

Digital Technology Innovations in Education in Remote First Nations

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Abstract

Using a critical settler colonialism lens, we explore how digital technologies are being used for new education opportunities and First Nation control of these processes in remote First Nations. Decolonization is about traditional lands and creating the conditions necessary so Indigenous people can live sustainably in their territories (Simpson, 2014; Tuck & Yang, 2012). Remote First Nations across Canada face considerable challenges related to accessing quality adult education programs in their communities. Our study, conducted in partnership with the Keewaytinook Okimakanak Research Institute, explores how community members living in remote First Nations in Northwestern Ontario are using digital technologies for informal and formal learning experiences. We conducted an online survey in early 2014, including open-ended questions to ensure the community members' voices were heard. The critical analysis relates the findings to the ongoing project of decolonization, and in particular, how new educational opportunities supported by digital technology enable community members to remain in their communities if they choose to, close to their traditional lands.

Keywords: Critical studies; education; settler colonialism; decolonization; information and communication technologies; remote First Nations

exploring our connective educational landscape

Digital Technology Innovations in Education in Remote First Nations

We need someone to teach the youth and kids about how to survive in the bush, about hunting, trapping, the old way of life, and how to get medicine from the land, what kind of plants to use, so many plants are out there. Our legends and stories from the past are getting lost, we need to teach our future kids about our traditions and culture and mostly our language.

—Keewaytinook Okimakanak (KO) community member, online survey, 2014

Students in many remote First Nations in Northwestern Ontario and other regions across Canada now have a choice for their education: to remain in their community with their family, close to their traditional lands and teachings, or to travel to a far-away urban environment to access an education. The choice is made possible with digital technologies that support new formal and informal educational opportunities in remote First Nations. The use of digital technologies in these special geographic environments is changing how people create and share their experiences and teachings with others (McMullen & Rorrbach, 2003; Molyneaux et al., 2014; Simon, Burton, Lockhart, & O'Donnell, 2014). This study explores how digital technology is supporting the decolonization of education in remote First Nations in Northwestern Ontario.

To balance the changes introduced by these technologies with the status quo in the First Nations, their leadership and educators are cautiously developing local networks and introducing these technologies in their communities. The protection and maintenance of their local languages is critical in their decolonization struggle (Battiste, 2013 Simpson, 2014). The types of employment and the social changes introduced with digital technologies require long-term planning and a strong connection to traditional values. This long-term vision ensures the online content being used for educational purposes is appropriate and effective in sustaining local cultures and teachings.

For the past 20 years, First Nation leaders and educators across the North have directed the development of their locally owned and operated broadband networks, equipment, and the associated education applications in their communities. With these developments, people living in remote First Nations are innovating and creating choices in the delivery of new training programs and services. With digital tools and networks, remote First Nations are supporting a variety of training programs addressing some of the needs of the communities (Walmark, 2010). Parents and children are now able to remain in their communities to complete their education in familiar and safe spaces. Professional development and new learning opportunities along with other adult training programs are now being delivered online. Some of these programs are being planned and delivered by community members in their own language to upgrade local skills and provide cost-efficient alternatives to expensive travel. Programs supported by digital technologies provide community members with the opportunity to network with their peers in neighbouring communities. First Nation community members are active users of social media and many other online tools for informal learning opportunities (Molyneaux et al., 2014; Potter, 2010; Simon et al., 2014).

Our article presents the results of an online survey of residents of five remote First Nations in Northwestern Ontario conducted in early 2014 in collaboration with the communities and their tribal council, Keewaytinook Okimakanak (KO). The study explores two questions from a critical perspective: How are the people living in five remote KO First Nations using

digital technologies for learning new skills? And, what have been their experiences with these opportunities, and what are their perspectives on digital technology in the community.

We designed the survey using participatory action research (PAR) methodologies to ensure ownership of the survey and its data by KO and the communities (Beaton & Carpenter, 2015; Beaton, Perley, George & O'Donnell, in press). The PAR strategies used encourage the respondents to share their thoughts and experiences, and support the respondents, ensuring the process is done in a safe and engaging way (Wilson, 2008). When provided with the opportunity to share their recommendations and concerns, many respondents provided thoughtful comments about educational opportunities and the use of digital technology in their communities. The comments throughout this article are selected to present resident's perspectives on their use of these technologies.

Digital Technology and Decolonization in First Nations

[We need] more land-based activities for the younger generations to learn how to survive out on the land where our ancestors taught us how to survive.

