step two is to read through the data. Before data analysis and coding, I read each transcript several times to get to know the data and reflected on what ideas the participants conveyed. I reflected on what the participants' were trying to say and what conclusions they were trying to make.

Step three is to complete a detailed analysis and coding process. "A code in qualitative inquiry is most often a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and or evocative attribute for a portion of language-based or visual data" (Saldana, 2009, p. 3). A zigzag approach was used during the coding process which means that coding began before all interviews were done. This way, "gaps in the data are filled or new and unexpected themes unpacked" (Rivas, 2012, p. 369).

Firstly, I coded each transcript individually so I could get a complete understanding of participants as individuals. Most questions reached coding saturation by the mid-way point during the first round of coding. Next, new codes, categories, and subcategories were identified. The codes were bottom-up (emerged from participants' responses).

I organized and grouped the questions and responses and then coded them to identify links between codes and categories. I coded each question separately, and I coded all of the participants' responses. This corresponds to Creswell's step four, using the coding process to generate categories for analysis. Saldana (2009) states that "qualitative codes are essence-capturing and essential elements of the research story that, when clustered together according to similarity and regularity – a pattern – they actively facilitate the development of categories and thus analysis of their connections (p. 8)." I then developed broader thematic categories.

After coding and categorizing the data, themes were extracted from the noted categories. This reflects Creswell's (2002) fifth step. Following a qualitative tradition, the emergent themes in this study are induced from the constructs (voices) of the interview participants.

I then moved into step six, interpreting the meaning of the data. During this process, I focused on the participants' perceptions and ideas: what they were trying to say, what conclusions they were trying to make, and their intentions.

Integration of qualitative and quantitative data. Fetters, Curry, and Creswell (2013) describe four ways to integrate quantitative and qualitative data: connecting, building, merging, and embedding. In this case study, integration through embedding was used to integrate the qualitative and quantitative data. According to Fetters et al., "Integration through embedding occurs when data collection and analysis are being linked at multiple points and is especially important in interventional advanced designs, but it can also occur in other designs" (p. 2141). Embedding is also known as "concurrent nested design, in which qualitative and quantitative data are collected concurrently and analyzed together during the analysis phase" (Harwell, 2011, p. 156). Greater weight was given to the qualitative data, and the quantitative data were used to help interpret the qualitative findings. Quantitative sampling methods were not used with the result that numerical data collected are descriptive of the study participants only and cannot be taken to be representative of a wider community.

Validity. "The 'construct validity' of a procedure refers to the quality of the conceptualization or operationalization of the relevant concept" (Gibbert, Ruigrok, & Wicki, 2008, p. 1467). Essentially, construct validity ensures that the research investigates what it is set out to study. Were the research questions, methodology, and data collection relevant and connected? This case describes a successful online Aboriginal high school based on the

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perceptions of teachers, staff, students, and parents. It is, therefore, appropriate that an online

Aboriginal high school be the focus of this investigation. Furthermore, the interviews and survey

questions were directly connected to the two research questions. As a result, the data collected

provided answers to the research questions posed. As was stated earlier, this research focuses on

"the voices" of the participants. Therefore, the quality of this study is measured in terms of

credibility, neutrality, consistency, and applicability. Lincoln and Guba (1985) argue that in

qualitative paradigms the terms credibility, neutrality or confirmability, consistency or

dependability and applicability or transferability are the principal criteria for quality.

Stake (1985) recommends that case study researchers use triangulation in contrast to a

single-method approach. As mentioned in the data analysis section, this case study uses

methodological triangulation, meaning that different methods were used on the same object of

study. In this case, two methods were used (qualitative and quantitative) to investigate the same

research phenomena. There are six types of triangulation: time triangulation, space triangulation,

combined levels of triangulation, theoretical triangulation, investigator triangulation, and

methodological triangulation (Cohen, Manion, & Morrison, 2011). In education,

"methodological triangulation is the one used most frequently and the one that possibly has the

most to offer" (Cohen et al., p. 197). For this reason, this case study follows methodological

triangulation.

Ethical Considerations

According to Cohen et al. (2011), "the planning of educational research is not an arbitrary

matter; the research itself is an inescapably ethical enterprise" (p. 73). Cohen et al. provide some

very useful information about ethical and credible considerations for this case study. Some of

these include informed consent, access and acceptance, sources of tension, and ethical dilemmas. As stated earlier, the research participants were briefed about the purpose of the study and it was made clear that participation was voluntary.

I have no connection with the participants and therefore there was no conflict of roles in this case. Perhaps the most important consideration regarding ethical dilemmas was recognition that the topic can be perceived as a difficult one as it raises questions around racial tensions that exist in Canada and the relationship of the Crown with Aboriginal Peoples. I had to recognize the sensitivity of this topic and had to be respectful of the research participants. There are no identifiers (e.g. names) used in this report. As stated earlier, prior to contacting research participants, the Research Ethics Board (REB) approved the project.

Role of the Researcher

Following the notion that both the role and perspective of the researcher must be clearly outlined in case study research (Stake, 1995), it is important to state that I was aware of my personal assumptions and personal opinions and tried not to allow them to influence how the study was carried out and how the data were collected, analyzed, and reported. Furthermore, I respected the rights of the participants. "Individuals who participate in a study have certain rights, including the right to be briefed about the study" (Creswell, 2002, p.12). They also have a right to withdraw at any time or the right to refuse to participate. Moreover, "because qualitative research entails the researcher taking an active role in the collection and interpretation of others' meaning making, to be credible, qualitative researchers must be [honest] and trustworthy" (Dodge, 2011, p.60). I have been honest in my methodology and reporting of findings.

I do not belong to an Indigenous community and would be classified as an "outsider." Therefore, it was important to consider the "appropriateness of [cultural] research being conducted by outsiders" (Clandinin & Connelly, 2000, p. 183). How was my sense of identity affected by opening myself to the very different realities that were shared by the research participants who have a different historical, social, and cultural context (Clandinin, 2007, p. 489)? According to Clandinin and Connelly (2000), I needed to become "wakeful" and I had to consider what difference it makes for me to be inside or outside Indigenous culture. Being wakeful, I had to ask "what do the data results reveal?" rather than look for words or phrases in the data to prove or disprove my preconceived ideas about the phenomena of study.

How can it be said without hesitation that the data are "true?" I could have manipulated the survey numbers to support personal beliefs. While these considerations are real, research relies on an "honor system." I have an obligation to the Academy to be honest. "Data should be reported honestly without changing or altering the findings to satisfy certain predictions or interest groups" (Creswell, 2002, p.14).

The purpose of research is to add to knowledge of a particular topic or field of study. Clandinin (2010) writes about how her interest in learning of the lives of youth who dropped out of high school impacts her life as an educator. Through their stories "and perhaps through learning about their lives, we wanted to learn more about our lives as educators and more about schools" (Clandinin, 2010, p. 1). Similarly, through the voices of the research participants in this study, I learned more about who I am as an educator and more about factors that lead to success in Indigenous virtual high schools.

Study Limitations and Delimitations

Simon and Goes (2013) explain that limitations of a research project result from implicit characteristics of the research design, methodology, and methods. Limitations are outside of the researcher's control. For this study, the limitation consisted in the researcher's lack of control over whether or not teachers, staff, and parents participated, and whether or not parents provided consent for their children to participate. As this case examines a First Nations online high school, discussions about Métis and Inuit groups are excluded. This is a delimitation of this study.

Biases. According to Glasow (2005), "biases may occur, either in the lack of response from intended participants or in the nature and accuracy of the responses that are received" (p. 6). Glasow states that, "other sources of error include intentional misreporting of behaviors by respondents to confound the survey results or to hide inappropriate behavior" (p. 6). The other possibility is that "respondents may have difficulty assessing their own behavior or have poor recall of the circumstances surrounding their behavior" (p. 6). Therefore, the possibility of bias in the data is inevitable. In addition, my own bias, much as I try to recognize and inhibit it, will colour the data, as will the readers' own bias.

Chapter Three Summary

Thus far, the research problem has been discussed, a literature review has been provided, and the research methodology has been explained. Case study methodology and two data collection methods will be used to examine and uncover the answer to the two research

questions. The data collected in this case study help provide a description of a successful online

Indigenous high school.

Chapter 4: Research Findings

Introduction

This chapter presents the results of the data collected in the interviews and the online survey, and it is divided into two parts. Part One provides detailed information about the research participants. Part Two is a discussion about the four themes that emerged from the qualitative data. I organized and presented all the data that are relevant to a particular issue or theme (Cohen, Manion, & Morrison, 2011, p. 551). These themes provide an enigmatic, macro perspective and help inform the answers to the following two research questions:

1. What are the essential components of a successful Indigenous online high school?

2. What role does Indigenous culture play in shaping a successful Indigenous online high school?

This investigation is a single, descriptive, instrumental case study that utilizes mixed data collection methods to uncover, from the participants' voices, the answers to the two research questions. "A case study provides a unique example of real people in real situations, enabling readers to understand ideas more clearly than simply presenting them with abstract theories or principles" (Cohen, Manion, & Morrison, 2011, p. 289).

Case Study Participants

As mentioned in previous chapters, the school selected for this case study is Awa Virtual School (AVS). AVS has a relatively small school team consisting of seven full time teachers who are also course developers, three administrators, two IT staff, one receptionist, and four

other staff shared with the First Nation Education Centre. In total, the school team has 17 members.

A total of 16 interviews were completed for this case study. Seven of the participants held the dual role of teacher and course developer at AVS. Three of the teachers instruct math and sciences (grades nine to 12), two instruct humanities courses (grades nine to 12), and two instruct senior high school level elective courses such as computer science and web design.

Four of the interview participants were staff members including a multi-media designer, content manager, information technologist, and literacy and math resource support staff.   Three administrators participated in the interviews: the director of programs, the principal, and the director of information technologies. Two parents/guardians participated in the study, and these participants are the grandparents of students at AVS who reside in a First Nation rural community.

The case study participants expressed their contentment that the study provided them with an opportunity to share about the work they are doing at AVS. They were delighted to share their experiences and perceptions. At this point, it is necessary to reiterate that the topic of this case study can be perceived as sensitive as it raises questions around racial tensions that exist in Canada and the relationship of the Crown with Aboriginal Peoples. I recognize the sensitivity of this topic and to respect the privacy of the research participants, pseudo-names are used in this report.

Interview Participants. Here I introduce the 16 interview participants and provide some information about their qualifications and roles at AVS. The first participant is Aaron. He teaches and develops online course electives such as computer science for grades nine to 12. As an online course developer, he utilizes the provincial curriculum to guide the development of

course content, learning strategies, and learning objectives. He integrates learning activities and content into the learning management system (LMS) called Desire to Learn (D2L), and engages students by using multi-media including images, video, and audio in his courses. Aaron is a veteran teacher with more than 20 years of experience, and possesses a Certificate in Education, Bachelor of Theology, Bachelor of Education, and Post Baccalaureate in Education. During the interview, Aaron self-identified as non-Aboriginal.

Emily is also a teacher and course developer at AVS with eight years of experience in the field of education. Her background is in science and math. She holds a Bachelor of Science, Bachelor of Education, and Post Baccalaureate Diploma in Education. Emily worked at AVS for three and a half years and teaches pre-calculus, applied math, and physics. Emily said, "I have been teaching the courses and I have been working on enhancing them and adding various components to them within our learning management system which is the Desire to Learn. And a lot of that of course comes with the live PowerPoints and things like that." During the interview, Emily self-identified as non-Aboriginal. Emily brings a lively and vibrant approach to teaching and learning and her enthusiasm for working with First Nations students at AVS was apparent in the interview.

Lily described herself as a teacher and developer. She said, "I do not like the term instructor at a high school level, I prefer the term teacher, though my position is described as instructor. I develop course content for all the English programs at the high school." With over 20 years of experience, as well as experience in international education, Lily brings a wealth of knowledge about instructional strategies, curriculum development, and culturally inclusive pedagogy to AVS. During the interview, Lily self-identified as non-Aboriginal.

Tate has four years of experience in the field of education, and holds a Bachelor of Fine Arts and a Bachelor of Education. Tate helps make learning relevant to his First Nations students by encouraging them to use their ancestral languages in class. Tate teaches senior high school level course electives including web design, photography, film, and computer science. During the interview, Tate self-identified as Métis.

Solomon is the multi-media designer at AVS.   Solomon said, "What I do is I provide any video or any media aspects to any of the courses that the instructors are requesting. I also do some online course development if needed. So if instructors need assistance, I help them work at it." Solomon's role is focused on the information technology (IT) supports as opposed to designing and developing instructional materials. During the interview, Solomon self-identified as First Nation.

James is the content manager for AVS which means he looks after the digital data and the online courses: "I am in charge of the technical creation of courses and some of the training for the teachers on technical things like HTML." James has a background in graphic design, branding, and commercial design. During the interview, James did not self-identify as Aboriginal or non-Aboriginal.

Patrick brings over 40 years of experience to AVS. He possesses a Master of Science and Bachelor of Science, and prior to joining the team at AVS, he worked as a science specialist for a First Nation Education Centre. Patrick is a teacher and course developer and he teaches grades ten, 11, and 12 and science courses. During the interview, Patrick self-identified as non-Aboriginal.

Wade has a background in science and math. He has five years of experience in the field of education, and holds a Bachelor of Science and a Bachelor of Education. Wade helps make

learning relevant to his First Nations students by using culturally relevant references in his teachings; for example, he uses the medicine wheel when teaching biology. Wade teaches all the grade 11 and 12 science courses at AVS. During the interview, Wade self-identified as non-Aboriginal.

William is an administrator at AVS. He said, "I work with the field staff members who travel to the local community schools and provide support to teachers. This year, AVS was brought directly under me so I have to make it my business to know more and play an active role in supporting it." William worked as a director for a First Nation Education Centre prior to taking on the leadership role at AVS. During the interview, William self-identified as First Nation.

Chloe is a humanities teacher and course developer at AVS. With four years of experience in the field of education, Chloe brings her Indigenous cultural perspective to the team. Chloe has a Bachelor of Education and Bachelor of Arts. During the interview, Chloe self-identified as First Nation.

Leah provides resource support to teachers and students for math and science courses. She identifies gaps in programs within local First Nations communities and helps students register for courses at AVS that are not offered in their local schools. During the interview, Leah self-identified as First Nation. Leah was excited to share some of her personal stories about growing up as a First Nation daughter. When sharing stories about her family, Leah smiled and laughed as she reflected on some of her experiences.

David is an administrator of information technology (IT) and for five years previous, he served as director of programs at AVS. David is very knowledgeable about the history of AVS and was instrumental in the accreditation process with the Department of Education that led to

the signing of a Memorandum of Understanding (MOU) in 2015. During the interview, David

self-identified as First Nation. He said:

> Just to clarify, we did do some restructuring and up until early July, the school
>
> was shifted over to another director. But over the past five years I have been the
>
> director responsible for overseeing the growth and development of the virtual
>
> high school. It was my idea to do a virtual high school for our students. It has
>
> been something that we have played around with for years before that.

David focused on the organizational structure and leadership at AVS and his responses reflected

his depth of understanding of how a distance education system operates. In addition, his work

with First Nations Band Councils and securing funding for AVS influences his perceptions and

his responses often incorporated references to funding, leadership, and strengthening

relationships with First Nations communities.

Marcus, brings his information technology (IT) skills to the team and is responsible for

all the web components, including troubleshooting and content migration. Although his duties

do not include any curriculum design, his IT skills are imperative for course delivery as he

supports the technology infrastructure at AVS. During the interview, Marcus self-identified as

non-Aboriginal.

Violet is a school administrator at AVS. Violet holds a Bachelor of Science and Bachelor

of Education. During the interview, Violet self-identified as First Nation. As a First Nations

educator, Violet expressed her feelings about the need for culturally inclusive curriculum. Her

responses to questions about Aboriginal culture included personal references and experiences.

Her passion for increasing success for her First Nations students was apparent in the interview.

Elsie and Ken are the guardians of two students at AVS. Elsie and Ken were pleased with the educational progress of their two grandchildren at AVS. They spoke highly of the teachers and mentioned they were glad their First Nations grandchildren could be themselves and feel valued at AVS. Elsie is the spouse of Ken. During the interviews, both Elsie and Ken self-identified as First Nations. Ken expressed his concern for his grandchildren and other First Nations students who live in remote communities. He expressed his concern for students who do not have access to high school programs and access to technologies that are required for participation in online classes.

Online survey participants. A total of 17 participants completed the anonymous online survey. Seven (41.19%) of the survey participants were teachers, two (11.76%) staff members, two (11.76%) administrators, four (23.53%) students, and two (11.76%) parents/guardians.

Ten (58.82%) of the online survey participants self-identified as Aboriginal. Eight (47.06%) self-identified as First Nations, two (11.76%) self-identified as Métis, and seven (41.18%) selected not applicable.

Emergent Themes

According to Ryan and Bernard (n.d.), identifying themes is a fundamental task of qualitative research. Themes are theoretical, often ambiguous, concepts which researchers identify before, during, and after data collection. Themes are derived from the literature and can emerge from the words, expressions, and arguments of the research participants. In addition, themes can surface from the researcher's theoretical exposure and can result from the researcher's personal experiences and understanding of the phenomenon being studied.

Following a qualitative tradition, the emergent themes in this study are drawn from the constructs (voices) of the interview participants.

  Coding and themes. In the first round of coding, new codes, categories, and subcategories were identified. The codes were bottom-up (emerged from participants' responses). A zigzag approach was used during the coding process, which means coding began before all interviews were completed.

  In the second round, I coded to find links between codes and categories. I coded each transcript individually in order to get a complete understanding of the participants as individuals. Most questions reached coding saturation by the mid-way point during open coding. The two questions about the role of Indigenous culture in shaping success did not reach saturation.

  I organized and grouped the questions and responses and then completed a third round of coding to identify links between codes and categories. I coded all data. Next, I developed the broader categories. The development of the broader categories was a lengthy process and required more than five rounds to refine and finalize the categories.

  After coding and categorizing the data, themes were extracted from the noted categories. During this process, I focused on the participants' perceptions and ideas: what they were trying to say, what conclusions they were trying to make, and their intentions. After a detailed analysis of the data, four themes emerged:

1. Teachers, staff, and parents use Western standards to describe success.
2. Success at an online Aboriginal high school is a shared responsibility.
3. The issue of time presents a cultural challenge.
4. Teachers, staff, and parents rely on culture to increase student success.

Teachers, Staff, and Parents Use Western Standards to Describe Success

When examining success at an online Aboriginal high school, it is fundamental to consider two priorities: "protecting and reclaiming language, culture, and tradition while focusing on long-term goals such as graduation and transitions to work and post-secondary institutions" (Tunison, 2007, p. 13). However, when the interview participants defined success, they emphasized course completion, program completion, and attaining high marks. Success was not defined in ways that facilitate protecting and reclaiming language, culture, and tradition but instead was associated with Western success criteria.

Description of success for students at an online Aboriginal high school. Aaron, a non-Aboriginal teacher, stated that success "means really the same for all students. That a standard is set and that you work toward that standard." Aaron continued:

Each province, first of all, has standards and First Nations communities also use provincial curriculum, assessments, measurements, and standards. I think that the goal is for First Nations communities and students to reach those same standards so that they will feel they have been able to succeed at a societal level, if you like. Now that, of course, brings all kinds of challenges at the local level and this includes things like accessibility to the classroom. This includes community and parental attitudes toward education. This includes commitment level and attitude of students, of course, to education. These are challenges that have to be addressed, I think, at the local level by people who can present these to the community and to the students. At the same time, we are in a similar position in this organization and we can also help with some of that. We can give leadership to some of those people in the communities who need to do that. So we are in a

bit of a leadership role to facilitate that learning as well. As with any student in

any high school, you want to get your credit and you want to get not only a

passing mark but a considerably better mark so you feel successful. You feel good

about what you have done, and so that is certainly the case here as well. For many

of these students, they see education as a stepping stone to a career, a job, a

lifestyle that you would hope for and that is achievable. So for many students they

want an education but to have the skills and the initiative to get one is sometimes

quite difficult for them. (Aaron)

Aaron suggested that success includes meeting provincial standards, attaining credits, earning

high marks, and securing a career. These are traditional Western criteria (McMullen and

Rohrbach, 2003). Emily said, "Success is something that is very individual because every student

is very different and every student learns differently. We need to address every student

separately because of that and because what success means to me or you or to somebody else can

be very different." Emily continued:

Having a student set goals or have that picture in mind as to how they would like

to do, what they would like to do, and where they would like to go is very

important. Then of course, I believe that once that is laid out, it is not set in stone.

Students can certainly change that goal as they move on forward but in my role as

the instructor or as teacher I need to support their goal. If they reach their goal

then that is success, in my mind. They set out to do something and they achieve it.

(Emily)

Emily advocated that success is individual and that it includes individual goal-setting. This is

another example of Western success criteria that does not align with Indigenous perspectives.

Aboriginal Peoples are community-oriented (Potter, 2010, McMullen and Rohrbach, 2003) and success is a collective notion. Patrick had a different perspective. He said, "Attendance is the key. It is their weakness. It is their roadblock and it is their success. If they show up, that is great. Turning in of work is another issue but if they attend and do the work, it is a positive strike because the goal is to keep them in school and to encourage them to go on." Western criterion is evident here as records of attendance are used as success criteria, and this contradicts Aboriginal perspectives (Nguyen, 2011).

Solomon articulated Western success criteria and said, "I think if students complete the course and if they are engaged throughout and if they do not miss a class, this is success. Success depends on the student's completion. Completion shows that the instructors have done their job. When the student has accomplished and received their credit in that course, this is success." In the same vein, Leah said, "Success for a student would be finishing off the course and completing all the assignments. In order to do an online course, the student has to be an independent learner and must be able to keep themselves on track."