—KO community member, online survey, 2014

The design and analysis of the study was informed by Tuck and Yang's (2012) article, "Decolonization is not a metaphor." Working from a "desire-based" approach to research (Tuck, 2009), the study provides another perspective on digital development opportunities in remote First Nations across Canada. Tuck and Yang's article is central to the current study: Decolonization is about land and about creating the conditions necessary so that Indigenous peoples have the opportunity to connect with and live sustainably on their traditional territories. In Freire's (1970) well-known critical text, *Pedagogy of the Oppressed*, his analysis of the relationship between the colonizer and the colonized sees the need for critical pedagogy in which students are co-creators of knowledge in a process of liberation. Tuck and Yang are critical of Freire's analysis because of its positioning of decolonization primarily as an individual psychological process. They believe the unsettling work required is the repatriation of Indigenous peoples to their land and their traditions for those who are able to undertake these lifestyles. The First Nations involved in this study are doing the work required to begin providing these opportunities for families. As well, the First Nations are creating the tools they require to support the economic and social environments they desire.

The use of digital technology for education, knowledge acquisition, and socialization needs to be carefully questioned and challenged by educators and First Nation leaders. The lack of online Indigenous language resources, the dominant use of English online, the technical dependencies, and the financial and social costs associated with digital technology installation and use: these are some of the unsettling historical and current challenges of technological adoption being considered by First Nation leaders and educators as they invest in these tools.

One key challenge for digital technology use related to decolonization in remote First Nations is the dominance of Western languages. Many authors have identified the central role of Indigenous language in maintaining Indigenous culture (Battiste, 2013; Simpson, 2014). Almost all Indigenous languages in Canada are endangered, and easy access to the dominant Western languages online means that community members spending their time online are immersing themselves in Western culture. The target audience for most online content and services is the

“Western” population (Pannekoek, 2001; Pasch, 2015) and English is the overwhelmingly prevalent language used on the Internet, while many scarcely-used and endangered Indigenous languages are virtually non-existent.

As a result, the Internet and associated technologies may fuel the disappearance of Indigenous languages even as the communities strive to preserve them. To deflect the globalizing force of technology, the literature highlights the importance of providing community members with access to localized online resources catered to community-specific needs (Dyson & Hendriks, 2007; Gordon, 2006). This will help to ensure the protection that Indigenous peoples require to maintain ownership and control over their knowledge, language, and culture (Nickerson & Kaufman, 2005).

Furthermore, much of the existing material representing Indigenous peoples on the Internet imposes an outsider worldview that misrepresents and objectifies the culture, thereby furthering a colonialist agenda and contradicting the holistic values that Indigenous cultures uphold (Iseke-Barnes & Danard, 2007; Perley, 2009; Todd, 1996). At the same time, there are many examples of Indigenous organizations and communities using digital technologies to preserve Indigenous languages (Beaton, et al. *in press*). Pasch (2015) provides an excellent discussion of the “double-edged sword” of technology, including both utopian and dystopian views about bringing cutting-edge digital technologies into Inuit communities.

Digital technologies can support decolonization work. Being on the land, undertaking land-based economic and educational activities, supporting traditional and cultural practices—these activities require innovative approaches to education and skills training (Battiste, 2013; Potter, 2010; Walmark, 2010). As First Nation communities undertake these transitions, they are using digital technologies in many of the same ways the people and communities historically adopted other disruptive tools, including the use of guns for hunting, metal pots for cooking and other tools integrated into their communities, culture, and traditional practices. Using digital tools can be considered another colonizing effort by people examining these digital technology developments. For many Indigenous people living and working in these remote communities, digital technologies are often presented as another tool or weapon to protect and develop their communities and support the decolonization work required to defend their lands and resources from the colonizers. As they invest in digital developments in their communities, First Nation elders and leaders want to build online language resources, to share traditional and cultural activities and teachings in the language, to access information, to ensure safe spaces and activities on the land, to archive and protect local knowledge and language for future generations, and to create local social and business enterprises (Carpenter, 2010; Beaton & Campbell, 2014; Potter, 2010; Simon et al., 2014).

Numerous other Indigenous authors recognize the importance of the land and its relationship with Indigenous people (Alfred, 2009; Battiste, 2013; Corntassel, 2012; Coulthard, 2007 Grande, 2004; Palmater, 2011 Simpson, 2014). First Nation leaders struggle with colonial governments for nation-to-nation status and justice for communities to protect their rights and access to their traditional lands (Barker, 2009). Simpson (2014) described this battle over the land that continues today as the longest resistance struggle in Canada since the first settlers arrived in North America. Corntassel (2012) describes how Indigenous people understand their responsibilities (rights) and relationships (resources) with the land and their role in protecting the land and waters for future generations. The resurgence (reconciliation) being undertaken by

Indigenous people is evident in a renewed strength and commitment to traditional knowledge and practices among the youth (Corntassel, 2012). As this article highlights, the people living and working in remote First Nations continue to practice their traditional lifestyles that require them to be close to the land.

Along similar lines, in her book, *Decolonizing Education*, Battiste (2013) explains the importance of an Indigenous learning experience grounded in the language and traditions of the First Nations supporting decolonization. The historical and contemporary settler government-imposed education curriculum oppresses and marginalizes the First Nation communities and people by working to remove them from the land and thereby disappear from the Canadian landscape (Battiste, 2013; Donald, 2009; Snelgrove, Dhamoon & Corntassel, 2014). The KO First Nations in Northwestern Ontario, as partners in our research, created and are successfully operating locally owned education environments that support the language and traditions of the communities. These activities are understood by the KO communities as indigenizing efforts of their learning and education systems. The effective use of their locally owned, developed, controlled, accessible, and operated digital tools and network support their educational environments and their decolonizing efforts (Beaton & Campbell, 2014; Carpenter, 2010). Their efforts are understood as an extension of the broader principals of Ownership, Control, Access and Possession (OCAP) (Assembly of First Nations, 2007, 2010; Schnarch, 2004).

The writings of Battiste, Corntassel, Tuck and Yang suggest that creating local and regional First Nation owned educational opportunities that address local needs and priorities, language and historical challenges is a decolonizing practice. The importance of the current research is framed by understanding the political and historical forces that shape how the communities and the people came to this point in their existence. A critical theoretical approach highlights that the First Nations' work with education, traditional languages and lifestyles is being achieved under challenging conditions but with renewed determination (Battiste, 2013; Corntassel, 2012; Grande, 2004; Tuck & Yang, 2012).

First Nations control of First Nations education is the goal of all Indigenous communities across Canada. Local First Nation education programs and services struggle to deliver culturally appropriate opportunities for students while trying to work with the federal government bureaucracy. Their school environments are underfunded, demand extensive reporting, work within the legacy of residential schools, often operating in poor facilities along with many other obstacles (AFN, 2010; Battiste, 2013; Royal Commission on Aboriginal Peoples, 1996). Finding innovative strategies to overcome these obstacles is a constant effort by community leaders and educators in remote First Nations. Local schools and education programs are using digital technologies in many ways to address many of these challenges (Beaton & Campbell, 2014; Lockhart, Tenasco, Whiteduck & O'Donnell, 2014; Whiteduck, Tenasco, O'Donnell, Whiteduck, & Lockhart, 2014).

The effective use of digital technologies in the development and delivery of education programs in First Nations across Canada is being researched and published by the SSHRC-funded research project, First Nations Innovation, based at the University of New Brunswick. The former Chief and Education Director of Elsipogtog First Nation worked with the research team to produce the article, "Post-secondary distance education in a contemporary colonial context: Experiences of students in a rural First Nation in Canada" highlighting the important role of digital technologies in the facilitation of new educational opportunities in First Nations

(Simon et al., 2014). The theoretical base for community participatory research and these new educational opportunities using digital technologies is well grounded in the works of Indigenous leaders and academics. A comprehensive literature review about digital technology adoption in Indigenous communities in Canada describes how community members, First Nations and their regional organizations are making use of these tools (Beaton et al., in press).

The KO First Nations and Their Online Education Opportunities

I use the Internet access with just about everything I do. I research and check up on the things that I do online. One example is I looked up on how to clean a carburetor on a chainsaw. I use the Internet most of the time while trouble shooting just about everything. I honestly do not know what I would do without Internet access now.

—KO community member, online survey, 2014

The beautiful but harsh Canadian Shield in the northwestern region of Ontario is the location of the six First Nations that the Keewaytinook Okimakanak (KO) tribal council serves. The six remote First Nations are only accessible by plane throughout most of the year. For a few weeks each winter a temporary road is constructed on the frozen lakes and across the Canadian Shield to haul in supplies of fuel and construction materials. Five of the First Nations are permanent (year-round) communities. McDowell Lake First Nation only has seasonal residents conducting traditional lifestyles of hunting and fishing as they work to develop their local infrastructure.

Fort Severn, a Cree community in Treaty 9, is the northernmost settlement in Ontario located on the shore of the Hudson Bay and the former location of the first fur-trading fort in Ontario. The other five KO First Nations—Keewaywin, Deer Lake, North Spirit Lake, Poplar Hill and McDowell Lake—are Oji-Cree and Ojibway communities located in Treaty 5 along the Western Ontario border shared with Manitoba. Both Treaty 5 and Treaty 9 include education as a treaty right. In the KO communities, education, both formal and informal is recognized as a right and has a very high priority for First Nations (AFN, 2010; Walmark, 2010).