Ken echoed the Western success criteria and said, "I am very concerned that all of our students are not able to complete all the requirements to pass the course, to get the credit. Ken emphasized, "Students need to be able to be prepared to get accepted into other programs and higher learning institutions. So getting the credit is most important." James also articulated that earning credits was a factor that contributed to success. However, he added that access and culturally inclusive curriculum were essential. He said, "I think success would be being able to pass the course. This is one level of success." James explained:

> Another level is to have access to materials or courses that are not available to them within their schools. I think that success for us and students would be having classes or courses that are culturally relevant that make it easier for students or not only easier but better for them as far as creating courses that are speaking to them through their culture or to their culture in a way that the course would make more sense and be Aboriginal oriented. (James)

Chloe, like James, linked success to a culturally inclusive curriculum. She said, "Success is when students are engaged, when they understand the information, and when they want to be there. Success involves helping students to be interested in the content or making sure that they are actually interested in the program." Tate said, "I think success is really completing a specific goal." Tate continued:

> For my students, at the beginning of every course, I ask them what their goal is for the course. A lot of them say their goal is to pass, or to get a specific grade, or above a specific grade. Working through the course, I try to help them achieve that goal, and at the end of the year or semester or term, we look back at that goal and see if that was a success. I believe success is really just them achieving the goal that they have set on their own because I can say a ninety percent is success but to them, maybe they are an average student, so to them maybe fifty-five percent is a great success. So having them set out that goal really defines what success is for them. (Tate)

Wade, for his part, defines success "as multilayered. One of the things that we want to look at is success at the school level. To me, success is when students complete the courses they register for; they pass the final exam and have a credit at the end. That is one level of success." Wade

explained, "The other level of success is individual. Based on beginning skills that students have and what they learn during that class and at that session, this is a second level of success. Are they passing, first of all, and if they are passing, do they have good enough grades to do something with it or move on into postsecondary education?" William also defined success as achieving credits. He said, "I would say successfully completing the course or program they are enrolled in is success. So passing and meeting the requirements to complete the course."

Marcus linked success to technical issues. He said, "Success is when the students have a good experience in the class with the absence of annoying technical issues that would prevent people from participating. If you have X number of days in a year and students are not able to connect they are not going to feel successful." On the other hand, David said, "Success is always gauged upon; did you understand the material? Did students grasp enough of the material so that we can say they are ready to move on? That is success for us." David added:

> I know a lot of people say students do not necessarily have to pass the course to
>
> be successful. That is where I disagree. Any time a student does not pass a course
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> this is not a successful effort on our part and on their part. Something in that mix
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> did not work and there are a number of factors that can go into that. Maybe they
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> just were not a student who was fit for online learning and there are a lot of
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> students that engage in online schooling activities or courses and it just does not
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> fit with them. It is just not their type of learning. And there are times when we are
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> trying to fit their learning style into our school and sometimes it does not work. At
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> the same time, when a student does not do well in our school I ask myself; what
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> did we not do? What can we do to improve their success? In my mind, their
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> success, even at the meaty part of the curve like sixty-five to seventy-five percent,

encourages them to go on. For us, a lot of that is we have taken them from a point

where they were deficient and to the point where they are being moderately

successful. If we can do that then I know we can close quite a few gaps and this is

success in itself. It sets them up for the next time. When we start taking a look at

students who are successful and who are succeeding in the Aboriginal high

school, we recognize that middle years' math and science are a struggle. That is

where we see those gaps start to develop and I think if we are successful in getting

a student to that meaty part of the curve where they are getting good grades, well

we already know that we have already covered off some of the gaps. I think what

we end up seeing is a more successful student after that. (David)

David, too, focused on Western success criteria including completing the course,

completing the program, and attaining good grades. Elsie focused on student success and

linked this to effective communication. She said, "I think success is reflected in

accomplishments. Can students do the work that they are asked to do? Do students have

an opportunity to post questions?" Elsie added, "The other definition of success is around

the instructors' communication. At the virtual school they always make sure that I am

aware if there are ever any concerns." Elsie emphasized, "They always inform me and I

appreciated that. If I send an email wanting to know something, I get a quick response,

too. They always respond to my queries, my questions, and my concerns." Elsie

suggested teachers and parents/guardians play a role in achieving success.

Lily said, "From my personal experience as a professional and teaching in a First Nations

school, both face to face and virtually, success is varied. As a virtual school, we inherit a culture,

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a school culture from face to face environments on-reserve and that is attitudes about education and attitudes about attendance." Lily added:

> What is success to these young people and their families? Success does not necessarily mean success in school. Success to a young person does not necessarily mean the same thing to a First Nations person living on-reserve or even living in a city as it would mainstream culture at the same age. Success is moving students ahead from where their skill set is. Getting their credits may not be the goal. On-reserve, a lot of kids have a very inflated understanding of their skill sets. They have been passed along without achieving standard levels of achievement for grades. The virtual high school has a lot of challenges; skill sets, what students come into our classrooms, and getting students to solidify and improve on their work habits. (Lily)

Lily stated that success does not have to mean earning credits, but she maintained a Western focus by linking success to improvement of academic skills. Violet added her perspective as a First Nations individual. She said, "You can measure success in so many different ways. Of course there is academic success and that is when parents send their children to school with the idea that someday they would graduate. That would be one form of measuring success; attaining their high school diploma." Violet added:

> Another way to measure success would be by the completion of courses. And so we recognize in First Nations that these milestones are celebrated. Even for Kindergarten graduations, in the First Nations communities, there are quite elaborate ceremonies, and for early-years' graduation or middle years' graduation because these are very important milestones that are measuring success. You can

measure success in attendance and you can measure success in an individual

based on the type of person they are, certain personality traits. You can measure

success based on how helpful somebody is or how much effort they have put into

learning a certain skill, culture or language, anything like that. At the virtual

school we track attendance, completion, enrolment, and so how the government

measures success is based on these numbers but how the community might

measure success could be very different. How to measure success? You can

measure it beyond high school, I think, as well. How many of our graduates then

move onto postsecondary education? That is another way to measure. How many

are in sustainable and successful careers? I think the way First Nations measure

success is in how much they give back to the community. They come home

because that is where their family is and that is where their roots are. And so

hopefully they can bring what they have learned from their postsecondary

experiences and they can come back as the doctors, as the lawyers, nurses and

teachers. Have they been a good mom, a good dad, and have they been involved

in the community? These things are very important in the Aboriginal community

and how they measure success. As school teachers, of course, we focus on

education and the attainment of these things but all of those other things are so

important as well. There are probably limitless ways to measure success, I think,

in First Nations communities. (Violet)

Violet suggested that graduation, post-secondary entry, and securing a career are ways to

measure success. These are influenced by Western academic standards (McMullen and

Rohrbach, 2003). Violet also mentioned some of the Aboriginal perspectives on success. She

talked about returning to the local community and celebrating successful parenting (Tunison, 2007).

What emerged for me from the data is the perception that students are not participating in educational activities in order to thrive as "traditional" or "cultural" Aboriginal individuals. Instead, education attainment is primarily aimed at preparing students to thrive in Western society. The question that emerged for me from the data is as follows: what are the obstacles or challenges that prevent Aboriginal high school students from meeting Western standards of success? I discuss this in Chapter Five.

Success at an Online Aboriginal High School is a Shared Responsibility

The participants were asked to share their thoughts about what students need in order to be successful at an online Aboriginal high school. The data reveal that teachers, the local community, families, students, and the attending-school are all responsible for ensuring success. The online environment adds an extra set of challenges. Aaron said, "Being removed from the [physical] classroom it is now a little harder, I think, for the student to feel comfortable in the class and get a sense of commitment to the class. So these are things I need to foster."

Emily said, "We need to be aware of certain things that can get in the way of student success so we can focus on working with students. We really need to focus on getting them off to a strong start." Lily added, "I do not think, in our experience anyway, that high school students are really that ready for independent study. We try to use a constructivist learning model though a real challenge for our First Nations students because, I do not want to say they are shy so much as they are hesitant to speak because that is part of the culture and it is a big challenge."

Patrick stated, "They need understanding, patience, and adaptability to meet their requirements". Here, Patrick is referring to the online teacher adapting the curriculum. He remarked, "Sometimes you have to "backdrop" to address the gaps in their learning and you have to modify your course to meet their requirements as opposed to meeting the course requirements."

Solomon said, "I think we always have to look at it from their perspective and, I think, for the most part a lot of First Nations students are visual learners. So providing that sort of aspect to the courses to keep them engaged and connected is important. Solomon suggested the students conform to a particular learning style". He added, "In dealing with students at that age, there is a short attention span. So we have to keep their attention somehow. We have to keep them engaged and keep them interested." James said, "I have seen a lot of students drop out because they do not have the support to understand basic technical skills."

Tate stated, "Having them be comfortable to come see me for extra help has really helped my students." Wade added, "I spend a lot of time back teaching and re-teaching and supporting in that way for the students to be successful." On the other hand, William argued, "Students need a degree of independence and motivation as learners."

Chloe mentioned the importance of "onboarding and making sure the content is relatable to them." Leah added, "They need someone that monitors them." David said, "One of the first components that we looked at in terms of the virtual high school was how we were going to engage the students." Violet stated, "In order to be successful at an online virtual high school I think the first thing the students need is a willingness to take the course and a willingness to work hard. Online learning requires a very dedicated student."

Elsie said, "Students need good online teachers and a supportive environment." Ken echoed these words. He said, "Students need good teachers and they need the support of their parents and families."

The need for support. The interview participants focused much of their attention on earning credits, getting good grades, and completing their programs; and the suggestion that success for students at an online Aboriginal high school would include these Western criteria was confirmed by participants answering the online survey. However, it is reasonable to argue that Indigenous high school students who study online require a wide range of supports and resources to adequately address online readiness, academic gaps, and deficient technical skills. An important question that must be articulated here: Who is responsible for student success at an online Aboriginal high school? The interview participants addressed this question when they provided their definition and description of success in this context. The data show that teachers, families, the virtual school, and local community all contribute by motivating and supporting students.

When asked what students need in order to be successful at an online Aboriginal high school, the interview participants acknowledged the need for fundamental "supports" (academic and/or technical). These are necessary to address online readiness, academic gaps, and deficient technical skills. Among elemental "supports," they mentioned local community support, support from the attending-school, support from the online teacher, and technical support. As these varied types of "supports" are provided by different stakeholders, it can be argued that success requires a shared responsibility.

Local community support. Interview participants said local community support is an essential component for success for students at an online Aboriginal high school. However, they

referred to local community support in a binary manner. Some of the participants spoke about

support from an adult in the local community with reference to required physical presence. I

describe this as individual or personalized support. For example, Aaron, one of the online

teachers said,

> It is important that in the local community, there be some guidance provided
>
> by an adult who has some knowledge of how online learning works at the
>
> student end. This person and the online teacher can work together to provide
>
> a supportive environment for the student. (Aaron)

Aaron added, "This way, if the student has problems or difficulties someone in the local

community can provide assistance to the student to alleviate any unnecessary anxiety." Aaron

suggested "the online teacher and the person in the local community have to work together so the

student will get the best online learning experience." Aaron declared that students need help,

support, and reinforcement in their home community, "whether it is family, a guidance

counsellor, or staff, or friends, because online education is a very different approach to getting

high school credits and is still not the most common way to study." In addition, Aaron stated

"there has to be an understanding and a partnership, between the two entities, the online school

and the local community."

Like Aaron, Emily, Lily, and Leah also referred to the need for support from a

community member who can provide physical presence. Emily indicated "there needs to be

somebody on the student's end that can help get them organized and situated to avoid

frustrations." Lily stated "physical support from community members is important and it would

be best to clearly communicate what students need from the local community to be successful in

online learning." According to Leah, the physical presence of Elders is important. She stated,

"Elders and school administrators have to communicate because 'grassroots' is everything to First Nations."

Ken, a grandfather who is very much involved in his grandchildren's education, recognized the need for local community support. Ken shared, "Students need someone who can help keep them on track. They need someone who ensures they are completing their assignments. Students need support from their parents and families." Ken added, "I am very concerned that all our students are not able to complete all the requirements to pass the course. They need someone to support them to help get these things completed. Otherwise, there is no point in taking the class."

David confirmed that students at AVS have support from local community members. However, the kind of support he referred to was organizational support and not the required "physical presence" type of support that Aaron, Emily, Lily, Leah, and Ken spoke of. David said, "We have been very fortunate because every time I have gone to communities, education directors, and chiefs, they have always supported us. I said I need a letter of support from you. I need a band council resolution (BCR) from you. They are willing to provide these. They have been very supportive." David also said there is the need for organizational support from local communities to avoid competition between the virtual school and the local community schools. David, who is very knowledgeable about the history of AVS, outlined the following from his perspective as a First Nations educator.

Okay, we have a lot of our students that come out of school and who do not succeed very well and we want to make sure that we have an opportunity if the student wants to stay in the school to provide him with an enhanced education. That is what we looked at with the virtual high school from the get go, was

enhancing education, not replacing schools within the communities because it is

our feeling in terms of a First Nations' perspective that there is nothing like

having that real world experience. Experiential learning was one of the basis that

we built the school on. And so one of the things we try and do is we try to

encourage students to first of all take the courses in their own community, but if

the course is not available because of timing, or because it is just not available,

then we encourage them to enroll with our virtual high school. (David)

In essence, David was more concerned about organizational support, which I describe as societal

support. This is not surprising because David's work for AVS was organizational and

administrative. He stated that a successful virtual school needs a champion who looks after

administrative and organizational components that are fundamental to success. For example,

without organizational support and band council resolutions, AVS could face more acute funding

nuisances. Violet mentioned this, too, and as a school administrator, Violet focused on

administrative and economic support. She said:

We do not have sustainable funding. And so it seems to me that even though AVS

is starting its sixth year, we are always in a state of uncertainty. We have

experienced uncertain funding ever since EPP funding subsided. We had EPP

funding for the first three years of the virtual school and then after that it has been

a struggle year after year. It is really hard to build a school's reputation, to hire

good staff, to train good staff, to promote the school when we are uncertain from

semester to semester if we are going to be employed or not. At first I said funding

but now I have added the adjective of "proper" funding. I feel we could be doing

a lot more if AVS was properly funded. (Violet)

Violet raised a critical point about the need for appropriate funding. Hence, more information about the economic state of AVS is provided in Chapter Five.

In summary, there were two different types of local community support mentioned by the interview participants: 1) individual or personalized support in the form of physical presence, and 2) societal support. Teachers and guardians were more concerned about individual or personalized support and administrators were more concerned about societal support.

Support from the attending-school. The interview participants characterized support from the attending-school as an essential component for student success at an online Aboriginal high school. The attending-school refers to the brick-and-mortar school in a First Nations community. Students who reside in these communities register for face-to-face classes at the attending-school. However, many of these schools do not offer complete high school programs. Therefore, students enroll in courses at AVS so they can complete the courses needed to meet the provincial requirements for graduation. AVS allows these students to remain in their local communities while taking the online classes they need to graduate. The attending-schools provide support for the students when they enroll in the online classes with AVS. More information about the attending-schools is provided in Chapter Five.

James, the content manager, acknowledged that "the online teachers try to do their best to walk students through course work but more support in the attending-schools would be even better." James continued, "I think we have students who drop out because they do not have support." Here, James referred to individual or personalized support, i.e. a person in the attending-school who could help students navigate their courses.

In addition, Leah, the resource support staff stated that "students need someone who monitors them, to keep them on track."   For example, Leah said, "If a student 'takes off' from

where their computer is, someone needs to be making sure and reminding them that they are in class." Leah argued that "students need supervision at the attending-school, maybe a teacher, to keep them on track with things like printing off assignments."

Emily, from her perspective as a science and math teacher expressed concern. She said, "It is essential to have somebody on the student's end, a physical person in the attending-school, to support the student." Emily further emphasized, "There is a need to make sure the online teacher has someone to communicate with, someone who has an understanding of the student's life." Similarly, Leah stated that "the teacher at the attending-school is aware of all the challenges the student faces and what it feels like to be in the community and in that community school. The support of this person is very important."

William, the program director, articulated that "support at the attending-school is important to student success." He said, "For example, having somebody monitor the student to make sure the student is logging on and participating in the course. This helps with attendance issues and so on." William declared that "somebody at the attending-school who is physically there can immediately address students' issues."

Support from online teachers. The interview participants highlighted that support from the online teacher is an essential component for student success. Tate, who teaches technology related courses like web design, highlighted that "students need support from the online teacher." Tate noted, "I have found that the best successes that I have had with students in my courses have been where I have been able to create a personal connection with them." Tate expressed that "being able to provide students with academic support, and knowing that students feel comfortable to come for extra help has really helped student success."

Emily argued that ineffective teachers can hinder student success. She said, "Teachers are all very different from each other, and I am sorry to say this but a teacher can make or break a classroom in a sense. Support from the teachers is a really critical aspect of a successful school." Wade, too, specified that "students need a lot of teacher support, especially for the grade 11 and 12 science courses." He argued that "there is a lot of missing background information that the students need to know before they can be successful in higher level sciences because the content is so heavy." As a result, Wade said, "I spend a lot of time back-teaching and re-teaching and supporting in that way for the students to be successful in those classes." Wade mentioned that "it gets really frustrating for the students when they are not able to understand simple things. Especially if the teacher assumes they should know these simple things." He concluded with; "I would say a lot of support is definitely required to help students succeed."

Tate also spoke about support from the online teacher and argued this is critical to student success. Tate shared this:

Online office hours and just being available throughout the day whenever the students need, within reason, is huge. If students are working on an assignment at whatever time of the day, day or night, they can email me. I get all my emails to my phone so I am there to respond at any point in time. When I was in high school even, I remember if I had any questions, I walked up to the teacher's room or office at any point of the day and asked them for help. So having that support time and being available at any point in time during the day is really helpful and critical for the online high school because we do not have that face time with them on a daily basis. Being able to contact your teacher at any point in time,

whether that is seven in the morning or nine o'clock at night, I am there for my

students at any given point in time. (Tate)

Elsie provided her perspective on the need for teacher support. She sees the issue through the

lens of a grandparent who is very involved in her grandchildren's learning. Elsie said, "Teachers

not only need to support the student but also keep the parents informed." She spoke about the

excellent communication between the teachers and parents at AVS. Elsie recounted that teachers

provide timely feedback to parents. She said, "I appreciate the teachers at AVS."

In summary, online teacher support includes a wide variety of constituents including but

not limited to academic support, non-academic support, timely feedback, effective

communication, and availability. Emily emphasized that the development of a well-maintained

teacher–student relationship is crucial to each of the aforementioned support constituents. In

order to adequately provide the necessary supports, online teachers must possess or acquire

technical and pedagogical skills appropriate for supporting the varied needs of Indigenous virtual

high school students. Chapter Five provides an in-depth discussion about effective online

teaching at Indigenous online high schools.

Technical support. Interview participants identified technical support as an essential

component for success for students at an online Aboriginal high school. The case study

participants said two kinds of technical support are required to ensure student success: support in

the form of a physical person who can help students troubleshoot is critical, and support in terms

of technology infrastructure.

James, the content manager, presented his IT perspective. However, initially it was

unclear if James was talking about individual and personalized technical support in the form of a

physical person or if he was referring to societal technical support in the form of technology

infrastructure. James said, "Students need technical support in the schools. Students with the most support are the most successful. Students can get frustrated very quickly with the technology if it is not working properly, and if they do not understand what is happening." James further articulated, "I have seen a lot of students drop out because they do not have the support to understand how to go online properly, how to use their headset, and how to respond to assignments." In the latter statement, James referred to support in the form of a physical person who could help students troubleshoot.   He concluded with, "Frustration with technology and lack of technical support can lead to students dropping out of the program."

Interestingly, David stated that technical support is essential, and asserted that "AVS could have the best online teacher that is willing to meet students and give great lessons online but if students do not have technical support, it is a problem." David explained that "if students have technical issues like audio, bandwidth connections, computer issues, if there is nobody to support them, they are going to run into trouble." He emphasized, "If there is a breakdown anywhere with hardware on the user end, or being unsure of how the technology works, we really need to be notified right away." David concluded, "The support person needs to be there to communicate and help that student communicate their needs to AVS." He remarked, "There is going to be a breakdown in the learning if this does not happen."

Like David and James, Chloe shared her perspective on the issue of technical support and spoke about individual or personalized support that required physical presence. As a novice online teacher and a First Nations educator, Chloe expressed that "students need to have the technical supports on their end, for example, facilitators, who can assist with technical problems to provide technical support, if they are having microphone problems, or if programs are not working."

In contrast, Marcus, the IT technician, focused on technical support in terms of bandwidth. Marcus said, "Well coming at this from an IT perspective, I think that one of the most important things is Internet bandwidth." Marcus highlighted that "technology infrastructure and technology supports are critical." He said, "That is one of the things that can cause major issues for us. Some schools have a lot of bandwidth and they can have as many students in a classroom as they need to. Other schools don't necessarily even have enough bandwidth to reliably support one student."

Emily spoke about technical support in a dualistic manner. She intertwined individual or personalized support in the form of a physical person with technology infrastructure support. Emily stated:

> So going back to what they need to have, the Internet, and not only just the Internet but a strong Internet connection because a lot of things that we do these days require a lot of interactivity. I have students that are further up north, and the Internet connection is not terribly good in their community. It can take forty-five minutes for a video to load, or they play it, and it starts and it stops, and it starts and it stops. Those types of things can get really frustrating for students. We need to have certain types of technology, resources, and people that can provide the students with help to support their learning. So if they are not able to successfully and smoothly access these materials, then I think that can cause a lot of frustration, especially for the students. That certainly does not give them a good feeling about taking these courses online when we do get these frustrations. And it causes them to take that step back and even sometimes they give up because

that material is not as readily available to them. So it hinders their forward

progress. (Emily)

Emily argued that "if students don't have the right technology to access the course, then that is a

challenge in itself." Emily continued:

I mean we have got all of our northern community students, and the courses that I

create are very video heavy in a sense. I make videos and video solutions. I teach

math so students need solutions to all the different questions that they are going to

do. If they do not know how to do something, they do not have to wait for the

teacher. They can go watch a video. But if they do not have the technology and

they do not have the Internet to download or to watch a video at a regular pace,

then that is a real issue. So one of the things now that I am thinking about that I

did not say is for an Aboriginal high school to be successful, the communities and

the students need to have access to the appropriate technology support and

bandwidth. (Emily)

Quantitative affirmation. Two questions on the online survey addressed technology and

technical support. The survey results indicate that access to appropriate technology is critical for

student success at an online Aboriginal high school. For example, the results of the quantitative

data show that access to reliable Internet and computer are critical to success (88.24% of the

participants strongly agree). In addition, the results of the quantitative data show that teaching

students how to use a computer and navigate the web is critical to success (70.59% of the

participants strongly agree).