The total on-reserve population in the five permanent communities is approximately 2,900 with another 850 members living off-reserve. The on-reserve population is very young, with approximately 50% of the people under the age of 18 (AANDC, 2014). The five year-round communities all have K–8 elementary schools with the Deer Lake School going to Grade 10; Deer Lake is the largest community with 1,000 residents and the other communities have resident populations between 400 and 500.

The KO tribal council delivers second-level support services and programs directed by the chiefs of these First Nations who make up the Board of Directors for the not-for-profit organization. They are all members of Nishnawbe Aski Nation, their regional political organization, the Chiefs of Ontario, the provincial political organization and the Assembly of First Nations, their national political organization. All of these representative organizations include education as an important policy priority (AFN, 2010; Carpenter, 2010; Carpenter, Gibson, Kakekaspan, & O'Donnell, 2013).

Living in these small, remote communities can be a challenge for the teachers and others who come from far-away places. Most are unfamiliar with the remoteness, the various levels of services, challenging facilities, and the different infrastructure. The First Nations people who live in these communities do so because this is where their families and ancestors have always lived

and where they want to raise their children to know their history and traditions. They have a deep connection to the land and their history of being there (Battiste, 2013).

Many of the challenges of providing education services in these unique remote environments are completely unfamiliar to people living in cities—for example the lack of a reliable power supply. Poplar Hill First Nation needed a new school for many years to replace their 60-year-old, wooden, mold-infested structure. But with their rapidly growing population there was a need to upgrade their existing diesel powered generators to be able to build and support the new school. They worked on their power upgrade requirements for many years and only recently accessed the infrastructure required. Their long awaited new school is now under construction with the opening to take place in the fall of 2016.

Lifelong learning initiatives continue to be a priority in each of these remote communities. Within the local schools, the importance of the local language and traditions is emphasized in local elder teaching programs, traditional activities, and native language classes. Using digital technologies for formal and informal education and distance education makes it possible for everyone in these communities to stay close to their traditional lands and continue participating in the land-based activities that have always been practiced by the people in this region (Beaton & Campbell, 2014). All of these opportunities are possible because of the broadband networks owned and controlled by the KO First Nations and supported by their tribal council KO (Beaton & Campbell, 2014; Carpenter, 2010).

Each First Nation school has an early childhood education program for four and five year olds. Deer Lake and Poplar Hill First Nations work with Health Canada to operate their Headstart education and childcare program for the young children and their families. Health Canada funds a limited number of Headstart programs in First Nations to help prepare young children, ages 3 and up, along with their families for successfully attending school. There is a strong demand for childcare programs and services in all the communities so parents can take on employment opportunities whenever they arise; however, daycare services do not exist in any of the communities. Family and community gatherings and special occasions provide the primary opportunity for the young children to participate, contribute, and learn about the importance of the local traditions and culture.

Along with the local primary school operated by the First Nation, another formal education opportunity includes the Keewaytinook Internet High School (KIHS) that has a classroom in each community for teenagers and young adults. KIHS, operating since 2000, is a digitally enabled Ontario accredited secondary school environment where students can now receive their diploma in their home First Nation (Potter, 2010; Walmark, 2010). Students in KIHS classrooms in each partner First Nation are required to attend school and complete all the required work that is presented online. Student support is provided by the local qualified high school teacher who teaches their area of specialty online to students in the other First Nation KIHS classrooms across the region. The local teacher acts as a local mentor for the students in the community where they live. Specific questions about the school or courses are supported by regional administrative staff and the teachers in the other classrooms using a variety of digital tools.

The Wahsa Distance Education learning centre is also available in these First Nations supporting adult students who are completing their high school program. The digital tools in

these classrooms are often used for other online education courses and upgrading programs. Both the elementary and high school classrooms are well equipped with digital equipment (McMahon et al., 2014). Working with locally trained technicians and classroom facilitators makes it possible for community members to get the support they require to complete formal courses as well as skills upgrading programs. Other regional programs are supported by regional First Nation organizations working together to provide skills training in areas such as band administration, tutor escort, classroom assistant, and teacher trainer, as a few examples. Contact North, Ontario's distance education network, also works with different institutions to provide education programs in these communities.