Quantitative affirmation questions. The qualitative and quantitative data confirm the

requirement of student supports for online students taking courses at an online Aboriginal high

school. Research indicates the need for academic and technical support is not unique to

Indigenous online high schools or even to any online learning environment (Picciano, Seaman, &

Day 2015). This will be discussed in Chapter Five.

At this point, I will identify the questions that emerged for me from the data. Firstly, what

are the underlying factors that attribute to the need for so many supports? Secondly, what is it

that students lack that these supports must address? The qualitative data show the need for

student supports and indicate there are underlying issues these supports must address. The

aforementioned questions emerged from the data analysis. These questions are discussed in

Chapter Five.

The Issue of Time Presents a Cultural Challenge

As with any online learning system, a successful Indigenous online learning system relies

heavily on the delivery model, program design, and organizational components. When asked

about critical factors for an online Aboriginal high school to be successful, the interview

participants identified synchronous delivery and flexible study (study that is not bound by time)

as essential for student success. The terms synchronous delivery and flexible study are often

confused. Synchronous delivery demands real-time participation and can encroach on the

absence of stringent time requirements that are characteristic of flexible study. The case study

participants stated that synchronous delivery and flexible study are essential to success, and that

they affect program design and other organizational components including, but not limited to,

class scheduling, teaching and learning activities, and technology used in program delivery.

Given that backdrop, it is important to understand the differences between synchronous delivery

and flexible study (Palahicky, 2015).

Synchronous delivery. A synchronous model refers to delivery of classes, exchange of ideas, and sharing of online resources and information in real time and simultaneously. This model requires students to be online, together, at the same time. Interview participants spoke about the importance of a synchronous delivery model. David provided the organizational perspective and specified that a synchronous model was chosen because "we felt that the interaction with the students themselves was the most important part in the learning experience, in terms of their success. One thing that was looked at when doing our original research was that students who did the asynchronous model had very little success." Here, David asserted his preference for synchronous delivery over asynchronous delivery. He highlighted the perception that synchronous delivery increases success.

Violet gave her administrative perspective and stated that "the model at AVS is a synchronous model which means the students have to be logged in with us and our teachers every single day. So if we have a full time student with us, they are taking four classes a day; two classes in the morning, 75 minutes in length, and two classes in the afternoon, 75 minutes in length." Violet concluded that "if at any time a student misses class, he/she can view the recorded lessons but our experience is that a lot of the students do not fall back and watch those recorded lessons." Violet, too, referred to the perception that the current synchronous model at AVS helps increase success.

Aaron, who teaches and develops online course electives, stated that "as the teacher, and in a location away from the students, I think it has to be a situation where I am talking directly to the students in what is known as a synchronous model so that we are live together at the same time: for continuity, for direction, for instruction, for all those things that are needed in a

classroom situation as well." Here, Aaron suggested a need to replicate the face to face classroom experience. He suggested a synchronous model could achieve this.

Patrick, a veteran science and math teacher, noted that the personal touch of the live classroom that comes with a synchronous model is a requirement for success. He said, "Teachers can give students positive comments and encouragement in real time. The online chat feature that is part of the synchronous delivery system (Adobe Connect) helps students to take part." Patrick, the veteran teacher of forty years added, "One of the big difficulties is my students do not speak. So being able to get them to chat and respond helps. A synchronous model allows for positive reinforcement." Patrick suggested a synchronous model helps increase student participation.

Emily agreed that a synchronous model has advantages including the "real" and "live" opportunities for teachers to build rapport with students. However, she countered with some of the disadvantages inherent in a synchronous model. For example, the synchronous model requires virtual attendance and inherently breeds issues related to absenteeism. Emily advocated for flexible study and articulated the need for a re-examination of requirements centered on the Western notion of semester-based study. In essence, Emily acknowledged the benefits of synchronous study and noted some of the challenges that accompany this type of delivery model. These challenges are examined in Chapter Five.

Flexible study. The interview participants identified flexible study (not bound by time) as critical to the success of an online Aboriginal high school. Can asynchronous delivery increase flexibility? While asynchronous delivery allows a student to access course materials at any time and does not require "real time" or "live" participation, it does not necessarily allow

flexible start and end dates. For example, offering an asynchronous course within a traditional semester system maintains a time requirement and start and end dates are not flexible.

Emily said "providing a flexible model that a student could just pick up where they left off" would be beneficial to students. Emily stated, "A model not bounded by time would work and would allow students more flexibility." In addition, Emily argued that "our students are not able to successfully complete a course at the standards that we have set out for them because of certain things like the time line. We have to finish things within a certain period of time." According to Emily, "every student is different, so time lines may not work especially when we consider the reasons why. For example, students miss classes to participate in cultural and community activities and events." Emily said, "The program needs to be flexible and set at an individual basis, and the focus should be providing what individual student's need. Teaching needs to be flexible to accommodate the student's specific style of learning." Emily highlighted the perception that students have a variety of learning styles, and their learning pace is somehow related to these. It is important to note that a debate about learning styles and learning preferences is beyond the scope of this case study and will not be discussed.

Emily articulated the importance of "having a flexible model that can support learners who are in class doing the 'live things' but it can also support learners that want or need a little bit more flexibility." Emily mentioned there is "the need for flexible study and every student comes with his/her own challenges, life experiences, and things going on in his/her personal life. So there tends to be a lot of absenteeism, which tends to work against students in terms of their success." Emily said, "In terms of helping students be successful, teachers need to be understanding of their unique situations. Teachers need to work with each student as an individual."

Emily concluded, "In order to be successful in an online Aboriginal school, the time factor should be waived. I think that there are a lot of challenges in terms of attendance within our communities and our schools that can really hinder our students moving forward." Emily challenged, "The time factor needs to be revisited. We are on a semester system and we do expect our students to complete the course by the end of the semester. Time lines greatly hinder student success." Like Emily, David spoke about re-evaluating time constraints within educational systems. He spoke from his personal experiences as a First Nation individual. David said:

First Nations theory around learning is that you give that child as many opportunities to succeed as you need. So one of the things we built around the virtual high school is that opportunity for a student to take an assessment again. Go read the material and take that assessment again. Try to not be a slave to a clock. Even at the end of the year where we have students who are on that cusp we say, "Well listen you know you did mess up and missed some key concepts over here, why don't you look at redoing this assignment and we will reassess you in terms of do you understand those concepts now." And that was really a turning point for us in terms of looking at curriculum as not just a series of tests where you are marked here and then that is it. We are more interested in the students themselves. (David)

Wade, a science teacher with five years of teaching experience, pointed out that "students need multiple opportunities to get better at their skills. When study is time bounded, the focus is not on developing the skill but completing it within the time period."

Similarly, Aaron said there are situations where instructors "will look at an individual student and say if you can succeed at this level that is terrific. And if time is not a factor then we can spread out the success rate over time." Aaron added, "If students are not able to graduate in four years, they could in five years and that is quite okay. If it takes longer to complete a course this is not an issue." Aaron emphasized that "as long as the student can meet the course standards or at least stick fairly closely to the standards, this is more important than the time it takes."

James, the content manager, commented about the need for a flexible schedule that accommodates many Indigenous cultures. He said, "There needs to be more flexibility with the school schedule. We serve many different communities with multiple cultures and multiple needs. Our schedule needs to be more flexible to accommodate all the different needs of the multiple communities we serve."

Quantitative affirmation. The results of the quantitative data support the contention that synchronous online classes are perceived to be critical to success (64.71% of the participants strongly agree, and 23.53% agree). Furthermore, the results of the quantitative data indicate that flexible start and end dates are perceived to be critical to success at an online Aboriginal high school (35.29% strongly agree and 29.41% agree).

Quantitative affirmation questions. A synchronous model can be beneficial and can aid in building and maintaining teacher–student relationships. Synchronous classes can provide a pseudo-face-to-face classroom experience that allows teachers to give positive reinforcement and encouragement in real time. However, if absenteeism is a problem, a synchronous model faces some significant challenges. The following question emerged for me from the data: does a synchronous model provide more adequately for learners' needs? This question is addressed in Chapter Five.

Teachers, Staff, and Parents Rely on Culture to Increase Student Success

The results of the qualitative data indicate that culture plays a multiplicity of roles in shaping success at an online Aboriginal high school. Interview participants indicated that Indigenous culture can address students' needs, curriculum design, and school culture. Inclusion of culture has been shown to motivate students by making the learning relevant and by increasing self-confidence. I discuss this in further detail when exploring the second research question.

Success is present when Indigenous culture is integrated into the school at both the institutional and curriculum levels. The case study participants were very emotional and expressive when they spoke about the role of Indigenous culture. They took deep breaths and pauses when responding. Participants who self-identified as First Nations gave lengthy and descriptive replies that included personal reflections and experiences. Violet spoke passionately as a First Nation individual and as an administrator at AVS. Violet said:

> Reconnecting Aboriginal learners to their language, history, and their culture, I
> think that is going to be essential in the success of any Aboriginal learner coming
> up in their education. I think the effects of residential schooling and colonialism,
> and all of those things that we all know in our heads that have happened have had
> such deep and profound effects on the Aboriginal people. And so when you say is
> reconnecting the Aboriginal learner to their history and culture and language, do
> you see that as an important component to success of an online school, I am going
> to say I see that as an essential component to their success in any school. And so
> whether it is online or whether it is in the community, I do not see a difference
> there. I think what we need to do as Aboriginal people and as Aboriginal

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communities and school leaders and just everybody who works in the Aboriginal education genre, I think we all need to make a concerted effort to do this.

When we have multi-generational effects from colonialism and from residential schooling, there is a, I do not even know what to call it. It is an epidemic, I am going to say. It is an epidemic of lost people. And so when there is no connection to anything, it is really hard to be successful when people do not know who they are and where they come from, and it is just plain they just do not know. It is just such a disheartening thing to see that. And even for myself, coming from an Aboriginal culture, I do not know my language. I do not know the full aspects of my culture. I know bits and pieces. I know things that I have read. I know things that I have experienced as far as taking part in ceremonies and taking educational opportunities to learn more. But certainly I am no expert in spearheading that. I think it is something that as a collective we have to decide as communities what we are going to do here. I just see it as something that is so important; to revitalize a language that I am going to say is lost.

The reserve I come from is Peguis and there are hardly any speakers. You would be hard-pressed to find anybody who is fluent in the language. And so we may as well say that language in that particular community is lost. There are other communities where the loss of language is not so profound but even then the number of speakers, they are all elderly. And so how many of their children know the language and how many of their children's children know the language? Now we are on to the grandchildren or the great-grandchildren. The language is not being passed down and that is a direct effect of residential schooling. And so

to stop and say we need to do this, I think that is something that is so important

whether it is in an online school or whether it is just in a community school, we

have to do that. And I think here at AVS what we are trying to do is we have

taken the Cree language course and we have taken the Ojibwe course and we had

some contractors write these courses. I am going to say that was two years ago

now.

So we have these courses that were written by a fluent speaker, but we

have not worked on them and the reason we have not worked on them is because

we have not been able to expand our staff to include a language speaker. And so

as we had a person writing content, this is very different from putting that content

up in our online environment, to make that a synchronous course. We do not have

anybody to work on that course, to make that into a two thousand page robust

course full of video and full of additional supports. We have a basic course that

has some words in it and talks about language and talks about culture, and it has

some storytelling and it has the components of a grade nine language course, but

certainly we have not been adequately funded to be able to work on that. And so

do I believe it is very important? Yes. I believe it is very important to have those

components. I wish we had a speaker at the school. I wish we had more

Aboriginal teachers in our school. (Violet)

According to Kell (2014), while many Indigenous people rightly view their ancestral language as

the "first" or original language of their community, most Indigenous language learners are

learning their ancestral language as a second language (p.5). Violet touched on some key issues

including lost ancestral languages and lack of sufficient funding to support the development of

Indigenous language programs. In the subsequent paragraphs, David discussed the costs for development of Indigenous curriculum.

> But again, one of the things that happens is a course generally costs us about half a million to three-quarters of a million dollars to develop because it takes time and then you are developing resources, and then like most things we have to develop our own First Nations resources because you cannot just go online and Google things like creating language activities. You are not going to get very many. So a lot of those are created from scratch and that is what costs. Some of the other processes that we have engaged in in terms of making sure that the school is focused on the First Nations perspective and making sure it is for First Nations is we do talk to the students about what courses they are going to need and where their struggles are. So again, a lot of their feedback comes into the courses when we do redevelopment.

> Our redevelopment process is pretty good. Generally, we get one instructor to develop the course and it will take them about a year and then they will run it with students, the students will give them the feedback and then they adjust the course to the students' needs. And then we give it to somebody else and say, "Okay now you teach it with all these resources" and a second teacher will come in and do that final revision and say, "Okay well this is what is missing or that is what is missing" and then they will work to improve the course. (David)

While Violet and David focused on funding, development, and curriculum issues, the other participants focused on culture in its affirmative role and how it affects students and teaching activities. Chloe, who self-identified as First Nation, said the individual student benefits from

the integration of culture in the school and curriculum. Chloe's perspective is that of a youthful

First Nation individual. Here are her words: "Reconnecting to Aboriginal culture is what will

give students a stronger sense of who they are." Chloe said, "I think the reason why we struggle

in education is because we have not acknowledged our history in education, especially with our

residential school factor." Chloe shared, "Students and some adults are not aware of our history

and the effects of colonization on our communities."

Encouragement of a positive self, and learning as a personal and relevant process were

identified as key elements that contribute to success. Wade, a non-Aboriginal, declared that

"reconnecting anybody to their language, history and culture is important because it encourages a

positive self that definitely would contribute to success." Marcus, a non-Aboriginal, stated that

"incorporating language and culture makes learning more personal." He said, "I think it gives a

lot of respect to the students to say this is who you are and we want you to be who you are when

you are here."

Aaron, with his non-Aboriginal perspective, said that "the more you can relate to a

person's cultural background, the better you understand them.   It is important to integrate

cultural elements into the school." Patrick, who is also non-Aboriginal pointed out that "there is

a course taught at the planetarium that teaches the history and the lessons of seasons through

astronomy using Aboriginal stories. This makes the learning more relevant for the students."

Patrick mentioned, "Elders should be consulted and they should be invited to come participate in

school activities." Patrick concluded, "We need to include and encourage students to use their

Aboriginal names. I had a student who could say thank you in 10 different languages and I

would encourage her to use these languages in class. It is important that we encourage this

because it will disappear if we do not use it."

Elsie, a concerned grandparent, said culture is important and it helps reinforce to the students to be proud of their heritage. In contrast, Emily, Aaron, and David shared the same perception that culture is important but it is only one component of many that are essential for success. Ken shared his views on this and provided his outlook as a concerned guardian of his First Nations grandchildren. He shared, "The essentials are that students learn the fundamentals: to read, to write, and to know basic math. I fear that the cultural components may not produce students who have hard skills, and who can perform the required skills." Ken added, "Culture is important. Yes. It is important, as long as students achieve the other parts, the fundamentals, as well." Ken stated, "My concern is I am not sure if an online education program can provide the cultural components." Ken concluded, "I know the teachers at AVS are really good, and many come from Aboriginal communities and are role models. I agree. Yes. Culture is important but students need to have the other fundamental skills, too." Ken highlighted the perception that online schools are not the most effective environments for fostering cultural development and community building. This is discussed in Chapter Five.

In summary, the participants articulated the importance of reconnecting Aboriginal learners to their languages, history, and cultures. Culture helps in understanding who the student is as an individual within an Indigenous community. The interview participants acknowledged that teachers cannot develop personal connections with students if they lack an understanding of who the student is as a cultural being. The participants stated that language reconnection and preservation was a key area of concern. Another concern was the costs associated with the development of Indigenous curriculum. Chapter Five provides a detailed discussion about the reliance on culture to increase student success.

The role of culture. The interview participants shared their perceptions about the role of culture in shaping a successful online Aboriginal high school. David, with his organizational perspective, said, "I think that our retention numbers would be a lot higher if we were able to make the course materials relevant to the student that was taking them. Our instructors do the best job they can, as I said before, we really do need to have a cultural specialist involved in the virtual high school and if we could afford to do that we would." David avowed, "I was part of Niji Mahkwa and those first three years were a big struggle, to try and change the format of education for those students." David continued with, "We had a lot of very good leaders who were really trying to ingrain those First Nations philosophies and practices into the education model. It took a long time to develop that school. I think now, it is fairly successful but those processes take a long time."

Even when he responded to questions about the role of Indigenous culture in shaping success, David focused on organization and leadership components. On the other hand, Chloe, who is First Nation, shared her views as a teacher and spoke about some of her instructional practices.

I think it would make things more engaging for students and help them have a better understanding of the information that you are going over. In some of my courses I do incorporate history. I try to tie it back to their communities, getting them to find out stories, or connect them with other Indigenous nations. I try to show that other First Nations people are facing the same issues as them. I heard this study, too, saying that when First Nations learned about their culture, or they spend time with their culture, or learning about it, that their health increased. So I would assume that if that increases their health or their wellbeing, then it is going

to increase their education, which would increase their success. If you consider

the wellbeing of someone, if something is off balance, then you are not going to

reach your full potential. (Chloe)

Violet added, "And they will realize that at the same time, too, they are part of a greater whole. Whether they are Ojibwe, Cree, Dene, just instilling that community feeling and knowing where they have come from as First Nations people with a proud heritage." Ken, a grandfather and First Nation individual, said, "Cultural traditions and art are important and need to be explored in an online Aboriginal school."

Participants noted that learning could be enhanced through increased cultural relevance. Leah, who is First Nation, stated that "culture, background, and prior knowledge can help students make connections to learning. It helps to make learning relevant to the students, and confirms who they are." Leah stated, "I grew up on the reserve but we were really strong with our family. Going out to camp and learning about our traditional ways allowed us lots of hands-on learning." Leah added, "We did lots of problem solving and then when I came back to the classroom, I would read about it, and I would make connections. I grasped the concepts well because I had the prior knowledge already." According to Elsie, a grandmother and First Nation individual, "It is important to the students to include aspects of their culture in the school so they feel valued."

Solomon, who is First Nation, stated, "I think it gives students the sense of community, the sense of belonging, and the sense of being a part of something that is rich in history and rich in culture." Solomon added, "We have so many communities represented and again so many cultures, and so many languages. Students will be able to see and have that interchange with the

different people and have that knowledge exchange with the other students." Solomon added that "it is important to learn about the diversity of Indigenous cultures, too."

Tate confirmed, "I think it is important to any Aboriginal school, whether it is online or not. I am Métis and I am in the middle of re-learning my language. It is something that was lost through my family and I am taking the steps to bring it back." Tate highlighted this, "So in my courses I encourage my students to speak their language, if they know it. Even if they do not know it entirely, if they know little bits and pieces to speak it." Tate said, "I think it plays a huge, huge role. To be honest, culture comes down to being appreciated. It is important that students feel appreciated, welcomed, and safe."

Wade, a non-Aboriginal, said, "It is about the good habits that culture instills in people in general: working hard, respecting each other, respecting the teacher, respecting yourself, and having a balance in your life." Wade said, "Language does teach you culture, it teaches you in a holistic way."

Lily, a non-Aboriginal, argued that "culture has to do with relationships and how people relate to each other, communicate with one another." She said, "It is important to have a learning environment where students feel safe enough to take risks, fail, try again, and learn. It is important to create a school culture where people, administrators and teachers, have the same script." Lily continued with, "We do things this way at this school because we are an Aboriginal school." Lily concluded, "In order for a program to survive it has to be valued by the community and the partners that make up that program. An Aboriginal program is valued when it is reflective of an Aboriginal world view."

Emily affirmed that, "Aboriginal culture is important." She added, "We do definitely need to consider that when we are shaping the model for our high school. Some of my students

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they will go traplining for two weeks, for an example, or they have their culture weeks or certain other events." Emily stated, "Culture can breed success, and it has to do with, not just necessarily say the culture within the classroom, not just the culture within the school, but the school I think has to definitely make those connections with the communities as well." Emily concluded with, "I find it really hard to say you have to choose between coming to class and going to these cultural activities."

James, the content manager who did not self-identify as Aboriginal or non-Aboriginal said, "I think the curriculum has to be re-written or re-thought from a cultural perspective and presented in a way that is culturally appropriate. So that means, people from the communities and from the First Nations actually evaluating the curriculum and seeing what is the best way to deliver it." James added, "For us to move to the next level, we need to bring in teachers from the communities to teach languages and culture. Community involvement at the teaching level is what we need to really meet the needs of students."

Quantitative affirmation. The results from the quantitative data show that 88.23% of the online survey participants agree that reconnecting Aboriginal learners to their languages, history, and cultures is critical to the success of an online Aboriginal high school. Furthermore, the majority (58%) of those surveyed agreed with the suggestion that including Aboriginal languages in the curriculum is critical for success at an online Aboriginal high school. In addition, the results of the quantitative data show that having teachers who know about Aboriginal cultures and languages is critical for success at an online Aboriginal high school. The survey results show 88.23% of the participants agree with this statement (i.e. 58.82% strongly agree and 29.41% agree).

Finally, the results of the quantitative data show that 94.12% of the online survey participants agree (i.e. 64.71% strongly agree and 29.41% agree) that including Aboriginal culture and history in the curriculum is critical to the success of an online Aboriginal high school. When asked if Aboriginal culture is the driving force for success in an online Aboriginal high school, 64.71% of the participants said they agree with this statement (i.e. 17.65% strongly agree and 47.06% agree).

Quantitative affirmation questions. The participants described the role of culture in numerous ways but there is one consistent filament encapsulated in their responses: culture plays an affirmative role. This question emerged for me from the data: what fundamental needs do students possess that culture, in its affirmative role, can address? I will discuss this question in Chapter Five.

Chapter Four Summary

In this chapter, the four emergent themes were discussed: teachers, staff, and parents use Western standards to describe success; success at an online Aboriginal high school is a shared responsibility; the issue of time presents a cultural challenge; and teachers, staff, and parents rely on culture to increase student success. Five relevant questions surfaced as a result of the findings presented in Chapter Four: 1) What are the obstacles or challenges that prevent Aboriginal high school students from meeting Western standards of success? 2) What underlying factors contribute to the need for so many supports? 3) What is it that students lack that these supports must address? 4) Does a synchronous model provide more adequately for learners' needs? and 5) What fundamental needs do students possess that culture, in its affirmative role, can address? I address these questions in Chapter five.

Chapter 5: Discussion

Introduction

As recently as March 22, 2016, the Liberal government announced 8.4 billion dollars of new funding to bring about transformational change for Aboriginal Peoples. "This amounts to a per student increase of nearly 20 percent relative to the previous fiscal year and comes at a time when greater funding is urgently needed" (Anderson & Richards, 2016, p. 2). Canadian Press reported that "billions in new spending will be directed toward Aboriginal programming, including funding to address issues including education, reserve water and child and family services" (Kirkup, 2016). First Nations National Chief Perry Bellegarde calls the federal budget "historic" (Fontaine, 2016). However, Cindy Blackstock, head of the First Nations Child and Family Caring Society of Canada, as well as Minister of Indigenous and Northern Afffairs Carolyn Bennett agree that the new budget is a good start but worry that the funds are still not sufficient to adequately address child welfare and housing (Fontaine, 2016). The new budget announcement brings economic gaps between Aboriginal and non-Aboriginal communities to the forefront and in particular the gap between reserve and non-reserve communities. Grand Chief Derek Nepinak, head of the Assembly of Manitoba Chiefs states: "But it's going to require more in the long term to be able to close that gap efficiently." Craig Alexander, vice-president of economic affairs at the C.D. Howe Institute, said "We need to understand that isn't a silver bullet. There are some underlying barriers that actually need to be addressed so that we get the positive outcomes" (Kirkup, 2016). This new budget highlights that Aboriginal education is one of the essential services that is currently underfunded and it also emphasizes that efforts to transform

Aboriginal communities require strategic economic efforts that address education, child welfare, housing, health, family services, and infrastructure. These issues will directly affect Awa Virtual School and student success requires improvements in all these areas. This chapter presents a discussion of the data collected and reported in this case study and examines how some of these underlying issues delay success for students at AVS.

Research Question One

What are the essential components of a successful Indigenous online high school? This is the first research question posed in this case study project. The results of the qualitative data, supported by the quantitative data, show the research participants' perceptions about what components are essential and or critical to the success of an online Aboriginal high school. The participants identified three essential components: support, flexibility, and culture inclusion. Figure 5 shows the essential components of success identified by the research participants.

Individual and personalized supports. The case study participants expressed the need for a physical person in the local community or at the attending-school who could provide students with reminders and keep students on track and on task. Furthermore, the participants articulated a need for a physical person being the point of contact, someone to monitor students and help keep them focused on completing assignments and other course-related activities. Moreover, the research participants expressed a need for technical support that requires physical presence, i.e. a support person who could help students troubleshoot technical problems. According to Philpott, Sharpe, and Neville (2009), lack of on-site supervision for Aboriginal students is a significant organizational issue that can negatively impact student success. Students in the Philpott et al. study state they were easily distracted because there was no physical person

on-site who was monitoring student behavior, and that these distractions hindered student progress. The emergent question is as follows: Why do learners need a support person or someone to help keep them focused, organized, and on task? I argue that the lack of online learning readiness, learner motivation, academic preparedness, and poor study habits lead to the need for individual and personalized student supports.

Figure 5: The Essential Components for Success at an Online Aboriginal High School
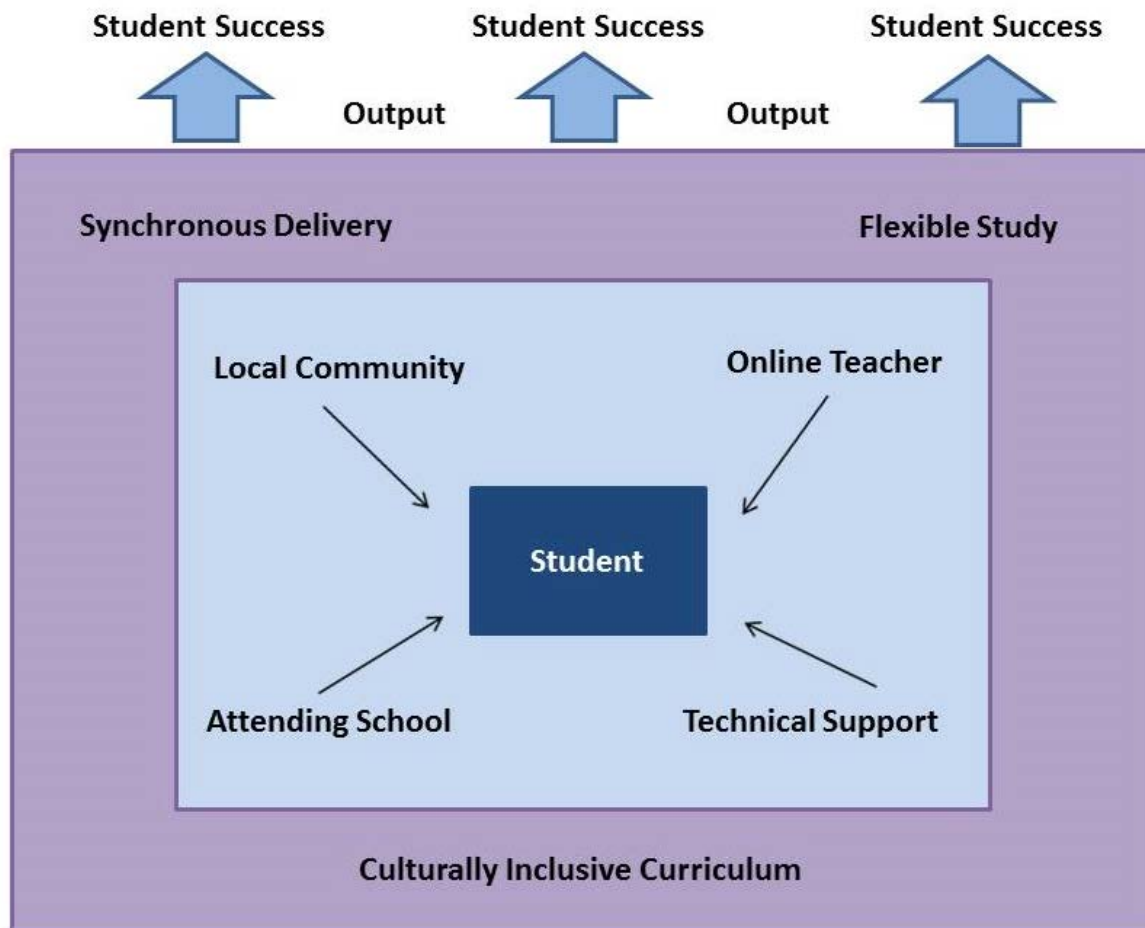
Student needs. According to Picciano, Seaman, and Day (2015), "educators express concerns and perceptions that online learning is not as effective as face-to face-instruction" (p. 4).

Picciano et al. argue these "concerns relate to the students' motivation and maturity levels, study habits and organizational skills, as well as their academic preparedness" (p. 4). The data collected in this case study reveal that due to a lack of motivation, initiative, and lack of online readiness, some students at AVS do not possess the ability to stay focused and on task unless they are reminded and managed. According to Dabbagh (2007), online learner characteristics can be predictors for success. Some of these characteristics include attitudes, personality characteristics, study habits, and individual learning preferences. Dabbagh states that Aboriginal and non-Aboriginal learners who are successful in online classes are self-motivated, goal oriented, disciplined, and self-starters. Similarly, Mandernach, Donnelli, and Dailey-Hebert (2006) argue that a successful online learner must possess personal initiative, drive or motivation. Roblyer and Marshall (2002) identify the essential characteristics of Aboriginal and non-Aboriginal virtual high school students. These include learner control of learning environment; internal versus external motivation; self-confidence/ self-esteem; responsibility; degree of experimentation (risk taking); time management; ability to set goals; achievement motivation; and self-reported computer/technology skills. I argue that Aboriginal online high school students need support to help address their own lack of motivation, study habits, lack of academic preparedness, time management, organizational and technical skills (Mandernach et al., 2006). Lim and Kim (2003) examine the five different types of motivation online learners must possess: course relevancy (CR); course interest (CI); affect/emotion (AE); reinforcement (RI); and self-efficacy (SE). "Among the five motivation variables, course relevancy was indicated as the most important factor followed by self-efficacy and reinforcement" (Lim & Kim, 2003, p. 430). I argue that in order to promote course relevancy for Aboriginal high school students, a culturally inclusive curriculum must be utilized. As stated in Chapter Two of this

study, two quasi-experimental studies that presented evidence of the causal effect of culturally inclusive instruction on academic outcomes include Tharp's (1982) study and Lipka and Adams' (2004) study. Tharp reports positive effects of culturally based programs on reading test scores, and Lipka and Adams report positive effects of culturally based programs on a mathematics unit. The studies conducted by Tharp and Lika and Adams were not set in a Canadian context and they examined effects on courses, not programs. Given this, I acknowledge that "further evidence in this area could help to bridge the gap between the standard academic goals of provincial/territorial education systems and the holistic goals of many Aboriginal organizations" (Friesen & Krauth, 2012, p. 22).

Furthermore, to increase self-efficacy, Aboriginal high school students must have access to individual and personalized technical support in order to be successful in virtual schools. Although students at AVS are required to take an online readiness assessment, the program must support students who do not meet the standards for online readiness and who do not possess the required technical skills. The data collected in this case study reveal that students at AVS may lack appropriate technical skills, such as the ability to navigate the web, use a headset, download a video, and troubleshoot technical issues. I argue that success at a virtual high school requires Aboriginal learners to develop and exhibit fluency in the use of online learning technologies, computer and Internet usage, and computer and Internet literacy (Dabbagh, 2007; Mandernach, Donnelli, & Dailey-Hebert, 2006).

Effective instruction. The case study participants identified some of the eminent characteristics online teachers must possess in order to provide support to students. They expressed that the online teachers need to be well trained, content experts, knowledgeable about Indigenous languages and cultures, and skilled in the use of technology. According to Sandholtz

(2011), there are factors associated with both effective instruction and ineffective instruction.

Factors associated with effective instruction include student participation, student understanding,

restructured lessons, and standards and objectives. On the other hand, factors associated with

ineffective instruction include instructional strategies, knowledge of students, planning and

preparation, time pressures, and subject matter knowledge. Based on the data collected for this

case study, it can be articulated that the teacher's knowledge of students is as important as

student-teacher relationships. I argue that the role of the online teacher is of considerable

importance to student success in Aboriginal online high schools.

Mandernach, Donnelli, and Dailey-Hebert (2006) argue that "the role of the online

teacher is amplified due to the lack of peer-to-peer interaction and the absence of typical, non-

verbal cues and spontaneous discussions [that are a part of a] face to face classroom" (p. 10). The

need for online teachers to provide timely feedback and support to students is pertinent.

Moreover, Philpott et al. (2009) state that the online teachers need to be content experts, effective

in their methodology, encouraging, attentive to the needs of the students, available, and able to

provide timely feedback to students.   Philpott et al. describe the relationship with the online

teachers as a personal connection. "Given the initial trepidation of engaging in [online] courses,

this personal connectivity is clearly an essential component for success of students from these

[Aboriginal] communities" (p. 8).

The data from this case study reveal that a personal connection requires an awareness of

the needs of the student, regular and continuous communication, and care and concern for the

student. Johnson-Leslie (2007) noted that there are 13 key qualities of effective online high

school teachers: care for students; show respect and are fair; have teaching experience of at least

three years; are formally trained and certified in teacher preparation; hold high expectations for

themselves and for their students; dedicate extra time to instruction preparation and reflection; maximize instructional time by being organized and employing effective classroom management techniques; enhance instruction by utilizing multiple instructional strategies, activities, and assignments; present content to students in clear and meaningful way that fosters understanding; monitor students' learning by utilizing formative and informative means of assessment; provide timely and informative feedback, and re-teaching material to students who did not achieve mastery; demonstrate effectiveness with the full range of student abilities in their classrooms, regardless of the academic diversity of the students; and listen to, question, respond to and validate each student as a unique individual. Based on Johnson-Leslie's (2007) 13 key qualities of effective teachers, support from the online teacher could be academic or non-academic in nature. As identified in Chapter Two of this study, support by the online high school teachers in the Labrador study included "displaying attentiveness to student need, and being encouraging of student participation" (Philpott et al., 2009). Non-academic support could take the form of encouragement or providing non-academic resources for things like goal setting. I argue that support could also take the form of validating a student's cultural heritage (Tunison, 2007; St. Denis, 2010). The data from this case study reveal the online teachers at AVS are qualified, experienced, and well-trained.

In 2010, the Canadian Teacher's Federation initiated a research project that investigated Aboriginal teachers' professional knowledge and experience in Canadian schools. The study was conducted by Verna St. Denis. Fifty-nine Aboriginal teachers across Canada were interviewed for this study including First Nations, Métis, and Inuit Peoples. The teachers who participated in the study said they valued the opportunity to teach Aboriginal history and culture to foster responsible citizens, to challenge negative stereotypes of Aboriginal Peoples, and to

serve as role models (St. Denis, 2010). The Aboriginal teachers who participated in the study

offered some recommendations. Some of these include: honour and respect the unique nature,

value, and contributions of Aboriginal knowledge; actively seek to train, hire, and retain more

Aboriginal teachers; require all teachers and teachers-in-training to complete studies in

Aboriginal education including; contemporary Aboriginal issues, a critical perspective on the

history of colonization, critical anti-racist education, and Aboriginal cultural knowledge;

encourage the functioning of non-Aboriginal allies to support and mentor Aboriginal teachers;

encourage Ministries of Education, in consultation with Aboriginal teachers, to develop and then

make accessible Aboriginal curriculum; seek to establish more partnerships with the local

Aboriginal community and leadership to better meet the needs of Aboriginal students and

teachers; ensure that Aboriginal teachers are meaningful participants in all working groups,

policy development initiatives, and finding determinations that deal with education. The study

"emerges from a well-documented and enduring crisis in public education, namely the failure of

schools to provide adequate education for Aboriginal students" (St. Denis, 2010, p. 11). A

significant point raised by the Aboriginal teachers who participated in the study is that they

articulated that good teaching requires them to be sensitive to the lives of their students. They

expressed the importance of "loving and caring for their students, and creating a safe learning

environment for them" (St. Denis, p. 64). Here, it is evident that having Aboriginal teachers can

positively affect student success as Aboriginal teachers can serve as role models and help

provide students with "a sense of presence and belonging" (St. Denis, 2010, p. 64).

    Domains for online instruction. Teachers at Aboriginal online high schools need technical

and pedagogical training in tandem because the most effective online learning strategy is rooted

in pedagogical frameworks that methodically integrate technology, i.e. technology tools are

selected and used to help students meet learning outcomes and not haphazardly integrated. The

data from this study show that teachers need to select appropriate tools to support pedagogical

frameworks. For example, Emily stated that she uses videos to demonstrate how to work through

mathematical problems and provide solutions to assigned homework. However, she noted that

her students in rural communities experienced significant bandwidth issues when viewing the

videos. Technical training would be required to identify possible solutions, for example,

reducing video file size or identifying a different tool that might serve these students more

effectively.

In addition, teachers at AVS and other Indigenous virtual schools must develop a

comprehensive understanding of Indigenous pedagogy. There are two important points to

consider. Firstly, teachers who are currently providing instruction in Indigenous virtual schools

need to possess or develop the necessary skills for effective instruction. Secondly, pre-service

teachers need to develop the required skills for effective instruction in Indigenous virtual

schools. It is unfortunate that many teacher education programs do not offer specialized training

tailored for online teaching, use of educational technologies, nor development of multi-media

materials for instruction. This is still lacking in many teacher education programs across Canada

(Bennet, 2012). Bennet argues that "the shift to online learning in Canada has met with

resistance from some Canadian teacher unions, varying in degree from one province to another"

(p. 4).

Estes (2015) argues that today's K-12 teachers must be "technologically literate which

includes: (a) knowing how to use technology tools; (b) demonstrating pedagogy for technology-

integrated instruction, (c) having the self-efficacy for implementing pedagogy through

integration of technology with instruction" (p. 63). Kumi-Yeboah (2015) states, "The time has

come for teachers to use instructional models in online learning in K-12 schools. Instructional models in online learning serve as a principal guide for teachers in the development or re-design of courses for K-12 learning environments" (p. 137). Ikpeze (2010) argues that teacher educators need to "create multifaceted opportunities and motivating contexts for teachers to experiment with new technologies so that current and prospective teachers are able to explore and synthesize their experiences as new technology users" (p. 345).

Furthermore, as learning management systems (LMSs) are ubiquitous in virtual schools, online teachers need training on how to use these platforms to design, develop, and deliver online courses. Online high school teachers frequently perform the dual role of content expert and instructional designer. This dual role demands a particular skillset that teachers must develop including technical and pedagogical skills centered on constructivist principles. A constructivist approach refers to the idea that students construct meaning through relevant learning activities (Biggs, 2003). Furthermore, online teachers need to gain the knowledge and technical skills needed to use the integrated tools of the LMS, i.e. discussion forums, gradebook, and online quiz tool. In addition to LMSs, teachers who deliver synchronous classes also need to master synchronous delivery tools such as Adobe Connect, Blackboard Collaborate, Blue Jeans, or Skype. Further to this, pedagogy for effective synchronous delivery must be incorporated so that synchronous lessons maximize the opportunities for multiple forms of interactions: student to student, student to teacher, and student to content (Moore, 1989). Synchronous tools are misused when students passively sit and listen to a teacher give an online lecture. Students need to be active in synchronous classes by answering and posing questions, having real time discussions, or giving presentations themselves (Palahicky, 2015). I argue that there are five

domains for effective online instruction. Within each domain there are specific skills required to facilitate student success. Figure 6 shows the domains and skills of an effective online instructor.

Figure 6: The Domains and Skills of an Effective Online Instructor

Pedagogy & Teaching
Understands how learning occurs
Applies Bloom's Taxonomy
Respects diverse talents and ways of learning
Awareness of needs of students

Facilitation
Provides proper framework to:
Enhance learning
Develop learning community
Enhance motivation

Instructional Design
Conducts a critical analysis of the learning need and determines suitability of need for online learning
Applies instructional design principles and models
Ensures there is alignment of:
Learning objectives
Learning activities
Learning assessments

Technology
Proficiency of/use of tools in LMS
Proficiency with synchronous vs. asynchronous learning environments
Stays up to date with and learn about new software needed for teaching
Develops technical literacy required for online learning environments
Assists students with technical/software functions if needed

Content Expert
Mastery of subject material
On-going professional development to remain current

Synchronous delivery. The case study participants identified synchronous delivery as an essential component to success. According to Song, Singleton, Hill, and Hwa Koh (2004), synchronous course delivery allows online participants the opportunity to form connections with the instructor and other classmates. On the same note, the data collected in this case study reveal that synchronous delivery allows teachers to give positive reinforcement and encouragement to students in real time. Additionally, teachers monitor students' progress more closely, and they can build a strong, personal relationship with the students. Students perceived as shy can

participate using the online chat tool and receive immediate feedback from teachers during the synchronous sessions. The results of this case study support the view that Aboriginal high school students need positive reinforcement, strong personal relationships with their teachers, and require help from their online teachers to remain engaged in their studies. These needs can be adequately addressed using a synchronous delivery model (Song et al., 2004).

Heafner and Plaisance (2015) state that synchronous delivery at the K-12 level "is imperative in creating engaging and interactive online learning experiences" (p. 110), and argue that synchronous delivery is important because learning is a social process, and there is a need to establish social presence in a classroom. Besides, synchronous delivery is currently offered in three of the four Aboriginal virtual high schools in Canada including: Gai Hon Nya Ni: the Amos Key Jr. E-Learning Institute and Foundation in Ontario; SCcyber E-Learning Community School in Alberta; Wapaskwa Virtual Collegiate in Manitoba; and it was offered at Credenda Virtual High School in Saskachewan (Barbour, 2013).

Challenges associated with synchronous delivery. The results of this case study reveal that synchronous delivery demands virtual attendance and presents challenges for students who are not motivated to attend regularly or who choose to participate in cultural activities. If a full time student at AVS misses one full day of classes, he/she would have to watch five hours of video recorded lessons to catch up. If one week of lessons is missed, the student would have to watch 25 hours of video recorded lessons to catch up. Does this mean there is an unrealistic expectation that a student would be able to catch up? This could be compared to face-to face-classes. Students are not expected to watch or listen to all the lessons taught while they were away from their brick-and-mortar school for a week. However, if students never catch up, this will lead to the development of academic gaps.

Another principal challenge of synchronous delivery is coordinating school schedules. If a student in one local community school is taking the same online class as a student in another community school and they are expected to log on for the online class at the same time, this would mean their school schedules would have to be aligned. This raises the issue of scheduling conflicts notwithstanding the scheduling issues that exist within one school. Scheduling classes is always a very tricky, complex, juggling act and school administrators often complain about the complexity of this work (Philpott et al., 2009). A third challenge is that synchronous delivery prevents flexible start and end dates as students are at different points in terms of their progress through the course materials.

Why not use asynchronous delivery? Arguably, with an asynchronous delivery model, absenteeism is not a problem because students access the course materials on their own time whenever they are able. However, asynchronous delivery which necessitates learners coming to the course site at a time of their choice demands motivation from the online student and the data collected in this case study show students at AVS may lack motivation and initiative, and rely on the online teacher to help keep them engaged. For example, students at AVS have the option to watch the recorded videos of the classes they miss. So in a sense they have an asynchronous option. However, Violet, a school administrator at AVS, reported that "our experience is that a lot of the students do not watch those recorded lessons."