Videoconferencing is a popular tool used by community members to meet with students, instructors, and administrators when required. Videoconferencing is also used for professional development courses offered by KO, primarily to staff working in the community health centres. Keewaytinook Okimakanak Telemedicine (KOTM) offers videoconference workshops and training for its staff and community members on a regular basis (Carpenter et al., 2013; O'Donnell et al., 2009; O'Donnell, Beaton, & McKelvey, 2008).

Community members use digital technologies for informal and self-directed learning. The use of cell phone services for safety and sharing information while on the land is now an important component for planning these land-based activities (McMahon et al., 2011). Many community members share information online about hunting, fishing, and many other traditional economic activities. From cradle-to-grave, the local residents in these First Nations learn about and share stories and experiences of surviving on the land that they love while living in harmony with the resources available. These stories are passed along from generation to generation forming a rich history connecting everyone and everything in their traditional territories together. Community members are producing videos, sharing pictures, writing about their experiences, and posting stories online to document and record for others to know about their traditional activities and developments (Budka, Bell, & Fiser, 2009).

There have been very few community-based studies of the experiences with digital technologies for employment based in these remote communities. Our study's aim is to contribute new knowledge based on information obtained from adult learners in these remote First Nations about formal and informal training experiences with digital technologies. The two primary research questions considered in this study are:

- How are adults living in five remote KO First Nations using digital technologies for education?
- What are their experiences with these opportunities and their perspectives on digital technologies in their communities?

Participatory Action Research: The Online Survey With KO

[We need] continued upgrading on technology services to be up to the same speed as the cities. And future cell service along existing winter road alignments to be able to call for help for travelers that have vehicle breakdowns or accidents.

—KO community member, online survey, 2014

The chiefs of the KO First Nations passed a tribal council resolution authorizing this research and the publication of the results following guidelines managed by their research institute. Our methodological approach was holistic, community centered and participatory. The chiefs of the KO First Nations established the KO Research Institute (KORI) in 2004 to partner with other research institutions and researchers while ensuring their stories, knowledge, and data are protected and properly represented. Following the principles of OCAP – Ownership, Control, Access, Possession (AFN, 2007; Battiste, 2013; Beaton & Campbell, 2014; Schnarch, 2004), the research, the process, and the data obtained from the study along with the papers and reports produced are owned and controlled by KO and the KO First Nations. Keewaytinook Okimakanak First Nation leaders direct and support their Research Institute as an active partner in the FNI research project that produced this research. KORI staff worked closely with the researchers and the communities to support their participation in the research from start to finish.

Our paper highlights the participatory action research methods central to working with First Nations, as documented by various Indigenous authors (Battiste, 2013; Smith, 2012 Wilson, 2008). Participatory action research (PAR) is even more challenging for most academics due to the time, financial, and personal commitments required. As discussed later in this paper, PAR requires a strong partnership between everyone involved in this work. Establishing trust, transparency, accountability, constructive, beneficial activities, and relationships that work for the community, its members, and the research team takes a very long time (Kindon, Pain, & Kesby, 2007). Professors and most academic researchers are required to teach and be on campus for most of their time. Securing adequate funding to support PAR in far-away, difficult-to-reach communities is always a challenge. Within the academy the entrenchment of colonial and capitalist structures, programs, and policies, makes time a scarce and valued commodity. Too often academics without the required resources and support systems are pressured to publish or perish in a timely manner.

Identifying PAR research activities that will produce useful outcomes mutually beneficial for everyone involved is another time-consuming but essential component of the PAR methodology. Being able to properly conduct the research, obtain the data, and then share the information in a respectful manner according to community customs requires time and financial resources both scarce resources for most academics. Creating and supporting meaningful relationships with the community leaders and members requires a long-term commitment. PAR is under constant pressure to be recognized within the academy as it often challenges “ways of thinking, learning and being in the world” (Kindon, Pain, & Kesby, 2007, p. xxiii). The strength of PAR is its flexible structure supporting methods and theories required in different research environments. First Nations are requiring that academic authors working with First Nations will attempt to describe and write about Indigenous methods and theories while avoiding the one-size-fits-all generalizations often assumed in many publications.

Community-based research (CBR) is one description that some researchers use for PAR. It is always a challenge to find adequate resources, especially the time and money required, to travel, meet, plan, deliver, analyze, fund, report, publish and then start all over again in these expensive remote environments as required by the communities. These and other pressures will be discussed throughout this paper along with the effective use of communication technologies to offset some of these challenges. The only way this research could be delivered using PAR is with intensive use of digital technologies.