I argue the drawbacks to an asynchronous model make it less adequate as the primary delivery model for Aboriginal high school students. For example, with an asynchronous model, it is a challenge for the online teacher to keep track of students' progress, build strong, personal relationships, and provide positive reinforcement and encouragement to students in real time. I support Malik's (2010) recommendation that a flexible blend of synchronous and asynchronous

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components maximize learning outcomes and demonstrate that online learning offers the best of all the worlds of education (p. 181).

Flexible study. The research participants identified flexible study (not bound by time) as an essential component for success at an online Aboriginal high school. Flexible study is not the same as asynchronous study. While asynchronous delivery allows a student to access course materials at any time and does not require "real-time" or "live" participation, it does not necessarily allow flexible start and end dates. For example, offering an asynchronous course within a traditional semester system maintains a time requirement, and start and end dates are not flexible.

It is rather ironic that flexible study and synchronous delivery were both identified as essential to success by AVS study participants. I argue that mandatory synchronous classes that require students to be online at specific times during the week will impede flexible study. However, optional synchronous classes, or synchronous classes that are scheduled based on the needs of the student would promote flexible study.

Challenges of flexible study. Flexible study is unattainable in a semester system. Within a semester system courses are offered in a rotational, not repetitious, manner. If students fail to complete a course in the semester it is offered, they may find themselves lagging behind their peers due to the fact they have to wait a year or at least wait for summer to catch up. This is a limitation of the semester system. Continuous enrolment would ameliorate opportunities for flexible study. With continuous enrolment, students would be able to register for a course at any point in time. The challenge with continuous enrolment is that it does not work with a mandatory, pre-scheduled synchronous delivery model because students are at different points in terms of their progress in the course. Additionally, flexible study is not feasible in light of the

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actuality that graduation normally occurs at the end of grade 12. If schools endorse flexible study, students may not meet this time-bounded graduation requirement. Further implications also emerge; for example, late entry into post-secondary programs may occur when students are starting their families causing them to have to balance and/or integrate multiple aspects of life: education, family commitments, and work.

Benefits of flexible study. Case study participants said students should be afforded the option to take more time if needed to complete a course. Teachers who participated in the study stated that cultural activities can conflict with school attendance, and as the case study participants expressed the need for flexible study, i.e. flexible start and end dates, I argue this would increase student success. According to Aboriginal Affairs and Northern Development Canada (2013), there is a need for First Nations and First Nations education authorities to set up school calendars to meet local community needs (p. 5). This may require changes in the number of days required for instruction. Flexible start and end dates would allow students to study at their own pace, fill learning gaps as soon as they are identified, and allow students to participate in cultural and community events without the additional time pressure to complete a course.

It is important that Indigenous virtual high schools provide as many opportunities as possible for students to complete their high school program. According to Richards (2014a), "to reduce Aboriginal poverty, a higher employment rate is crucial. And to realize a higher employment rate requires, at a minimum, near-universal high-school completion" (p. 7). Therefore, I argue that Indigenous virtual schools must adopt and utilize all components that cultivate educational environments which are beneficial to students and this includes providing opportunities for flexible study. Table 5 provides a summary of the delivery methods, requirements, benefits and challenges as discussed in this section.

Table 5: Summary of Delivery Methods, Requirements, Benefits and Challenges Within the Context of AVS

Delivery/ Approach	Requirements	Benefits	Challenges	In the context of AVS	Recommendations
Synchronous	Real time participation	Immediate feedback from teacher Opportunities to build strong student-teacher relationships Real time communication exchange between student to student and student to teacher	Time Absenteeism	Synchronous classes are pre-scheduled, weekly, and participation is required not optional Required real time participation conflicts with cultural activities	Consider making synchronous components optional and or offered when students need
Asynchronous	Participation at convenience of student	Removes barrier of real-time participation	Delayed feedback from teacher No real time student to student interaction	Currently, not an option for students at AVS	Consider moving from synchronous to a blend of both synchronous and asynchronous
Semester-based study	Courses have pre-determined start and end dates Semester course lists are pre-determined	Aligns with most provincial school systems	Time Absenteeism Demands students keep up with high school program schedule	All courses are offered based on the semester schedule	Consider moving away from semester system Consider adding flexible start and end dates via continuous enrolment option
Flexible study	Participation at convenience of student	Flexible start and end dates Removes time barriers of semester system	Prolongs or shortens period of study, could affect graduation dates Students are not required to keep up with high school program schedule	Currently, not an option for students Cannot work with pre-scheduled synchronous classes	Consider moving away from semester system Consider adding flexible start and end dates via continuous enrolment option

Success and current practice. Moore and Kearsley (2015) state that a distance education system should consist of component parts that work together in an egalitarian relationship. These include learning, teaching, program/course design, management, policy, and organization. The results from the data presented in Chapter Four show that the participants in this case study focused much of their attention on three of these components: learning, teaching, and program/course design. These components surfaced repeatedly in the data and manifested in several emergent themes. What stood out for me in the context of these components was the tendency for the research participants to expect success in spite of the limitations of current practice. For example, courses at AVS are offered via a synchronous delivery model. Participants stated that a synchronous delivery model was essential to success, yet they acknowledged the challenges associated with it, such as absenteeism. In addition, participants stated that appropriate technology infrastructure was lacking, yet they use multi-media rich course materials that require considerable bandwidth. This indicates there is a disconnection between what is deemed effective instruction versus what instruction is most suitable given the technological constraints. While the use of media-rich course materials is current practice, this will not increase success if students cannot access the materials. This gives way to the need to burrow beneath the words of the research participants to get a more complete understanding of the underlying issues that impede student success at AVS.

Funding for AVS. According to Picciano, Seaman, and Day (2015), online virtual schools provide courses for credit recovery, elective courses, remedial courses, college credit, and advanced placement. AVS provides elective and core courses, credit recovery opportunities, as well as full credit programs. AVS co-exists with local community schools and could be perceived as a competitor to these schools. Hence, community support and buy-in is essential to

the success of AVS. Lack of this support could have serious implications for funding. Also, if the virtual school is viewed as competing with local community schools, this could also have considerable funding repercussions as schools compete for federal monies allocated to band councils.

Federal funding is provided to band councils and the local bands allocate funding to the band-operated schools and the virtual schools at the discretion of the band council (The Report of the National Panel on First Nation Elementary and Secondary Education for Students On Reserve, 2011). Funding for schools like AVS that rely on financial support of band councils operate in a nebulous manner as "the direction and priorities of a First Nation government can change dramatically with the election of a new group of leaders" (p. 36). Violet, one of the administrators at AVS stated that there is no guaranteed funding and school planning suffers as a result.

> We do not have sustainable funding. And so it seems to me that even though AVS
> is starting its sixth year, we are always in a state of uncertainty. We have
> experienced uncertain funding ever since EPP funding subsided. We had EPP
> funding for the first three years of the virtual school and then after that it has been
> a struggle year after year. It is really hard to build a school's reputation, to hire
> good staff, to train good staff, to promote the school when we are uncertain from
> semester to semester if we are going to be employed or not. At first I said funding
> but now I have added the adjective of "proper" funding. I feel we could be doing
> a lot more if AVS was properly funded. (Violet)

According to a press release in 2014, it was announced that the federal government funding for AVS after five years of operation and a 3.8 million dollar investment was being discontinued.

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"One more year of funding was expected through the federal government's Education

Partnership Program (EPP), with hopes for continued funding beyond this time period" (Beaton,

2014). Beaton reported that "this decision came during a period of continued growth and success

for AVS". The funding cuts place AVS at risk for closure. Similarly, Credenda Virtual

Collegiate (in Alberta), a sister school of AVS, was closed due to lack of funding.

Such cutbacks will render it problematic to expand and scale Indigenous virtual schools

across Canada. Furthermore, these monetary reductions do not help address the basic necessities

of the local communities. Research shows that low high school completion rates affect labour

market participation and according to Beaton, this is an issue that AVS was created to help

resolve. In an effort to withstand the previous federal government's funding slashes,

administrators of AVS collaborated with over 22 First Nations partners, including communities

and schools, to attain economic support. According to Friesen and Krauth (2012), local

community support is important for success because "communities hold essential knowledge

about local conditions that affect learning and about community priorities for Aboriginal

learners" (p. 37). In addition, Bruce and Marlin (2013) argue that lack of community support is

perceived by Aboriginal Peoples as a barrier to successful education (p. 49) and an example of

this is when change in priorities of various reserves lead to educational funding cuts.

Technology required for successful virtual school. The case study participants noted

that adequate bandwidth is a requirement for successful delivery of courses that contain a lot of

videos. The use of more videos as a way to enhance learning is consistent with Gibson's (2012)

study findings on issues and challenges in preparing teachers to teach in the 21st century. Gibson

stated:

The interview participants saw technology as a way to enhance children's interest in their learning, to make learning more relevant and meaningful, to engage students in discovery learning and exploration, to increase interaction in and outside the classroom between the teacher, the students, and the home, and to incorporate multiple perspectives on issues through easy access to a wealth of information. (2012, pp. 186-187)

According to Boboc (2015), with the use of more multi-media platforms to support learning, there is an associated reduction in text-based instructional resources being used in the classroom, and this leads to enhanced engagement and interactivity (p. 25). The need for technical support and appropriate technology infrastructure is becoming increasingly important as more multi-media materials are being added to online course content.

Based on data collected and reported in Chapter Four, it is accurate to state that adequate technology infrastructure is not commonplace in all First Nations local community schools, which hinders student success. Manitoba and Saskatchewan have the highest numbers of participation in band-operated schools yet these provinces lag behind in the number of band-operated schools with high speed Internet and video conferencing units. Table 6 shows the number of full-time equivalent students by type of school (2012-2013). Table 7 shows the percentage of First Nations schools in each province and region with high speed connection and video conferencing units as of December 2007 as part of the First Nations SchoolNet (FNS) program.

First Nations SchoolNet (FNS) remains an integral part of First Nations education on-reserve. The program has enhanced the educational experience of First Nations students, provided them with valuable skills and capabilities which have increased

their competencies, improved their outlook on learning as well as their confidence in their futures. The program has also provided students with the option of staying in their communities with their families as they complete their education through distance learning which has positively affected retention and graduation rates while providing access to opportunities similar to students from provincial schools. This is in line with the Government of Canada's commitment to increasing educational outcomes for First Nations students as well as INAC's commitment to improving overall education programming. (Indigenous and Northern Affairs Canada, 2009, p. 28).

Table 6: First Nation Elementary and Secondary Education:
Number of Full-Time Equivalent Students by Type of School (2012-2013)

Source: Indigenous and Northern Affairs Canada. Retrieved from https://www.aadnc-aandc.gc.ca/eng/1100100011857/1100100011862

	BC	AB	SK	MB	ON	QC*	Atlantic*	National Total
Band-operated schools	4,898	9,969	16,458	15,615	11,991	5,933	3,934	68,798
Provincial schools	7,830	6,787	3,366	5,438	6,096	9,118	2,187	40,821
Private schools	703	214	2	208	521	304	23	1,974
Federal schools	-	97	-	-	1,362	-	-	1,459
Total of Full-Time Equivalent (FTE) students	**13,430**	**17,067**	**19,826**	**21,261**	**19,970**	**15,355**	**6,144**	**113,053**

*NOTE: Figures may not add up due to rounding.

*Totals for Quebec and Atlantic include estimates of the number of students supported under the the James Bay and Northern Quebec Agreement and Northeastern Quebec Agreement, and the Mi'kmaw Kina'matnewey Education Agreement.

Table 7: Percentage of First Nations Schools in Each Province and Region with High Speed Connection and Video Conferencing Units as of December 2007

Source: Indigenous and Northern Affairs Canada. Retrieved from https://www.aadnc-aandc.gc.ca/eng/1100100011857/1100100011862

RMO/Province	Number Schools/Learning Centers	Percent High Speed Connection		% with Video Conferencing Units
		> 10 Mbps 2002	1.5 - 10 Mbps 2007	
British Columbia	145	6.2%	11.0%	12%
AB/SK	197	6.6%	53.3%	47%
Alberta	76	14.5%	69.7%	46%
Saskatchewan	121	1.7%	43.0%	47%
Manitoba	84	0	32.1%	18%
Ontario	183	3.8%	44.3%	35%
Quebec	47	25.5%	70.2%	62%
Atlantic	36	2.8%	77.8%	75%
New Brunswick	11	0	90.9%	91%
Prince Edward	3	0	66.7%	33%

Island				
Nova Scotia	21	4.8%	71.4%	71%
Newfoundland	1		100%	100%
TOTAL	**692**	**6.1%**	**41.9%**	**35%**

The other 52% of FNS connected schools and learning centres have access slower than 1.5 Mbps which is unable to support ICT, e-learning or video-conferencing.

In summary, students at AVS will continue to face barriers of access to online course materials if they reside in First Nations communities that do not have high speed Internet connections. First Nations local community schools cannot deliver quality programs that can compete with provincial schools when basic technology needs still exist. With the recent announcement of new funding for Aboriginal education by Prime Minister Justin Trudeau on March 22, 2016, it is hopeful that these issues will be addressed in the upcoming years.

Research Question Two

What role does Indigenous culture play in shaping a successful Indigenous online high school? Role of culture refers to the purpose and function of culture, i.e. the driving force, the glue, or the foundation of success. As stated in Chapter One, culture is defined as shared knowledge, beliefs, traditions, customs, arts, morals, languages, and practices of a group. The research participants advocated that culture, in its affirmative role, can help motivate students by making the learning relevant and by instilling learner self-confidence (Friesen & Krauth, 2012).

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The results of this study reveal participants' perceptions about the effects of cultural inclusion. These perceptions support the view point that the inclusion of Aboriginal languages, history, and cultures in an Indigenous online high school program has positive effects on curriculum, students, and the school community. The relevance of curriculum to students' learning allows them to feel validated, welcomed, and respected, and the school community provides a foundation for showing cultural appreciation. Based on the perceptions of the participants, these positive effects will be instrumental in helping students achieve Western standards, i.e. earning credits, attaining high marks, and graduation.

According to Friesen and Krauth (2012), programs that reflect and support strong, positive Aboriginal identities for both individuals and communities are essential to both academic success and success as defined by a wider set of holistic outcomes (p. 24). The infusion of culture in the online school has been shown to have positive benefits for students (Oskineegish, 2014 p. 513). When asked what role Aboriginal culture plays in shaping success, the participants identified ample distinctive functions. For example, the role of culture is to validate; connect; respect; welcome; build community; build confidence; inform curriculum; move people forward; establish a foundation; show appreciation; and drive success. Perceptions of the study's participants support that students benefit when Indigenous culture is integrated into the program design and delivery. The participants perceive Aboriginal culture as a key element of building a sense of community, increasing self-confidence, validating, connecting, and moving students forward – and each of these aspects is important. The participants articulated that the inclusion of Indigenous culture: 1) facilitates academic engagement and content engagement, and therefore, presages success; 2) elicits a safe learning environment and ensues success; and 3) educes a sense of community and belonging which precedes success.

While it is clear that the participant's perceptions support that the inclusion of Aboriginal languages, history, and culture has positive benefits, there are numerous challenges that still need to be addressed. Some of these can be addressed through appropriate funding, for example, funding for curriculum development or funding for hiring more teachers. However, the results of this case study reveal that Indigenous speakers are few and far between, and this makes it difficult to find teachers who speak the language or who are Indigenous knowledge experts. Figure 7 shows the role of Indigenous culture in shaping success at an online Aboriginal high school based on perceptions of the study's participants.

Can a virtual school develop cultural community? According to Friesen and Krauth (2012), "strengthening Aboriginal identity and culture within the school context was articulated almost universally as a top priority of national and regional Aboriginal organizations' (NAO/RAO) informants" (p. 21). Friesen and Krauth (2012) state:

> Specific programs and practices advocated by many Aboriginal communities and organizations include the teaching of traditional languages, the inclusion of Aboriginal history and culture in the curriculum, experiential learning, bringing Elders into the classroom, and a host of other locally defined practices. (p.21)

Friesen and Krauth (2012) state that language and culture instruction is also expected to produce significant indirect benefits, including increased self-confidence, school attachment, academic achievement, and reducing racism of non-Aboriginal students (p. 21). Consistent with this, the research participants affirmed that the integration of Aboriginal languages, history, and cultures in program design and delivery will help students build greater self-confidence, make learning more relevant, and help develop a strong sense of school community. All of these benefits were perceived to have a positive effect on student success.

Figure 7: The Role of Indigenous Culture in Shaping Success at an Online Aboriginal High School Based on Perceptions of the Case Study Participants
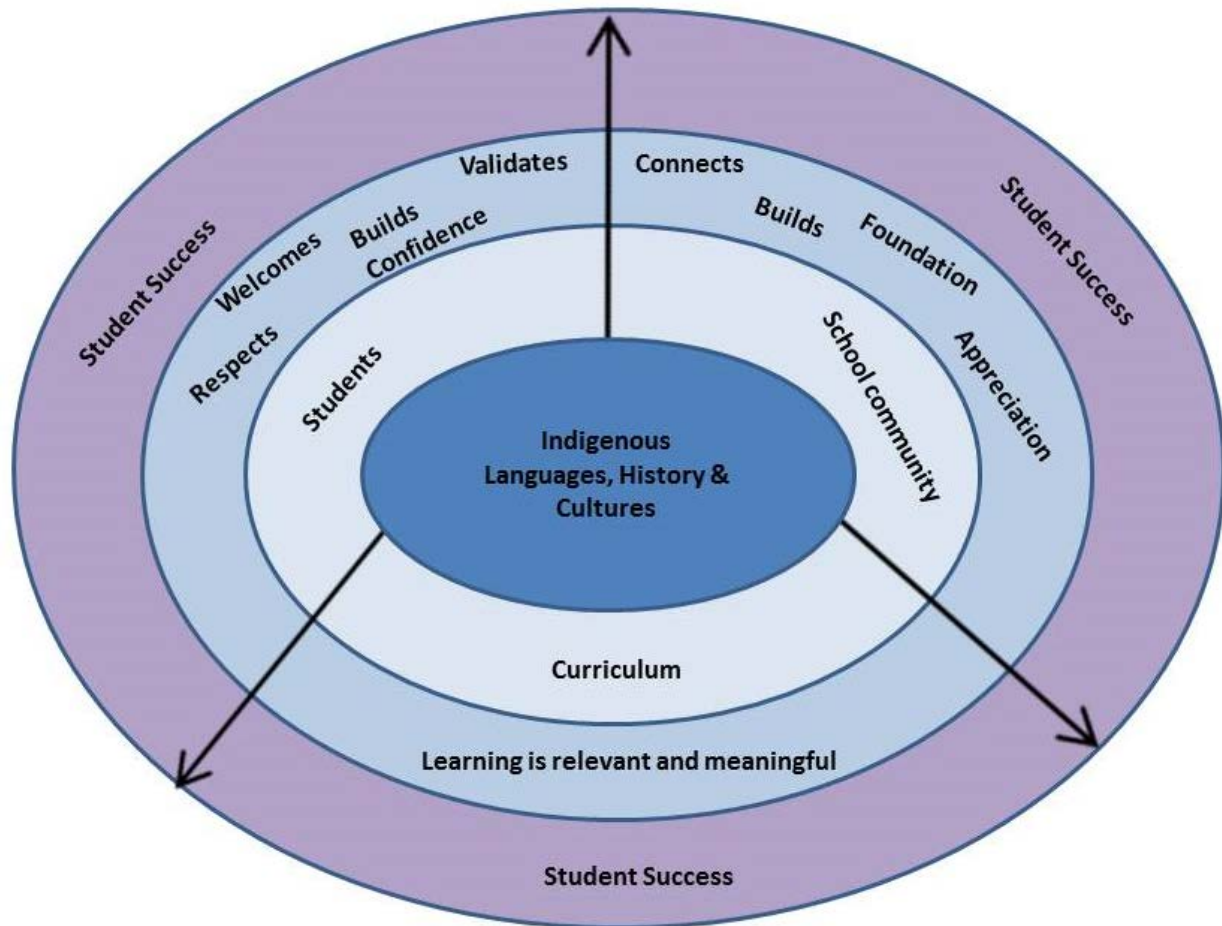
Furthermore, "responding to the aspirations and needs of Aboriginal learners means valuing their collective intellectual traditions and identities as Aboriginal Peoples" (St. Denis, Silver, & Ireland, 2008, p. 4). Nash (2015) argues that a culturally inclusive curriculum is not enough as it reflects the "foundational point-of-view of one culture, typically that of the mainstream or dominant culture" (p. 347). Nash states:

> Teachers need to consider adding social justice, citizenship, and respect for others
>
> into their content, to continue community building and help students overcome

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the generalizations and prejudices they may hold. Teachers who are able to build

on student diversity and use it as an asset for the class will find that these students

feel empowered and more confident in their work and more likely to take risks.

(p. 354)

I argue that the data results in this case study reveal that online Indigenous high schools can

foster the development of a community of culture. It is reasonable to state that individual

cultural identities of Aboriginal learners are reinforced by the cultural identity of Aboriginal

schools or programs because "individuals absorb 'nutrients' from interactions with the social

environment, which provide support of autonomy, competence, and relatedness" (MacTeer,

2011, p. 129). The inclusion of Indigenous languages, history and cultures in curriculum,

validating cultural heritage, encouraging students to speak their ancestral languages, allowing

students flexible study so they can participate in community and cultural activities are all

examples of practices that can lead to the development of online Indigenous school communities

rich in cultural development.

Having said this, it is important to identify challenges associated with integrating

Aboriginal culture into the program design and delivery of an online Aboriginal high school.

The leading question concerns the development of curriculum rich in Aboriginal languages,

history, and cultures – namely, who will do it? There are very few qualified teachers who are

experts in Indigenous education (St. Denis, 2010). Another challenge stems from the diversity of

the Indigenous groups within Canada. There are over 600 First Nations communities across

Canada and each community has its own culture. Despite some similarities – for example, the

relationship with the environment, the spiritual and sacred, and Indigenous epistemologies –

differences abound with respect to languages and traditions. Given that there are over 60

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different First Nations languages, there is a need for Indigenous experts in many different languages, many different traditions, and many different cultures (Simon et al., 2014). This gives rise to apprehension related to funding. Hiring Indigenous content experts to design and develop curriculum and educational resources to support the delivery of these programs would require significant budgetary commitments. However, "strategies to validate the Aboriginal community within the school system – in design of curriculum to reflect Aboriginal culture, in hiring of teachers, and engaging local Aboriginal parents and community leaders – can yield positive results" (Richards & Scott, 2009, p. 66).

      Cultural evolution. As stated in Chapter One, success is "seen through the lens of protecting and reclaiming language, culture, and tradition while focusing on long-term goals such as graduation and transitions to work and post-secondary institutions" (Tunison, 2007, p. 13). Robertson (2014) argues that "As culture is the collective expression of the people who constitute it, cultural evolution is tied to self-change." Therefore, protecting and reclaiming language, culture, and tradition might be a tenuous activity when we consider cultural evolution. Who decides what language, culture, or traditions help the student develop "Aboriginal self"? Robertson argues that both childhood and adult experiences contribute to development of "self" but interpretations of these events are highly individualized. Do high school students have a complete understanding of "self" or what cultural elements need reclamation? The answer to this question is beyond the scope of this research. However, Greenfield (2015) states, "Cultural evolution can occur on many scales of time and is intimately linked with changing patterns of human development" (p.4). Portin (2015) explains that cultural evolution can be compared to Darwin's theory of evolution with the meme being the gene. "The meme is defined as a cultural and communicational replicator" (p. 160).

Portin defines cultural evolution as changes in behavior of individuals and is partly based on conscious action. Furthermore, Portin states:

Changes in behaviour occur through learning and imitation. Therefore, behavioural selection is a better proposal for the mechanism of selection in cultural evolution than meme selection, which, of the forms of learning, in actual fact takes only imitation into account, and considers individuals only as passive living media of the memes. Behavioural selection, in contrast, includes all forms of learning, and considers individuals to be active cultural actors. Further, in the model of behavioural selection, the hypothesis of language as the unit of cultural evolution can be included. (pp. 161-162)

Students are active cultural actors who do not solely imitate what they learn from others but also select their behaviour, providing a culturally inclusive curriculum will allow variance and an opportunity to select from heterogeneous material. Portin (2015) states that "Variation is a necessary condition for all selection-based evolution because nothing can be selected from homogeneous material" (p.160). It is important that schools mandated to deliver education to Indigenous students balance Western standards/Western curriculum with Aboriginal ways of knowing and Aboriginal culture so students are able to see and understand these different contexts. Gordon, Hodson, and Kitchen (2014) argue that:

An important goal of Aboriginal education is to ensure that learners are able to see and understand different contexts and compare them to their own. One way to accomplish this is through a teaching strategy called iconography. Iconography uses symbols and images as means for learners to consider their personal experiences during the learning process (Sarafini, 2011). Moreover, iconography

provides an opportunity to infuse Indigenous content (e.g., a general theme or

visual images) into the learning process and to tie together both Aboriginal and

non-Aboriginal content. This approach helps learners to see themselves and their

culture in relation to course materials and enables them to connect spiritually.

Learners can maintain a true sense of self during lessons involving non-

Aboriginal content. (p. 4)

Gordon et al. (2014) suggest that learners have an understanding of "their culture" and so

can maintain a true sense of "self." This case study does not examine whether or not

students in an online Aboriginal high school have an understanding of "their culture."

However, the data collected in this case study, supported by literature, reveal that

reconnection to and reclaiming of Aboriginal culture is essential to student success in

Indigenous online high schools (Oskineegish, 2014; Wang, 2012; Paul, 2011; Report of

the Senate Committee on Aboriginal Peoples, 2011; Philpott, Sharpe, & Neville, 2009;

Tunison, 2007).

Chapter Five Summary

This study's two research questions were discussed in this chapter and essential

components to the success of an online Aboriginal high school outlined. Issues affecting

governance, funding, and technology infrastructure for band-operated schools were examined.

The domains of effective online instruction were identified and the pros and cons of synchronous

delivery and flexible study were presented. Answers to the five emergent questions were

discussed and revealed that numerous issues need to be addressed to ensure the success of an

online Aboriginal high school, including: recruitment and retention of effective teachers;

providing specialized training for teachers; increasing the number of Indigenous knowledge experts; removing time barriers that accompany program delivery; development of culturally inclusive curriculum; improving technology infrastructure of band-operated schools; further investigation into establishing a standardized First Nations education authority; and accountability of students, teachers, school councils, and the federal government. I address these issues in Chapter Six covered under three topics: providing specialized training for teachers, increasing the number of Indigenous knowledge experts, and removing time barriers that accompany program delivery.

Chapter 6: Recommendations for a Successful Indigenous Online High School, Conclusion, and Reflections

Introduction

Chapter Five provided a discussion about the essential components of success and the role culture plays in shaping success at an online Aboriginal high school. Based on the perceptions of the research participants, support, flexibility, and culture inclusion are the three essential components of success. This chapter provides some recommendations that are useful to ensure these three critical components are adequately provided.

Recommendations

The recommendations for a successful online Indigenous high school result from this case study's two research questions:

1. What are the essential components of a successful Indigenous online high school?

2. What role does Indigenous culture play in shaping a successful Indigenous online high school?

The recommendations emerge from several key points that have been discussed thus far. Firstly, Indigenous high school students who study online require a wide range of supports and resources to adequately address online readiness, academic gaps, and deficient technical skills. Therefore, it is essential that online Indigenous high schools provide students with adequate academic and technical support. Secondly, a successful Indigenous online learning system relies heavily on the delivery model, program design, and organizational components. Therefore, it is important to determine when to use synchronous and asynchronous delivery approaches to increase

opportunities for flexible study. Thirdly, all components (learning, teaching, program/course design, management, policy, and organization) of a successful Indigenous online high school must include opportunities for cultural reconnection and development. Based on the results of this case study, Figure 8 shows a graphic representation of a successful Indigenous online high school.

Figure 8: Description of a Successful Indigenous Online High School
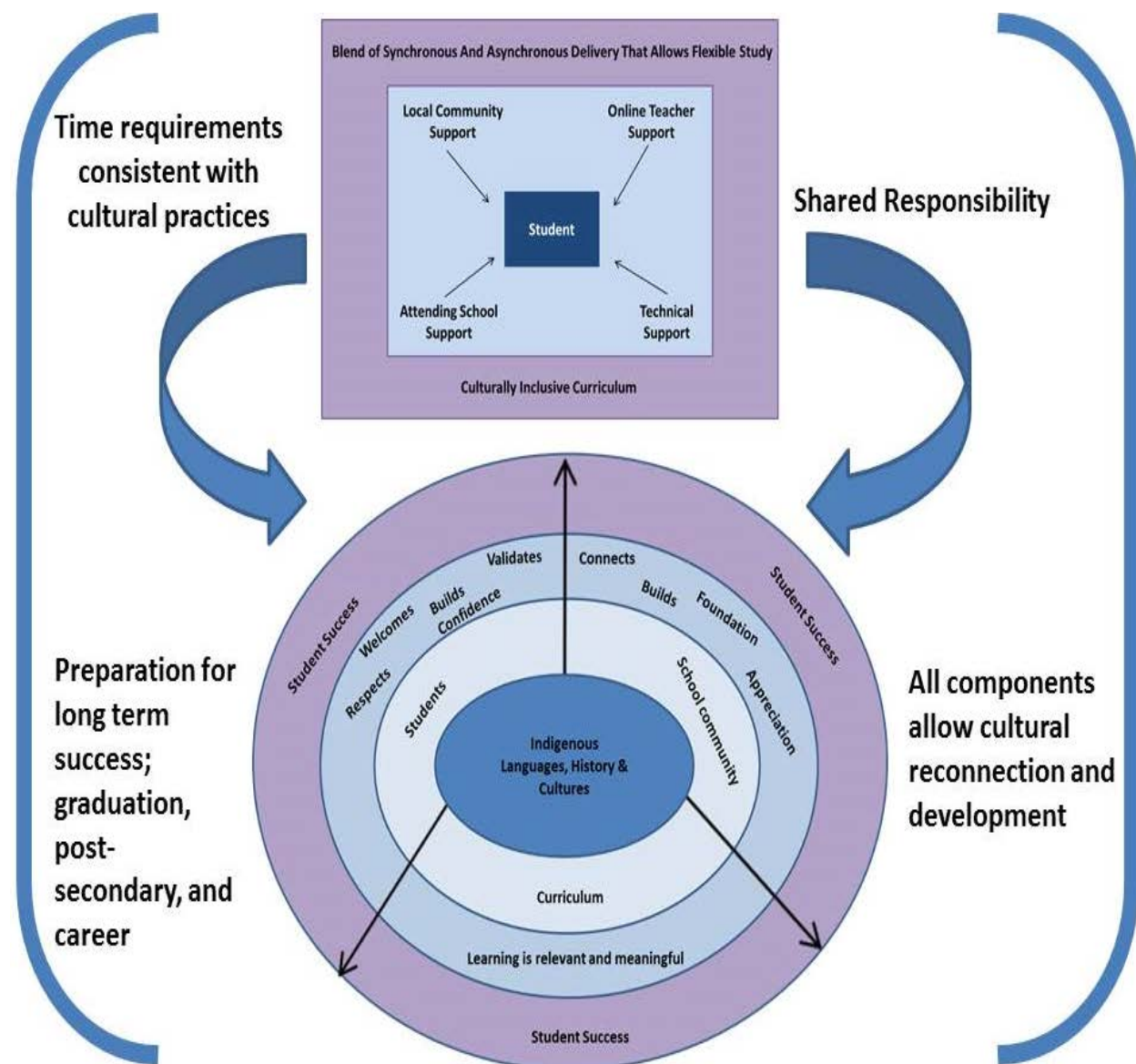
Chapter Five contained arguments to support the need for effective online high school instruction and highlighted that Indigenous virtual high school teachers must possess or develop specific skills in order to enhance student success. These skills include but are not limited to: (a) knowing how to use technology tools; (b) demonstrating pedagogy for technology-integrated instruction, and (c) having the self-efficacy for implementing pedagogy through integration of technology with instruction (Estes, 2015).   Furthermore, online teachers at Indigenous virtual schools need to possess knowledge of Indigenous pedagogy (Oskineegish, 2014, p. 519). In summary, the results of this case study reveal that a successful online Aboriginal high school requires online teachers who possess technical skills that are applied using sound pedagogical practices. The following recommendations offer plausible ways to ensure online teachers acquire these skills.

Appropriate teacher-training. Teacher education programs need to prime pre-service teachers to teach online, support students using technology, and to develop multi-media materials that engage students (Shambaugh, 2014, p. 124). Teachers can then use this training to develop learning repositories and Open Educational Resources (OER) for Indigenous learning objects, online lessons, or online resources that could be shared across schools. Shambaugh recommends that teacher education programs include technology integration but notes that this change requires a shift from the view of integration and adoption of technology to an emphasis on improving instructional strategies (p.124). This argument is echoed in the work of Farmer (2014), who stated that:

> Around the world, teacher preparation programs see the need for [pre-service]
> teachers to use information and communications technologies for personal use

and as a tool for learning (Kirschner & Davis, 2003). Globalization pushes the

need for cultural awareness and interaction. Educational accountability has also

increased, with teachers needing to employ evidence-based practice. For example,

teachers need to practice data literacy as they assess student learning, analyze

results, and develop effective interventions to improve the conditions for learning.

Unfortunately, assessors and researchers have found that beginning [pre-service]

teachers are not meeting standards that address these new demands. (pp. 58-59)

Furthermore, teachers in K-12 classrooms (both virtual and brick-and-mortar) face some of the

same challenges. According to Harrington and Rhine (2015), a "parallel argument can be made

that the technological landscape is changing the nature of teaching in K-12 schools" (p. 195).

As the number of laptop, tablet, and bring your own device programs gradually

make technological access truly ubiquitous in elementary and secondary

classrooms, the act of instruction is being transformed. From flipped classroom

strategies to computer simulations, educational gaming, and continual assessment

and data gathering, how K-12 students learn is being redefined. What are the

implications for teacher educators? Given the technology influenced

environmental conditions students and early career teachers are finding in their

schools, the perspective our research brings to the conversation is a redefinition of

the role of teacher educators. (Harrington & Rhine, 2015, pp. 195-196)

I argue that online teachers at Indigenous virtual schools cannot provide adequate support to

students nor can they provide learning experiences that are pedagogically rich and

technologically enhanced if they lack training and administrative support. Boboc (2015) states

that there are three primary factors that contribute to an effective virtual learning environment:

interaction with content, interaction with the online instructor, and interaction with peers. Moore (1989) suggests there must be a fine balance of these three factors:

> At the same time, K-12 institutions should be cognizant of the needs of online teachers. There is an increasing body of evidence that demonstrates that supporting these instructional practitioners in the online environment includes professional development, training, as well as technical and administrative assistance (McKnight, 2004). Consequently, online instructional design should blend effective pedagogical practices with a thorough understanding of the specifics of virtual learning environments and how students interact best in there. (p. 26)

I argue that teachers cannot be expected to develop and implement technical and pedagogical skills without an appropriate level and quality of administrative support. Essentially, it is not the teacher's sole responsibility to acquire these skills. Teacher education programs must address this issue, and in the same accord, practicing teachers need to have professional development opportunities specifically targeting development of online teaching proficiencies (Farmer, 2014; Harrington & Rhine, 2015).

Specialty credentialing. The literature shows that Canadian teachers' unions and ministries of education across Canada have started to integrate and embed Aboriginal content and knowledge into curriculum (Wang, 2012, p. 54). However, there is a desperate need for teacher education programs that are specifically geared towards certification of teachers in Indigenous languages, history, and cultures (Gordon, Hodson, & Kitchen, 2014, p. 2). Gordon et al. argue that one way to address the low achievement rates of young Aboriginal students "is to increase the number of qualified Aboriginal teachers in provincially and federally funded (on-

reserve) schools" (p. 2). Teacher education programs may want to consider specialty credentialing which is available in other specialized fields. For example, in British Columbia, teachers who are certified with the Royal Academy of Music can apply for specialty certification to teach music education in schools without having to go through a full five-year teacher education program. Similarly, in Manitoba, trades workers, for example electricians, can apply to the certification board for specialty certification so they can teach trades in K-12 schools without having to go through full teacher education programs. Specialty certification for Indigenous education would allow local community members an opportunity to become certified so they are able to teach in K-12 schools.

Furthermore, if teacher certification boards or qualifying boards recognize Indigenous knowledges experts, this is again another way to move Aboriginal Peoples forward. A report by the Canadian Millennium Scholarship Foundation (2004) noted four benefits to increasing the number of Aboriginal faculty and staff at post-secondary institutions. These four benefits can also be applied to secondary schools: (1) providing academic expertise in academic areas; (2) providing role models and mentors for students; (3) providing advisors for students; and (4) providing general equity. Preston and Claypool (2013) discuss the perceptions of 12 Aboriginal high school students enrolled in two urban Saskatchewan schools. The students shared their perceptions about key motivational supports for educational success. One of the three emergent themes from the Preston and Claypool study was the importance of Aboriginal role models. Specialty credentialing would increase the number of Aboriginal teachers and role models in schools. Furthermore, I argue that specialty credentialing would help achieve equity in First Nations schools (Gordon et al., 2014).

Combine asynchronous and synchronous methods. Malik (2010) studied the relationship between time, space, and interaction in an online learning environment and argues that there must be a balance of the three components for effective instruction to occur. Synchronous delivery affords learners three forms of interaction: student to student, student to teacher, and student to content. Malik argues that class size is a limitation of synchronous learning and this limitation of "space" can impose on opportunities for interaction, especially if synchronous class sizes are too large. Malik (2010) claims that:

> It is envisaged that adopters of synchronous interactions will need to resolve the conflict of convenience versus quality. Students who are used to the luxury of time flexibility may resist extra demand on their time and some of them may use it as an excuse, too. Resolving this conflict may require assessing the genuineness of student concern. In addition, a prior intimation must be given to students to let them plan their commitments. (p. 180)

Although synchronous delivery has many benefits, there are shortcomings in the Aboriginal high school that need to be addressed: issues with absenteeism, school scheduling, and "real time" commitment. One recommendation to help resolve these issues would be to incorporate both synchronous and asynchronous components. For example, virtual high schools could offer some synchronous lessons that are not necessarily scheduled weekly or daily but offered when they are needed or as optional. This responds to the issue of absenteeism and would allow for the option of continuous intake. The synchronous component has myriad benefits so shifting to a fully asynchronous model is not proposed. However, including asynchronous course components would allow students the flexibility to work on course assignments and review learning materials at their own time, when it is convenient, and when it fits in with cultural activities. I argue that

having a reasonable equilibrium of synchronous components and asynchronous components is most suitable to meet the needs of Indigenous students.

      Provide adequate monetary support. Funding is the most fundamental requisite of any educational institution and without securing guaranteed funding Indigenous virtual schools operate in a tenuous fashion. Teacher recruitment, teacher training, professional development, and a number of other essential resources are undoubtedly affected when schools face monetary restrictions that force the prioritization of components of the distance education system. This case study shows there are varied types of support needed to increase student success and these supports are unattainable without proper funding. For example, online teachers cannot provide adequate support to students if they cannot access professional development or training opportunities. Also, culturally inclusive curriculum design and development requires budgetary commitments. Furthermore, upgrading technology infrastructure in rural communities requires significant funding allocations.

      The reality is that there are young Canadians who do not have access to high school programs unless they leave their families and communities (Potter, 2010, p. 14). It is important not to minimalize this issue – it must be addressed by federal and provincial governments. One recommendation to help resolve this is to organize strategic economic planning for Indigenous virtual schools at federal, provincial, and local levels. This includes budgetary commitments to improving technology infrastructure of rural communities, access to Internet in homes, culturally inclusive curriculum, teacher training and professional development, as well as leadership and operational requirements of the virtual school.

Recommendations for Future Research

There are still many unanswered and lingering questions that need to be explored in order to provide evidence-based solutions to some of the intricacies that administrators, teachers, students, and parents face in this context. It is important to continue research in this field so schools like AVS continue to be funded and so that Aboriginal students can have access to quality high school programs while remaining in their local communities. Furthermore, K-12 distance education programs in Canada continue to increase. According to Barbour (2014), over 330, 000 students participated in K-12 distance education programs in the 2013/2014 school year and participation increased 1.2% since the previous year. As distance and online K-12 programs continue to increase, schools and educators will face technological, pedagogical, and economic challenges that require investigation.

Schools such as AVS allow Aboriginal students the opportunity to study in an environment that encourages their reconnection to their heritage whilst allowing them to remain in their home communities and maintaining connections to families. Students can be successful in a dualistic manner that includes completing their credits for graduation and experiencing efficacious reconnection to Indigenous languages, history, and culture.

What happens after students are successful at AVS? There are assorted pathways that students could select. They could secure employment in the labour market, or continue their studies in trades or community colleges, or attain entrance into post-secondary programs. Entrance into post-secondary institutions might not entail leaving their community. Success at AVS may elicit a sense of comfort for online learning such that students may be more inclined to select online programs at the post-secondary level. The positive effects of success at an online

Aboriginal high school could have noteworthy implications for post-secondary success. This is an area for future research.

As mentioned in previous sections, it is imperative that teachers receive appropriate training and support so they can provide students with pedagogically sound online lessons. This argument suggests another area for future research: to investigate how pre-service teachers across Canada are currently being trained to teach online in both asynchronous and synchronous delivery models. What kind of training do teachers receive to develop educational materials using multi-media tools? Are there pre-service programs that teach about technology and the application of Indigenous pedagogy?

In addition, more research is needed in order to deepen understanding and awareness about the issues associated with low high school completion of Aboriginal students. How does success in local community schools affect student performance and student success in virtual schools that supplement these local community education programs? This question suggests more research needs to be undertaken to determine what makes for a successful local community school. As stated earlier in the literature review, these schools are already disadvantaged because many of them do not provide full high school programs (Potter, 2010, p. 14).

Another important question must be asked: what is the best way to combine asynchronous and synchronous delivery components to increase student participation, access, and success? The results of this case study show that a synchronous delivery model conflicts with cultural practices. For example, students may need to participate in community events like fishing or traplining, which entails missing out on synchronous classes. A third important question requires further investigation: Will Aboriginal high school completion rates increase if the number of Aboriginal teachers increase in Canada? Longitudinal studies could determine

this. Finally, what are the effects of technology on Indigenous communities? Today, students are immersed in a digital culture where smart phones are ubiquitous.   In the ensuing two decades, will it be challenging to locate societies with "authentic" Indigenous experiences? The answers to these questions must be uncovered from future research.

Conclusion

The purpose of this case study has been twofold; firstly, to ascertain a description of a successful online Aboriginal high school, and secondly, to uncover the role Indigenous culture plays in shaping a successful school. The participants' perceptions, thoughts, and ideas provide the answers to the two research questions.   The challenges associated with the essential components were discussed. In addition, the results of this study show that Indigenous culture plays a multiplicity of roles in shaping success. Some of the impediments to integrating culture into the program design and delivery of an online Aboriginal high school were uncovered.

To set the stage for this case study, I provided a literature review that revealed there are education gaps that exist in Canada between Aboriginal and non-Aboriginal high school students. The literature showed that Aboriginal students who reside in rural communities may not have access to full high school programs. Virtual high schools allow these students the opportunity to remain in their communities while they study. There are challenges these learners face when they participate in virtual schooling. Firstly, if their communities do not possess the technology infrastructure for high speed Internet, access to course materials will be limited. Secondly, students require multiple supports to address academic readiness, online learning readiness, and deficient technical skills. Further to this, the constraints of time can decrease flexibility and hinder success.

Reflections

With nine years of experience working with First Nations Adult Education Centres in Northwestern British Columbia, I thought I had an understanding of distance education and how it worked in Indigenous communities. In hindsight, my knowledge was very limited to these northwestern communities that offer on-reserve support so adult learners can acquire high school credits to improve their lives. This research project has helped to mature my understanding of Indigenous online education.