Two recent articles about the participatory action research (PAR) methods used in this work were co-authored with First Nation members to detail the theories, methodologies, time and effort required to successfully use PAR in the remote First Nations. Both articles highlight the long-term relationship and local capacity development work required to effectively undertake this research work using the ICT tools and networks put in place by the First Nations (Beaton et al., *in press*; Beaton & Carpenter, 2015).

The work involved in planning, developing, field testing and delivering the survey and the questions with the researchers, KORI, the KO staff, and the KO First Nation researchers was only possible because digital technologies are an acceptable communication tool in these communities (Carpenter et al., 2013). Online meetings with everyone involved in this research began several months before the survey was opened to the communities. It was important to ask the questions and information required by the communities and the KO programs to support their work. Conducting the survey and analyzing the information collected included digitally distributing materials to support the community researchers. Developing local First Nation capacity to create and administer surveys was a desired outcome for this work.

Discussions and planning for the survey began in the spring of 2013 with all the partners involved in the research. The KO Research Institute (KORI) and KNET had worked with university researchers in 2011 to conduct an online survey involving many First Nations across Northwestern Ontario working with KNET. KO was interested in doing another survey with just their member First Nations to assist the community leadership and program managers in their planning for effectively addressing the needs and priorities of the people in the communities. The online survey was open for two months beginning in February, 2014. Community researchers were contracted to support community members to complete the online survey containing 27 questions. The research team designed the survey to gather both quantitative and qualitative information so community members could share their ideas about local programs and services.

When the survey was completed, we worked with our partners to prepare reports for the community that were presented in person and discussed with community members and leadership, and the KO program managers. Follow-up interviews and reports using the survey information and meetings with each of the KO First Nations were conducted during the summer of 2014 when we traveled into each community. Future papers, research, and reports are anticipated outcomes from these community visits. These questions and the feedback provided from the survey results support local community and regional program and service planning and developments addressing local needs and priorities. In the discussion that follows the next section containing the survey findings, we examine how these research findings relate to the decolonization work being undertaken in these First Nations.

Survey Results

I need my cable line hooked up in order to get Internet because I am doing online courses. I have to go next door where they do have the Internet.

—KO community member, online survey, 2014

Demographic Profile of Respondents

This article considers only the people living most of the time in the KO First Nations and the information they provided in the survey about education and their use of digital technologies.

According to the latest government records, the total on-reserve population in the KO First Nations is 2,903 (AANDC, 2014). Of these, about 50% are under the age of 18 and were therefore ineligible to do the survey, leaving approximately 1,450 eligible adults; of these, 209 started the survey and answered some of the questions. This represents an overall 14% response rate from the KO on-reserve adult population. Of the 209 people who started the survey and live in the KO First Nations, only 15 were not KO First Nation band members. These could be band members of other First Nations or non First Nation people (teachers, nurses, etc.) living in the community.

One of the communities had a low number of respondents, likely the result of community trauma because of three suicides of young people during the 8-week period the survey was open. In this community, there were 17 people who started the survey with 14 surveys being completed with an adult population of approximately 250 people representing 7% of the people. The high number of suicides in these small communities is a tragic outcome of the challenges of living in a colonial relationship (Palmater, 2011). The impact of suicides in these small remote communities is severe.

Respondents represented a range of ages, from 18 to 69, with the majority 40 years or younger. More than 43% had completed less than a high school diploma, about 19% had completed high school, and the remainder had some post-secondary education or qualifications. This formal education profile is representative of the on-reserve population, where many do not complete high school for a variety of reasons. It should also be noted that the number of adults going back to complete their high school qualifications is increasing, largely due to the online secondary school programs on-reserve such as Wahsa and KIHS (Potter, 2010; Walmark, 2010).

Most of the survey respondents (62%) worked full-time or part-time in their community and most (79%) rarely or never travel outside their community. Among the common regular activities indicated were taking care of children, sharing skills and teaching others, cooking wild meat or local food and hunting, trapping and fishing.

How Respondents Use Digital Technologies for Education

To answer the research question, what online education opportunities are the people living in these five remote KO First Nations using, we are including some of the comments provided to a number of the survey questions. Completing the survey provided community members with the opportunity to provide information about their use of these tools and to share their thoughts about what they would like to see and the problems they are experiencing. They provided both positive and negative feedback on the existing learning and educational opportunities along with constructive recommendations about what is needed to support digital technologies in their community. There are many references to KIHS throughout the comments since most people are familiar with this online learning opportunity in their community.