Data collection. My research became alive and took full form during the data collection process when I had the opportunity to spend two full days at the research site. These two days were booked off for interviews starting from as early as eight in the morning and ending as late as five in the evening. This made for two extremely lengthy and fatiguing days.

Many moments stand out for me from the interviews and I would like to share two of these. The first one was the feeling of elation that I felt when one of the interview participants talked about her childhood experience of skinning a beaver. She was so happy when she shared her story with me. I could feel how proud she was to have had this experience. She said when she skinned her first beaver her father and her family were so wonderful and praised her for doing such a great job although, in her heart, she knew she had done a terrible job. From this incident, she learned that success isn't the end product but rather it is the process and the experience. This story reminded me of the first time I tried to de-bark a coconut. My Bahamian family laughed at me but at the same time my sisters and brothers promised I had done a good job.

A second poignant moment for me was when one of the interview participants related a story about a lesson his father taught him. In his culture, you never look a person in the eye

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because it is sign of distrust. He talked about how he struggled with this and how he had to re-train himself to fit into Western business and educational culture. This story reminded me that as an online teacher I must always remember to use teaching strategies appropriate for diverse cultures.

This research investigated the role of Indigenous culture in shaping a successful learning environment. Hence, these stories were very relevant and they were shared in the context of responding to questions about the role of culture. I had the opportunity to listen to many stories and through these stories, I was able to personally relate to the research participants. I could hear them breathing, see their facial expressions, hear the different intonations in their voices, see their smiles, and hear their laughter. As theoretical concepts transformed into real people, I worked to attend to my human tendencies of judgement, bias, and subjectivity, setting them aside as best I could in my role of researcher.

Data analysis. As I coded the data, I could still hear the voice of each participant. I needed to ensure their voices were louder than mine. To do this I had to burrow and really figure out what was "underneath" their words. This research allowed me the opportunity to have a real world experience and to connect the "voices" of the research participants with theoretical concepts. The most prevalent difficulty was identifying the emergent themes and my initial tendency was to identify topics. With much deliberation, contemplation, frustration, and reflection, I was able to uncover "meaning" that emerged from the participants' voices.

Research findings. The qualitative data collected in this case study allowed me a richer and more thorough understanding of the social interactions and personal experiences of the study participants. Furthermore, combining quantitative and qualitative methods helped to achieve the goal of the research which was to uncover the answers to the two research questions.

This research showed that effective online instruction, learner characteristics, time requirements, and a culturally inclusive curriculum intertwine to create opportunities for student success. Success occurs when the needs of all stakeholders are addressed: students, teachers, parents, administrators, and local communities. The research findings support the call to address the prevalent issues that perpetuate challenges that hinder success at Indigenous virtual high schools.

Revealing the core. This research process has allowed me to learn more about case study research, the role of a qualitative researcher, the complexity of success within the context of an Indigenous virtual high school, and more about my perceptions about successful online learning. However, the most important learning that resulted from this project is a deeper understanding of the role of culture in educational systems.

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Appendix A: Letter of Initial Contact

A Description of a Successful Indigenous Online High School:
Perspectives of Teachers, Staff, Students, and Parents

Initial Contact Letter

Principal Researcher: Sophia Palahicky [sophiapalahicky@yahoo.com]
Supervisor: Dr. Dianne Conrad [diannec@athabascau.ca]

Date: May 5, 2015

Dear Mr. Burston,

I am conducting a case study research project to describe a successful Indigenous online high school. The research is in partial fulfillment of the requirements for the degree Doctor of Education (EdD). The questions guiding this study are:

1. What are the essential components of a successful Indigenous online high school?
2. What role does Indigenous culture play in shaping a successful Indigenous online high school?

I would like to invite teachers, staff, students, and parents of Awa Virtual School (AVS) to participate in this research project. Participation is voluntary and requires free and informed consent of the participants. The risks of this study are minimal.

Information regarding research methods is included below along with the interview and survey questions. **Please let me know if I can contact the teachers, staff, students, and parents of Awa Virtual School (AVS) to invite them to participate in this study**. I am able to get email addresses of teachers and staff from the school's website. I do not require students' email addresses. Contact information of only two parents will be required.

Individual Interviews
I will conduct at least 15 interviews for this case study. Participants will include teachers, staff, administrators, and two parents. The individual interviews will take about 30-60 minutes to complete. Please see the questions contained in Attachment A.

Online survey
I will invite all teachers, staff, students, and parents to complete an online survey. The survey is completely anonymous. A link to the survey along with the letter of informed consent can be sent out on my behalf by the school. The survey will take 5-10 minutes to complete. Please see the questions contained in Attachment B.

Sophia Palahicky

Attachment A
Interview Questions
Section 1 – General Information
1. Can you share with me a bit of information about your role and what you do at Awa Virtual School (AVS)?

Section 2 - Essential components of a successful online Aboriginal high school
1. Can you share your thoughts about what students need in order to be successful at an online Aboriginal high school?
2. Can you share your thoughts on what success means or how you would describe success for students at an online Aboriginal high school?
3. Can you share with me what you think are the critical factors for an online Aboriginal high school to be successful?
4. Reconnecting Aboriginal learners to their languages, history, and cultures is critical to the success of an online Aboriginal high school. Do you Agree, Disagree, or are you Neutral to this statement?

Section 3 - Role of culture in shaping a successful school
1. Can you share your thoughts on the role Aboriginal culture plays in shaping a successful online Aboriginal high school?
2. Can you share a bit about how you see culture shaping the success of an online Aboriginal high school?
3. Aboriginal culture is the driving force for success in an online Aboriginal high school. Do you Agree, Disagree, or are you Neutral to this statement?

Attachment B
Survey Questions

Section 1 – General Information
Question 1
Please choose one of the following:
    A. I am a teacher at Awa Virtual School (AVS).
    B. I am a staff member at Awa Virtual School (AVS).
    C. I am an administrator at Awa Virtual School (AVS).
    D. I am a student at Awa Virtual School (AVS).
    E. I am a parent/guardian of a student at Awa Virtual School (AVS).

Question 2
Please choose one of the following:
    A. I self-identify as First Nation.
    B. I self-identify as Métis.
    C. I self-identify as Inuit.
    D. I do not wish to self-identify.
    E. Not applicable.

Section 2- Essential components of a successful online Aboriginal high school
Question 1
Please read the statement below then choose one of the following: Strongly Agree, Agree, Disagree, Strongly Disagree, or Neutral.
Reconnecting Aboriginal learners to their languages, history, and cultures is critical to the success of an online Aboriginal high school.
    A. Strongly Agree
    B. Agree
    C. Strongly Disagree
    D. Disagree
    E. Neutral

Question 2
Having access to Internet and a computer is critical to the success of an online Aboriginal high school.
    A. Strongly Agree
    B. Agree
    C. Strongly Disagree
    D. Disagree
    E. Neutral

Question 3
Teaching students how to use a computer and how to navigate the web is critical to the success of an online Aboriginal high school.
    A. Strongly Agree
    B. Agree

    C. Strongly Disagree
    D. Disagree
    E. Neutral

Question 4
Synchronous classes use web conferencing technology like Skype, Elluminate, Blackboard
Collaborate, or Adobe Connect in order to allow students to interact in "real time" (i.e. at the
same time, regardless of location). Having synchronous classes where students can interact with
their classmates and teachers in real time is critical to the success of an online Aboriginal high
school.
    A. Strongly Agree
    B. Agree
    C. Strongly Disagree
    D. Disagree
    E. Neutral

Question 5
Including Aboriginal languages in the curriculum is critical to the success of an online
Aboriginal high school.
    A. Strongly Agree
    B. Agree
    C. Strongly Disagree
    D. Disagree
    E. Neutral

Question 6
Including Aboriginal culture and history in the curriculum is critical to the success of an online
Aboriginal high school.
    A. Strongly Agree
    B. Agree
    C. Strongly Disagree
    D. Disagree
    E. Neutral

Question 7
Having teachers who know about Aboriginal cultures and languages is critical to the success of
an online Aboriginal high school.
    A. Strongly Agree
    B. Agree
    C. Strongly Disagree
    D. Disagree
    E. Neutral

Question 8
Flexible start and end dates (of course registration) are critical to the success of an online
Aboriginal high school.

    A. Strongly Agree
    B. Agree
    C. Strongly Disagree
    D. Disagree
    E. Neutral

Section 3 – Role of culture in shaping a successful model
Question 1
Please read the statement below then choose one of the following: Strongly Agree, Agree, Disagree, Strongly Disagree, or Neutral.
Aboriginal culture is the driving force for success in an online Aboriginal high school.
    A. Strongly Agree
    B. Agree
    C. Strongly Disagree
    D. Disagree
    E. Neutral

Question 2
Aboriginal learners can be successful in an online Aboriginal high school without reconnecting to Aboriginal cultures and languages.
    A. Strongly Agree
    B. Agree
    C. Strongly Disagree
    D. Disagree
    E. Neutral

Appendix B: Letter of Informed Consent (Interviews)

A Description of a Successful Indigenous Online High School:
Perspectives of Teachers, Staff, Students, and Parents

PARTICIPANT CONSENT FORM – Interviews

Principal Researcher: Sophia Palahicky [sophiapalahicky@yahoo.com]
Supervisor: Dr. Dianne Conrad [diannec@athabascau.ca]

I would like to invite you to participate in a research study involving Awa Virtual School (AVS). By replying to this e-mail request for participation, you are indicating that you have read and understand the information below and that you freely give your informed consent to participate in this study. Please keep a copy of this letter for your records**.**

The purpose of the study is to describe a successful Indigenous online high school. The questions guiding this study are:
1. What are the essential components of a successful Indigenous online high school?
2. What role does Indigenous culture play in shaping a successful Indigenous online high school?

Your participation and how information will be collected
I will ask you to participate in an interview that will take approximately 30-60 minutes to complete. The interview will be conducted by me. The interview will be recorded and later transcribed. I will be the only person with access to the information you provide and the transcript will be provided to you for your review and approval.

Benefits and risks to participation
Please note that the research methods and procedures used in this case study meet current research practices in the social sciences. There are minimal risks to you in this study although you are asked to share your perceptions with me. You are encouraged to ask questions at each step of your participation; you can withdraw from the research at any time without penalty at which time all information provided by you will be deleted from my files.
        This research offers some benefits to Aboriginal learners and to society in general. It allows participants the opportunity to explore their thinking about what a successful model of an online high school looks like for Aboriginal learners. As a result, participants can become more aware of things that can be done to improve student success at online Aboriginal high schools.

Real or Perceived Conflict of Interest
As I hold no title or role at Awa Virtual School (AVS), there is no conflict of interest.

Confidentiality, security of data, and retention period
Your privacy will be carefully protected throughout this study. All information collected will be maintained in confidence with hard copies (e.g., transcripts) stored in a locked filing cabinet in

my home office, and electronic copies (e.g. audio recordings) stored on a password-protected home computer in password-protected files.

Audio recordings (data) will not contain any names or other identifiers. This data will be retained by the researcher stored on a password-protected home computer in password-protected files. Any data relating to an identifiable individual who has withdrawn at any time throughout the process will not be retained.

Sharing results

The results of the study will be submitted to Athabasca University as a research report in partial fulfillment for a Doctor of Education (EdD) degree. The final dissertation will also be posted on the researcher's personal website.

REB Approval and Institutional Support

The research is being conducted under the supervision of four academic supervisors, with the approval of the University, and has been approved by the University Research Ethics Board (REB). Should you have any comments or concerns regarding your treatment as a participant in this study, please contact the Office of Research Ethics at 1-800-788-9041, ext. 6718 or by e-mail to rebsec@athabascau.ca.

Thank you for your participation.

Appendix C: Letter of Informed Consent (Survey)

A Description of a Successful Indigenous Online High School:
Perspectives of Teachers, Staff, Students, and Parents

PARTICIPANT CONSENT FORM – Online survey

Principal Researcher: Sophia Palahicky [sophiapalahicky@yahoo.com]
Supervisor: Dr. Dianne Conrad [diannec@athabascau.ca]

You are invited to participate in a single case study involving Awa Virtual School (AVS). The purpose of the study is to describe a successful Indigenous online high school. The questions guiding this study are:

1. What are the essential components of a successful Indigenous online high school?
2. What role does Indigenous culture play in shaping a successful Indigenous online high school?

Your participation and how information will be collected

You are invited to participate in an online survey expected to take 5-10 minutes to complete. The survey questions are closed and some of them contain Likert-format scales.

Benefits and risks to participation

There are minimal risks to you in this study. However, as you will be asked to share your perceptions in the online survey, there is some privacy invasion. Please be advised that the methods and procedures used in this case study meet current research practices in the social sciences. The research is being conducted under the supervision of four academic supervisors, with the approval of the University, and has been approved by the University Research Ethics Board (REB). You are encouraged to ask questions at each step of your participation; you can decide to withdraw from the research at any time and without penalty.

This study also offers benefits. It allows participants the opportunity to explore their thinking about what a successful model of an online high looks like for Aboriginal learners. As a result, participants can become more aware of things that can be done to improve student success at an online Aboriginal high school.

Real or Perceived Conflict of Interest

As I hold no title or role at Awa Virtual School (AVS), there is no conflict of interest.

Confidentiality, security of data, and retention period

Your privacy will be carefully protected throughout this study. All information collected will be maintained in confidence. Survey data will not contain any names or other identifiers. The data will be retained by the researcher stored on a password-protected home computer in password-protected files. Any data relating to an identifiable individual who has withdrawn at any time throughout the process will not be retained.

Sharing results
I will submit and share my final report to Athabasca University in partial fulfillment for a Doctor of Education (EdD) degree. The final dissertation will also be posted on the researcher's personal website.

Procedure for withdrawing from the study
Participants may withdraw from the study at any time and should contact me to do so (sophiapalahicky@yahoo.com). Please note that any anonymous data will still be used.

Consent
This case study requires voluntary participation. By completing the survey, you indicate that you have read and understand the information above and freely give your informed consent to participate in this case study. Please keep a copy of this letter for your records**.**

Note to parents
Your child is also invited to participate in this study. If you allow your child to complete the survey, this indicates your parental consent.

REB Approval
This study has been reviewed by the Athabasca University Research Ethics Board. Should you have any comments or concerns regarding your treatment as a participant in this study, please contact the Office of Research Ethics at 1-800-788-9041, ext. 6718 or by e-mail to rebsec@athabascau.ca.

Appendix D: Interview Questions

A Description of a Successful Indigenous Online High School:
Perspectives of Teachers, Staff, Students, and Parents

Section one – General Information

Question 1 - Can you tell me about your role and what you do at Awa Virtual School (AVS)?

Section two - Essential components of a successful online Aboriginal high school

Question 2 - Can you share your thoughts about what students need in order to be successful at an online Aboriginal high school?

Question 3 - Can you share your thoughts on what success means or how you would describe success for students at an online Aboriginal high school?

Question 4 - What do you think are the critical factors for an online Aboriginal high school to be successful?

Question 5 – Is reconnecting Aboriginal learners to their languages, history, and cultures critical to the success of an online Aboriginal high school?

How do you feel about this statement, agree, disagree, or are you neutral? Reconnecting Aboriginal learners to their languages, history, and cultures is critical to the success of an online Aboriginal high school. Do you agree, disagree, or are you neutral?

Section three - The role of culture in shaping a successful online Aboriginal high school

Question 6 - What are your thoughts on the role Aboriginal culture plays in shaping a successful model for an online Aboriginal high school?

Question 7 - How do you see culture shaping the success of an online Aboriginal high school?

Question 8 - Do you agree, disagree, or are you neutral to the following statement? Aboriginal culture is the driving force for success in an online Aboriginal high school.

Do you have any final remarks you would like to make?

Appendix E: Interview Script with Questions

A Description of a Successful Indigenous Online High School:
Perspectives of Teachers, Staff, Students, and Parents

This interview will take about 30-60 minutes. There are a total of 8 questions. Please take as much time as you need to respond or take pauses if needed before responding. If you need me to repeat a question, please let me know. The purpose of this individual and confidential interview is to have you share your thoughts and perceptions about a successful online Aboriginal high school. Your responses can be in the form of stories if you choose. Feel free to give examples but do not include any specific identifiers or names. The interview will be recorded and then later transcribed. You will be provided with a copy of the transcript for your review and approval when transcription has been completed. You will not be identified by name in the transcript. You may stop the interview or withdraw at any time. If you choose to do so, all data provided by you will be destroyed.

Interview Script with Questions
We will begin with Section 1 about general information.

Question 1 - Can you tell me about your role and what you do at Awa Virtual School (AVS)?

Thank you. Now we move into Section 2 about essential components of a successful online Aboriginal high school.

Question 2 - Can you share your thoughts about what students need in order to be successful at an online Aboriginal high school?

Thank you for sharing. We now move to Question 3. Can you share your thoughts on what success means or how you would describe success for students at an online Aboriginal high school?

Thank you for sharing. We now move to Question 4 - What do you think are the critical factors for an online Aboriginal high school to be successful?

Thank you for sharing. We now move to Question 5 which involves reconnecting Aboriginal learners to their languages, history, and cultures.   Is this critical to the success of an online Aboriginal high school?

How do you feel about this statement, agree, disagree, or are you neutral? Reconnecting Aboriginal learners to their languages, history, and cultures is critical to the success of an online Aboriginal high school. Do you agree, disagree, or are you neutral?

Thank you. We now move to Section 3 which concerns the role of culture in shaping a successful school. There are three questions left.

Question 6 - What are your thoughts on the role Aboriginal culture plays in shaping a successful model for an online Aboriginal high school?

Thank you for sharing. We now move to Question 7 - How do you see culture shaping the success of an online Aboriginal high school?

Thank you for sharing. We now move to the final question. Do you agree, disagree, or are you neutral to the following statement? Aboriginal culture is the driving force for success in an online Aboriginal high school. Do you agree, disagree, or are you neutral.

Thank you for taking time to participate in this study and for sharing your thoughts, experiences, and perceptions.

Do you have any final remarks you would like to make?

Appendix F: Online Survey Questions
A Description of a Successful Indigenous Online High School:
Perspectives of Teachers, Staff, Students, and Parents

Online Survey Questions

Section 1 – General Information
Question 1
Please choose one of the following:
  F.   I am a teacher at Awa Virtual School (AVS).
  G.   I am a staff member at Awa Virtual School (AVS).
  H.   I am an administrator at Awa Virtual School (AVS).
  I.   I am a student at Awa Virtual School (AVS).
  J.   I am a parent/guardian of a student at Awa Virtual School (AVS).

Question 2
Please choose one of the following:
  F.   I self-identify as First Nation.
  G.   I self-identify as Métis.
  H.   I self-identify as Inuit.
  I.   I do not wish to self-identify.
  J.   Not applicable.

Section 2- Essential components of a successful online Aboriginal high school
Question 1
Please read the statement below then choose one of the following: Strongly Agree, Agree, Disagree, Strongly Disagree, or Neutral.
Reconnecting Aboriginal learners to their languages, history, and cultures is critical to the success of an online Aboriginal high school.
  F.   Strongly Agree
  G.   Agree
  H.   Strongly Disagree
  I.   Disagree
  J.   Neutral

Question 2
Having access to Internet and a computer is critical to the success of an online Aboriginal high school.
  F.   Strongly Agree
  G.   Agree
  H.   Strongly Disagree
  I.   Disagree
  J.   Neutral

Question 3
Teaching students how to use a computer and how to navigate the web is critical to the success of an online Aboriginal high school.
    F. Strongly Agree
    G. Agree
    H. Strongly Disagree
    I. Disagree
    J. Neutral

Question 4
Synchronous classes use web conferencing technology like Skype, Elluminate, Blackboard Collaborate, or Adobe Connect in order to allow students to interact in "real time" (i.e. at the same time, regardless of location). Having synchronous classes where students can interact with their classmates and teachers in real time is critical to the success of an online Aboriginal high school.
    F. Strongly Agree
    G. Agree
    H. Strongly Disagree
    I. Disagree
    J. Neutral

Question 5
Including Aboriginal languages in the curriculum is critical to the success of an online Aboriginal high school.
    F. Strongly Agree
    G. Agree
    H. Strongly Disagree
    I. Disagree
    J. Neutral

Question 6
Including Aboriginal culture and history in the curriculum is critical to the success of an online Aboriginal high school.
    F. Strongly Agree
    G. Agree
    H. Strongly Disagree
    I. Disagree
    J. Neutral

Question 7
Having teachers who know about Aboriginal cultures and languages is critical to the success of an online Aboriginal high school.
    F. Strongly Agree
    G. Agree
    H. Strongly Disagree
    I. Disagree

    J. Neutral

Question 8
Flexible start and end dates (of course registration) are critical to the success of an online Aboriginal high school.
    F. Strongly Agree
    G. Agree
    H. Strongly Disagree
    I. Disagree
    J. Neutral

Section 3 – Role of culture in shaping a successful online Aboriginal high school
Question 1
Please read the statement below then choose one of the following: Strongly Agree, Agree, Disagree, Strongly Disagree, or Neutral.
Aboriginal culture is the driving force for success in an online Aboriginal high school.
    F. Strongly Agree
    G. Agree
    H. Strongly Disagree
    I. Disagree
    J. Neutral

Question 2
Aboriginal learners can be successful in an online Aboriginal high school without reconnecting to Aboriginal cultures and languages.
    F. Strongly Agree
    G. Agree
    H. Strongly Disagree
    I. Disagree
    J. Neutral

Appendix G: Research Ethics Board (REB) Approval

April 29, 2015

Mrs. Sophia Palahicky
Other Academic Centres/Depts\CDE-Doctor of Education in Distance Education (EdD)
Athabasca University

File No: 21793

Ethics Expiry Date: April 28, 2016

Dear Mrs. Sophia Palahicky,

Thank you for your recent resubmission to the Centre for Distance Education Departmental Ethics Review Committee, addressing the clarifications and revisions as requested for your research entitled, 'A Description of a Successful Indigenous Online High School: Perspectives of Teachers, Staff, Students, and Parents'.

Your application has been **Approved** and this memorandum constitutes a *Certification of Ethics Approval*. You may begin the research immediately.

This REB approval, dated April 29, 2015, is valid for one year less a day.

Throughout the duration of this REB approval, all requests for modifications, ethics approval renewals and serious adverse event reports must be submitted via the Research Portal.

To continue your proposed research beyond April 28, 2016, you must apply for renewal by completing and submitting an Ethics Renewal Request form before April 15, 2016. Failure to apply for **annual renewal** before the expiry date of the current certification of ethics approval may result in the discontinuation of the ethics approval and formal closure of the REB ethics file. Reactivation of the project will normally require a new Application for Ethical Approval and internal and external funding administrators in the Office of Research Services will be advised that ethical approval has expired and the REB file closed.

When your research is concluded, you must submit a Project Completion (Final) Report to close out REB approval monitoring efforts. Failure to submit the required final report may mean that a future application for ethical approval will not be reviewed by the Research Ethics Board until such time as the outstanding reporting has been submitted.

At any time, you can login to the Research Portal to monitor the workflow status of your application.

If you encounter any issues when working in the Research Portal, please contact the system administrator at research_portal@athabascau.ca.

Sincerely,

Pat Fahy, Chair, Centre for Distance Education Departmental Ethics Review Committee
Athabasca University Research Ethics Board

Appendix H: Quantitative Data Results

Number of records in this query:		17
Total records in survey:		17
Percentage of total:	100.00%	

Field summary for 1.1

Please choose one of the following:

Answer	Count	Percentage
I am a teacher at Awa Collegiate. (A1)	7	41.19%
I am a staff member at Awa Collegiate. (A2)	2	11.76%
I am an administrator at Awa Collegiate. (A3)	2	11.76%
I am a student at Awa Collegiate. (A4)	4	23.53%
I am a parent/guardian of a student at Awa Collegiate. (A5)	2	11.76%
No answer	0	0.00%
Not completed or Not displayed	0	0.00%

Field summary for 1.2

Please choose one of the following:

Answer	Count	Percentage
I self-identify as First Nation. (A1)	8	47.06%
I self-identify as Métis. (A2)	2	11.76%
I self-identify as Inuit. (A3)	0	0.00%
I do not wish to self-identify. (A4)	0	0.00%
Not applicable. (A5)	7	41.18%
No answer	0	0.00%
Not completed or Not displayed	0	0.00%

Field summary for 2.1

Reconnecting Aboriginal learners to their languages, history, and cultures is critical to the success of an online Aboriginal high school.

Answer	Count	Percentage
Strongly Agree (A1)	10	58.82%
Agree (A2)	5	29.41%
Strongly Disagree (A3)	0	0.00%
Disagree (A4)	0	0.00%
Neutral (A5)	1	5.88%
No answer	1	5.88%
Not completed or Not displayed	0	0.00%

Field summary for 2.2

Having access to Internet and a computer is critical to the success of an online Aboriginal high school.

Answer	Count	Percentage

Answer	Count	Percentage
Strongly Agree (A1)	15	88.24%
Agree (A2)	1	5.88%
Strongly Disagree (A3)	0	0.00%
Disagree (A4)	0	0.00%
Neutral (A5)	0	0.00%
No answer	1	5.88%
Not completed or Not displayed	0	0.00%

Field summary for 2.3

Teaching students how to use a computer and how to navigate the web is critical to the success of an online Aboriginal high school.

Answer	Count	Percentage
Strongly Agree (1)	12	70.59%
Agree (2)	3	17.65%
Strongly Disagree (3)	0	0.00%
Disagree (4)	0	0.00%
Neutral (5)	1	5.88%
No answer	1	5.88%
Not completed or Not displayed	0	0.00%

Field summary for 2.4

Synchronous classes use web conferencing technology like Skype, Elluminate, Blackboard Collaborate, or Adobe Connect in order to allow students to interact in "real time" (i.e. at the same time, regardless of location).

Having synchronous classes where students can interact with their classmates and teachers in real time is critical to the success of an online Aboriginal high school.

Answer	Count	Percentage
Strongly Agree (1)	11	64.71%
Agree (2)	4	23.53%
Strongly Disagree (3)	1	5.88%
Disagree (4)	0	0.00%
Neutral (5)	0	0.00%
No answer	1	5.88%
Not completed or Not displayed	0	0.00%

Field summary for 2.5

Including Aboriginal languages in the curriculum is critical to the success of an online Aboriginal high school.

Answer	Count	Percentage

Strongly Agree (1)	4	23.53%
Agree (2)	6	35.29%
Strongly Disagree (3)	0	0.00%
Disagree (4)	1	5.88%
Neutral (5)	5	29.41%
No answer	1	5.88%
Not completed or Not displayed	0	0.00%

Field summary for 2.6

Including Aboriginal culture and history in the curriculum is critical to the success of an online Aboriginal high school.

Answer	Count	Percentage
Strongly Agree (1)	11	64.71%
Agree (2)	5	29.41%
Strongly Disagree (3)	0	0.00%
Disagree (4)	0	0.00%
Neutral (5)	0	0.00%
No answer	1	5.88%
Not completed or Not displayed	0	0.00%

Field summary for 2.7

Having teachers who know about Aboriginal cultures and languages is critical to the success of an online Aboriginal high school.

Answer	Count	Percentage
Strongly Agree (1)	10	58.82%
Agree (2)	5	29.41%
Strongly Disagree (3)	0	0.00%
Disagree (4)	0	0.00%
Neutral (5)	1	5.88%
No answer	1	5.88%
Not completed or Not displayed	0	0.00%

Field summary for 2.8

Flexible start and end dates (for course registration) are critical to the success of an online Aboriginal high school.

Answer	Count	Percentage
Strongly Agree (1)	6	35.29%
Agree (2)	5	29.41%
Strongly Disagree (3)	1	5.88%
Disagree (4)	1	5.88%
Neutral (5)	3	17.65%
No answer	1	5.88%
Not completed or Not displayed	0	0.00%

Field summary for 3.1

Aboriginal culture is the driving force for success in an online
Aboriginal high school.

Answer	Count	Percentage
Strongly Agree (1)	3	17.65%
Agree (2)	8	47.06%
Strongly Disagree (3)	2	11.76%
Disagree (4)	2	11.76%
Neutral (5)	1	5.88%
No answer	0	0.00%
Not completed or Not displayed	1	5.88%

Field summary for 3.2

Aboriginal learners can be successful in an online Aboriginal high
school without reconnecting to Aboriginal cultures and languages.

Answer	Count	Percentage
Strongly Agree (1)	5	29.41%
Agree (2)	5	29.41%
Strongly Disagree (3)	1	5.88%
Disagree (4)	3	17.65%
Neutral (5)	2	11.76%
No answer	0	0.00%
Not completed or Not displayed	1	5.88%

Appendix I: Research Audit Trail

Table 8: A Record of the Research Steps and Activities

Date	Activity
January, 2013	Reviewed list of potential schools to identify a suitable site for case study research
April 2013	Completed sample research proposal for EDD 802
June 2014	Preliminary review of relevant literature
September 2014	Made methodological determinations through research seminar EDD 805
September 2014	Sent email to school director to inquire about interest in study participation
October 2014	Received written confirmation from school director about interest in study participation
October 2014	Completed first draft of Chapter One (Introduction)
November 2014	Completed first draft of Chapter Two (Literature Review)
December 2014	Completed first draft of Chapter Three (Methodology)
January 2015	Sent email to school director to remind about study participation and inform about REB approval process
January 2015	Received written confirmation from school director about continued interest in study participation
February 2015	Completed 10 iterations of edits on chapters 1-3 (research proposal)
March 2015	Completed proposal defense
March 2015	Completed revisions of chapters 1-3 based on feedback from committee members
April 2015	Received Research Ethics Board (REB) Approval
May 2015	Sent formal letter of request to school director for study participation
May 2015	Received written confirmation from school director about interest in study participation
May 2015	Sent Letter of Informed Consent to school administrators, teachers, and staff
May 2015	School principal forwarded Letter of Informed Consent and online survey link to parents
June 2015	Online survey link sent to teachers, staff, and parents
August 2015	Completed revisions of Chapters 1-3
September 2015	Scheduled face to face interviews with administrators, staff, and teachers
October 2015	Travelled to research site to conduct face to face interviews
October 2015	Started data analysis
October 2015	Completed two interviews with parents/guardians

October 2015	Completed revisions of Chapters 1-3
October 2015	Continued data analysis
November 2015	Continued data analysis
November 2015	Completed first draft of Chapters 4 and 5
November 2015	Completed two rounds of revisions on Chapters 4 and 5
December 2015	Completed first draft of Chapter 6
January 2016	Completed third round of revisions Chapters 4, 5, and 6
January 2016	Completed first draft of final dissertation
February 2016	Completed second draft of final dissertation
February 2016	Completed third draft of final dissertation
March 2016	Completed fourth draft of final dissertation
March 2016	Completed fifth draft of final dissertation
April 2016	Completed sixth draft of final dissertation
May 2016	Completed seventh draft of final dissertation
September 2016	Completed eighth draft of final dissertation
October 2016	Approval granted for oral defense
November 2016	Completed ninth draft of final dissertation
December 2016	Completed oral defense
December 2016	Completed tenth draft of final dissertation
January 2017	Completed eleventh draft of final dissertation
February 2017	Completed final dissertation

Appendix J: CURRICULUM VITAE

Mrs. Sophia Palahicky
sophiapalahicky@yahoo.com

Education
2016 – **Doctor of Education (EdD)**, Athabasca University
2009 - **Master of Distance Education (MDE)**, Athabasca University
2000 – **Professional Teaching Certificate**, B. C. College of Teachers
1998 – **Teaching Certification**, College of the Bahamas
1997 – **Bachelor of Arts Degree** – Sociology, Acadia University, **Dean's List**
1991 – **Associate of Arts Degree** – Education, College of the Bahamas

Other Relevant Certification
2013 – Certified Member of Canadian Association of Instructional Designers (**CAID**)

Academic Publication
2015 - Utilizing Learning Management System (LMS) Tools to Achieve Differentiated
Instruction published by International Global Publishing. In Keengwe, J. (2015). *Models for
improving and optimizing online and blended learning in higher education*. http://www.igi-
global.com/book/models-improving-optimizing-online-blended/104615

Leadership Positions in Technology Education
2015 – Current: **Manager, Learning Design Services**, Centre for Teaching and Educational
Technologies, CTET, Royal Roads University, B.C.
- manage a team of 10+ instructional designers who work with core and associate faculty
  to design and develop courses and programs delivered online, in blended format, and face
  to face
- team lead for educational technology projects to enhance student learning experience
- team lead for program and course design process improvements and change management
  projects
- provide support to programs and courses in the development of learning outcomes and
  program mapping
- voting member of Curriculum Committee Extended
- strategic planning, cost-benefit analysis, and recruitment
- consult with clients; identifying needs and facilitating solutions
- facilitate Instructional Skills Workshop (ISW) and other faculty development sessions

2012-2014: Distance Learning Consultant, Manitoba Education & Advanced Learning

- managed implementation and delivery of web-based courses for all school divisions in the Province of Manitoba
- was responsible for financial budget of $500,000
- organized and moderated professional development sessions for teachers in online pedagogy, use of technology, and use of learning management system (LMS)
- moderated information sessions for pre-service teachers in distance and online education and educational technologies (Brandon University & University of Winnipeg)
- presented at technology conferences on educational technology
- LMS Administrator (Blackboard Learn with over 10,000 users)
- Web-Based Course Request (WBCR) system manager
- supervised 7-10 support staff in absence of Distance Learning Unit Coordinator
- website management

2014-2016 Adjudicator – eCampus Ontario (Contracted)

- reviewed, ranked, and scored 60 RFP's from universities in Ontario for proposals to develop or re-design post-secondary online programs and courses
- collaborated with fellow adjudicators as to the review process, policies, and guidelines

Post-secondary Online Teaching Experience
2015-Present – **Associate Faculty**, School of Education and Technology, Royal Roads University, Victoria, B.C.,

Course summary
LRNT 504 (Instructional Design for Technology Enabled Learning) introduces instructional design theories and models and provides an opportunity to apply instructional design skills by developing a sample online module for delivery.
Tasks

- moderate online discussion forums and provide opportunities for critical thinking and reflection
- manage online community of learners
- use formative and summative assessments to evaluate students
- online learning platforms used are Moodle and Blackboard Collaborate

Course summary
IDSN 522 (Project Management for Instructional Designers) is designed to provide fundamental knowledge of disciplines related to instructional design and project management, and some practical tools to allow you to apply this knowledge to a variety of educational learning projects.
Tasks

- moderate online discussion forums and provide opportunities for critical thinking and reflection
- manage online community of learners
- use formative and summative assessments to evaluate students

- online learning platforms used are Moodle and Blackboard Collaborate

2014-2015 – **Online Instructor**, University of Manitoba, Emerging Technologies for Learning Certificate Program

Course summary
EDTC 0210 (Digital Literacy) explores new and emerging information technologies, particularly web-based ones, and how they impact formal and informal learning environments. Students will experience these technologies and resources firsthand in order to gain a greater understanding of their use. All students will be expected to create and present a brief presentation in the form of an online seminar to their peers. Class participation in discussion forums and synchronous online web seminars is required. The major project is the creation of an e-portfolio that reflects the student's experiences in using digital media in their own work.
Tasks
- moderated online discussion forums and provide opportunities for critical thinking and reflection
- managed online community of learners
- used formative and summative assessments to evaluate students
- online learning platforms used were D2L (asynchronous tool) and Adobe Connect (synchronous tool)

2013-2014 **Online Instructor**, Athabasca University, Master of Education Program
Course summary
MDDE630 (Trends and Issues in K-12 Distance Learning) explores current and emerging uses of information and communication technology (ICT) in schools as well as the factors associated with their successful implementation. Research and practice related to educational and technological innovations in the K-12 sector is examined. In addition, students participate in collaborative, applied research activities in which they investigate their own school environments and explore the capacity for change and technology adoption.
Tasks
- taught graduate students in M.Ed. program
- marked and graded academic writing and research assignments
- moderated online discussion forums and provided opportunities for critical thinking and reflection
- managed online community of learners
- online learning platforms used were Moodle (asynchronous tool), and Adobe Connect (synchronous tool)

Instructional Design Experience
2012-2014 –**Instructional Designer** (Contracted), Continuing Education, University of Manitoba
- designed online courses for certificate and diploma programs in business, management, horticulture, and college preparatory math skills course
- collaborated with Subject Matter Experts (SMEs)

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- uploaded content to LMS
- ensured courses met copyright guidelines

2011-2012 – **Instructional Designer** (Faculty Term Position 1.5 years), University of Manitoba, Winnipeg, Manitoba
- designed university credit and non-credit online courses across faculties
- project manager for development of post-secondary online degree courses, team included content specialists, web publishers, media specialists, copyright experts, and instructors
- contracted content specialists to develop content for post-secondary online degree courses
- provided instructional design guidance and instructions to content specialists, instructors and web publishers
- led project developments for a wide range of faculties including computer science, nursing, human ecology, business, and Continuing Education courses
- edited and evaluated online courses developed for post-secondary degree credit
- edited and evaluated online courses developed for post-secondary non-degree credit
- led the D2L migration process for Continuing Education courses
- trained instructors on use of Adobe Connect
- used Angel (LMS) and Desire To Learn (D2L) to create course framework
- chair of Appeals committee
- chair of Equity committee
- chair of United Way committee
- senate representative

2002-2011 – **Instructional Designer, Online Instructor, & Program Advisor,** North Coast Distance Education School, Terrace, BC
- designed secondary school level online courses
- supported adult distance learners using Elluminate (synchronous web conferencing), D2L (LMS), and First Class (asynchronous web conferencing)
- collaborated with First Nations Education Facilities including Gitwangak, Hecate Strait, and Kitkatla to implement distance programs
- developed program plans for adult students and completed prior learning assessments
- advised adult students on which courses they need to complete a B.C. Dogwood
- used Grad Tracks (File Maker Pro) and Citrix SIRS DE (database)
- taught using Elluminate (synchronous Web Conferencing)
- managed courses in Desire to Learn D2L (LMS)
- managed online classroom in First Class (CMS)
- worked as Learning Resource Teacher (prepared Individual Education Plans and files for psycho-educational assessments)
- taught BC Open School courses (online and print formats) Communications 12, Language Arts 10, Composition 11, Physical Education 10-12, Social Studies 8, Spanish 9-12

Other Post-Secondary Position
2014-2015 (Term Position) – **Coordinator, Student Services,** Royal Roads University
- responsible for hearing student conduct cases
- team lead and organizer of online and face-to-face orientation for graduate and undergraduate students (including international students)
- using Blackboard Collaborate to run online orientations RRUReady
- managing website updates for MyRRU Students
- managing Xibo Digital Signage
- using Lime Survey for RRUSA elections
- supervise two Student Activity Assistants
- liaison for Royal Roads University Student Association (RRUSA)
- working collaboratively with Office of Global Advancement and International Study Centre
- Ombuds support

Educational Technology & Digital Literacy Skills
- Proficient with learning management systems (Blackboard Learn, D2L, Moodle, and Angel), and currently, teaching with Moodle and Blackboard Collaborate
- Proficient with Blackboard Collaborate and Adobe Connect (Web Conferencing)
- Used Angel and D2L extensively to design online courses at the University of Manitoba
- Trained distance instructors at the University of Manitoba on how to use Adobe Connect (synchronous conferencing)
- Desire To Learn (D2L) – developed courses, taught online, and managed courses
- Moderated numerous v-classes in Elluminate (Blackboard Collaborate)
- Used Web 2.0 tools including wikis, blogs, and online discussion forums in instruction
- Proficient in Microsoft Office, WordPress, Padlet, FlipGrid, SnagIt, Screencastomatic, and more
- Proficient in social media tools, i.e. Twitter, LinkedIn, Instagram, Facebook, YouTube, etc.

Presentations

Date	Role	Conference/Workshop	Topic	Location
September 2016	Co-presenter	Teaching with Technology, Royal Roads University	Sharing International Experiences (Using Padlet)	Victoria, BC
June 2016	Presenter	Festival of Learning	Benefits of Collaborative Learning Design	Vancouver, BC
November 2015	Presenter	Indigenous Distance Education Conference, Royal Roads University	Virtual Schools for Indigenous Learners	Victoria, BC

May 2014	Presenter	Riding The Wave	Teaching and Learning With Technology	Gimli, Manitoba
May 2014	Presenter	Manitoba Association of Distance Learning & Teaching (MADLaT)	Generations of Distance Education (A Literature Review)	Winnipeg, Manitoba
February 2014	Presenter	BYTE	Using a Learning Management System (LMS) for Formative Assessments	Neepawa, Manitoba
October 2013	Presenter	SAGE	Technology, Pedagogy, & Student Success: A Rewarding Combination	Winnipeg, Manitoba
May 2013	Presenter	Manitoba Association of Distance Learning & Teaching (MADLaT)	Technology Versus Pedagogy. Who are you betting on?	Winnipeg, Manitoba
May 2013	Presenter	Riding The Wave	Technology Versus Pedagogy	Gimli, Manitoba
February 2013	Presenter	BYTE	Characteristics of Twenty First Century Learners	Neepawa, Manitoba
February 2013	Presenter	Mystery Lake School Division Conference	How to Use an LMS to Engage Learners	Thompson, Manitoba
June 2012	Presenter	Conference for Pre Service Teachers	How to Create a Course Syllabus	Winnipeg, Manitoba
May 2012	Panelist	Manitoba Association of Distance Learning & Teaching (MADLaT)	Instructional Design: Best Practices for e-learning in a Changing World	Winnipeg, Manitoba
October 2011	Panelist	COHERE	Diversifying Blended Learning	Cambridge, Ontario
September 2011	Speaker	Canadian Society for Training & Development Winnipeg Chapter	Exploring eLearning Through Best Practices and Lessons Learned	Winnipeg, Manitoba
June 2011	Presenter	Faculty Pro D at	Using Discussion	Winnipeg,

		University of Manitoba	Forums Effectively	Manitoba
June 2011	Presenter	Faculty Pro D at University of Manitoba	Using a Wiki as a Teaching Tool	Winnipeg, Manitoba

Doctoral Courses Completed
December 9, 2016 – Dissertation Defense
January- April 2015 – EDDE 806 (Research Seminar II)
September-December 2014 - EDDE 805 (Research Seminar for Dissertation)
January-April 2014 - EDDE 804 (Leadership & Project Management in Distance Education)
September-December 2013 – EDDE 803 (Teaching & Learning in Distance Education)
January- April 2013 – EDDE 802 (Advanced Research In Education)
June-December 2012 – EDDE 801 (Advanced Topics and Issues in Distance Education)

Masters Courses Completed
MDDE 601 – Introduction to Distance Education/Training
MDDE 602 – Research Methods in Distance Education
MDDE 603 - Foundations of Instructional Design
MDDE 604 – Instructional Design in Distance Education
MDDE 605 – Planning and Management in Distance Education
MDDE 610 – Introduction to Distance Education Technologies
MDDE 611 - Foundations of Adult Education
MDDE 612 – Experiential Learning
MDDE 613 – Adult Education and Life Long Learning
MDDE 617 – Program Evaluation in Distance Education
MDDE 621 – Online Teaching and Learner Support
MDDE 695 – Distance Education Comprehensive Examination

K-12 Teaching Experience in Bricks & Mortar Schools
2000-2002 – Teacher – Coast Mountain School District 82
- taught grades K-12 as teacher-on-call and short term contracts
1998 – Spanish Teacher, Catholic Board of Education, Nassau, Bahamas
1997 – History Teacher (grades 7-11), Aquinas College, Nassau, Bahamas
1991-1993 – Kindergarten Teacher, SeeSaw Academy, Nassau, Bahamas

Post Secondary Volunteer Work
2013-2016 – **Peer Reviewer** for the International Review of Research in Open and Distance Learning (IRRODL)
2013-2015 – **Peer Reviewer** for the Canadian Journal of University Continuing Education (CJUCE)