The Internet has become a resource for learning something new. When asked what they do when they want to learn something new, most respondents (83%) indicated that they use social media sites (MyKnet, Facebook, etc) for this purpose every day. Often (daily or weekly) they search the web (84%) to learn something new, while others go online to ask a friend (66%). Daily or weekly they watch a video to learn how to make something or complete a task (45%). Every day, respondents share information using social media with someone living in same community (61%), with other Facebook users (61%), another KO First Nation (41%), another

community in northwestern Ontario (38%), living elsewhere in Canada (34%), with other MyKnet.org users (21%), and another country (17%).

The survey responses show the respondents are using online tools extensively for informal learning and sharing information. About half (51%) said they share skills or teach others online often (daily or weekly) while only 8% indicated they never undertake this activity. Telling or writing stories online is often done by 24% of the group with 19% never doing this activity. 18% of the respondents often share their art or music online, and 48% listen to music or look at art online created by Aboriginal people. Daily or weekly activities included sharing news and stories on social media (57%), reading stories about First Nations (51%), searching for information about First Nations and Aboriginal people online or posting announcements about different events (42%).

Videoconferencing is recognized as a valuable tool for the people in the communities. One respondent shared the following:

For those parents who cannot travel to see their child who is in high school [in a city], there should be video open to the parents...to get a chance to catch up on their child progress and if he/she is having problems out there. Not to lose that closeness between a parent and a child. (KO community member, online survey, 2014)

At the same time, several community members recognized the need for more support to use videoconferencing effectively. One wrote, “Training should be taught to full time employees how to use video conferencing.” The responses also highlighted that some online training opportunities are not well known in the communities. For example, one person suggested, “Ongoing training for health staff should be offered through video conferencing.” In fact, KO offers a comprehensive program of ongoing training for health staff via videoconferencing. This finding points to the need for more effective promotion of these opportunities to community members.

The Keewaytinook Internet High School (KiHS) is the most visible, long lasting, and obvious online education opportunity in the five KO communities and it is clear from the survey that it has a big impact in the communities. Many of the comments referenced KIHS as a delivery model for expanding educational opportunities. Only 2% of respondents did not know about KIHS and 16% use the service daily. Most respondents (80%) indicated that a member of their family is or has been a KiHS student. More than half (58%) believes that KiHS students receive an excellent education (37% did not know), and 69% will recommend KiHS to someone else in the next year. Sixty-eight percent believe KiHS should be expanded, with only 1% believing it should not.

As discussed, other formal education environments in the KO First Nations that make extensive use of digital technologies include the Wahsa Distance Education Centre and the local school. These facilities and their use of digital technologies are included in the survey by the questions concerning where the people are working and how they are using these tools. Additional information is provided in the following section containing qualitative feedback from the survey concerning their learning and education experiences.

Respondents' Experiences With Online Learning and Education Opportunities and Their Perspectives on Digital Technologies in Their Communities?

Respondents made supportive comments about KiHS and its online high school program in different sections of the survey. Many of the respondents are familiar with this online education program because it is available in each of the First Nations. For example, one respondent wrote:

I like the KiHS [because] my daughter is attending the local KiHS. She is still too young for us to let her go out to high school by herself. I also like the Internet service—it is an easy way to communicate with family in other communities. (KO community member, online survey, 2014)

Along with the positive there are critical comments about some of the challenges in trying to operate these types of online services. One community member wrote, "KiHS teachers need more support in our community. They arrive highly motivated and become discouraged because they are entirely independent in running their programs." Another community member wrote "No more advanced technology, it is scary!"

But there is always the need for improvements as several people wrote about the need for better, faster Internet, improved technical support services along with regular training for staff. A community member's final comment on the survey highlights the ongoing need for more information:

Faster Internet...Trained / Educated Workers...If there are any new technology products/services the community should get workshops/presentations/information sessions on the product or service from knowledgeable workers. Not everyone is familiar with all the services maybe an open house to present what we have so far (advertised so we all know). (KO community member, online survey, 2014)

Comments about other educational opportunities highlight the range of development possibilities that local digital technology supports. Several people wrote about the need for post-secondary programs with comments such as "Access to online college/training programs/courses like KiHS to go with the new school coming up. We do not have the luxury of being able to walk out the door and have access to these services." These comments indicate a need for more information and support so community members know about available online post-secondary opportunities and what resources are required to access them.

The survey successfully encouraged creative individuals to share their visions for their communities as the following comment demonstrates:

I would like to see a job that would take kids and other age people to go out into a camp. I would like to have a centre or some building of some sort that would hold educational equipment like flight simulators, small shops for carpentry and mechanics, something for them that they can learn and use as a tool to become a role model for others. (KO community member, online survey, 2014)

Others wrote about the need for equitable services and the opportunities it would bring for future developments. "I would like true high-speed Internet that allows proper

downloading/uploading and streaming videos. Access to this speed would allow learning of new things in many new ways.”

Discussion and Conclusions

All technology should always be up to date and [need to upgrade digital] to supply the communities with access to all modern technology

—KO community member, online survey, 2014

First Nation elders and leaders in these remote communities understand how digital technology can be a double-edged sword as they develop and manage these communication tools (Paush, 2015). Similar concerns and awareness were evident when the leaders supported the introduction of radio and television into their communities more than fifty years ago. The desire to share their stories and access the information improving local safety and expanding the choices for community members are important factors for supporting the introduction of digital technologies in their communities.

Decolonization efforts require people to be on the land in an informed and meaningful manner (Simpson, 2014, Tuck & Yang, 2012). Digital technologies can bring more immersion into Western culture while at the same time providing the means to be sustainable on the land (Pannekoek, 2001; Pasch, 2015). It is a delicate and conscious balancing effort to be aware and concerned with what is actually being undertaken by the elders and leaders. Owning and controlling these digital tools and the network connections is an important aspect of managing the content and messages being shared online. Influencing and producing local material in the local language is another opportunity being undertaken by different Indigenous producers across the country described by the survey participants.

The survey responses and data highlight how the people working, learning, sharing, and surviving in these remote communities are living very close to the land (Simpson, 2014). The theme of doing activities on the land including harvesting, hunting, trapping, fishing, canoeing, and camping was common with most people completing the survey. For the people living and surviving in the KO First Nations, “decolonization is not a metaphor”—it is their way of life and they are working hard to assist their children and future generations to continue their traditions, language, and culture (Battiste, 2013; Tuck & Yang, 2012). The survey responses demonstrate how digital technology offers people the ability to stay in their communities and learn what they need to live sustainable lives in these challenging environments. Access to and protection of traditional lands, languages, and local lifestyles is an ongoing challenge as colonial governments continue to impose capitalist policies supporting the transfer of their lands and resources to corporate interests in far removed urban centres (Alfred, 2009; Barker, 2009; Corntassel, 2012; Coulthard, 2007; Donald, 2009; Grande, 2004).

When responding to the online survey, the people living in these remote communities continually supported and wrote about their involvement with learning, education, and other activities that demonstrate their strong relationship with the land and all its resources. Their historical and contemporary commitment to learning about and working in these challenging environments supports the decolonization work being undertaken by everyone in the communities (Simpson, 2014; Snelgrove, Dhamoon, & Corntassel, 2014).

The critical theoretical analysis challenges the established theories about the requirements for education opportunities in remote communities and especially remote First Nations. The study provides evidence of First Nations using digital technologies to support ownership and control of their own educational opportunities and the development of innovative solutions addressing local needs and priorities. KIHS is an excellent example of a locally facilitated First Nation secondary school delivering courses and support services resulting in high school graduates celebrating their graduation in their own home community, surrounded by family, friends, and community members (Potter, 2010; Walmark, 2010).

Using this critical theory lens, our study strongly suggests that the people living in the KO First Nations are busy doing the work required to ensure their educational opportunities as well as their education system are locally owned and controlled. Land-based activities, language programs and learning from the elders and traditional people have always existed in these communities (Simpson, 2014). Now the adults—and everyone in these communities, including children, young people, parents and families—have choices to continue to live land-based lifestyles using digital technologies and locally-owned and managed infrastructure that supports initiatives that the people require.

Challenging contemporary regimes of truths and hegemony is now possible as remote and rural First Nations accessing digital technologies to create and distribute their own stories and experiences in various online media (Carpenter, 2010). As Budka (2012) shows in his research, First Nations are using social media to effectively share their stories and create their online voice. The challenge will always be finding the listeners and learners who are willing to consider other truths and ways of seeing our relationship to the land and all life forms. Land claims, Aboriginal and treaty rights, reconciliation, resurgence, responsibilities, relationships—all require immediate corrective measures by governments and settlers (Battiste, 2013; Corntassel, 2012; Snelgrove, Dhamoon, & Corntassel, 2014; Tuck & Yang, 2012; Palmater, 2011). Current educational hegemonies need to change to reflect a balanced understanding including both Indigenous people and settlers as everyone begins to learn and share past and contemporary experiences and understandings. Incorporating First Nation history as detailed by First Nation regimes of truths will help shape a more cooperative, inclusive, and collaborative learning and sharing environment for all Canadians. The use of digital technologies to support educational opportunities in remote First Nations as highlighted in this study is one of the many steps that are required for decolonization to occur across Canada. Celebrating the successes and acknowledging the people in these challenging environments helps community members continue their important work.

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