**First Peoples Child & Family Review**
**An Interdisciplinary Journal Honouring the Voices, Perspectives, and Knowledges of First Peoples through Research, Critical Analyses, Stories, Standpoints and Media Reviews**

# Indigenous peoples and empowerment via technology

Katalina Toth, Daisy Smith and Daphne Giroux

Volume 13, Number 1, 2018

URI: https://id.erudit.org/iderudit/1082388ar
DOI: https://doi.org/10.7202/1082388ar

See table of contents

Publisher(s)

First Nations Child and Family Caring Society of Canada

ISSN

1708-489X (print)
2293-6610 (digital)

Explore this journal

Cite this article

Toth, K., Smith, D. & Giroux, D. (2018). Indigenous peoples and empowerment via technology. *First Peoples Child & Family Review*, *13*(1), 21–33. https://doi.org/10.7202/1082388ar

Article abstract

*This article considers how increased access to communications technology could improve the lives of Indigenous peoples in Quebec. The authors describe the digital divide between Indigenous and non-Indigenous peoples in Quebec with respect to the speed, reliability, and cost of communications infrastructure, and how existing barriers can be overcome. The authors describe some ways in which the use of technology has already been incorporated by Indigenous communities to support education and healthcare, and how bridging the digital divide can be a tool to increase access to these fundamental services. Although technology is not a panacea, it has the potential, if implemented in accordance with Indigenous values, traditions, and goals, to empower Indigenous communities, particularly those in remote regions of Quebec, and alleviate some of the difficulties associated with accessing education and healthcare.*

volume 13 | number 1

First Peoples Child & Family Review 2018

An Interdisciplinary Journal

*Honoring the Voices, Perspectives and Knowledges of First Peoples through Research, Critical Analyses, Stories, Standpoints and Media Reviews*

# Indigenous peoples and empowerment via technology[1]

Katalina Toth,[2] Daisy Smith,[3] and Daphne Giroux[4]

[2] The Sacred Heart School of Montreal, Montreal, Canada
[3] The Sacred Heart School of Montreal, Montreal, Canada
[4] The Sacred Heart School of Montreal, Montreal, Canada

Corresponding author: Katalina Toth, katalinaltoth@gmail.com.

## Abstract

*This article considers how increased access to communications technology could improve the lives of Indigenous peoples in Quebec. The authors describe the digital divide between Indigenous and non-Indigenous peoples in Quebec with respect to the speed, reliability, and cost of communications infrastructure, and how existing barriers can be overcome. The authors describe some ways in which the use of technology has already been incorporated by Indigenous communities to support education and healthcare, and how bridging the digital divide can be a tool to increase access to these fundamental services. Although technology is not a panacea, it has the potential, if implemented in accordance with Indigenous values, traditions, and goals, to empower Indigenous communities, particularly those in remote regions of Quebec, and alleviate some of the difficulties associated with accessing education and healthcare.*

***Keywords:*** *technology, digital divide, education, healthcare, Quebec*

## Introduction

Equality rights are at the centre of the *Canadian Charter of Rights and Freedoms* (Department of Justice, 2017). However, there is an enduring inequality between Indigenous and non-Indigenous peoples in all aspects of life in Canada. Below, we specifically address some problems Indigenous peoples in Quebec encounter when trying to access basic services like technology, education, and healthcare. We propose that improved access to technology can address some of the issues in education and healthcare in a way that is consistent with Indigenous goals and priorities.

[1] An earlier version of this article was submitted by the authors to Olympes de la Parole, a secondary school competition organized by the University Women's Club of Montreal Inc., for which the authors were awarded the accolade of *best essay*.

## The digital divide

Indigenous peoples constitute 5% of the population in Canada, or 1.6 million people (Statistics Canada, 2017). Approximately 180,000 Indigenous people in Canada live in Quebec. According to the Government of Quebec, there are 55 Indigenous communities within the province (Secrétariat aux Affaires Autochtones Québec, 2018). Some of these communities, like Kahnawake, are within reach of metropolitan centres like Montreal, but many are in remote regions, stretching from James Bay all the way to Nunavik.

The digital divide is "the very large difference in opportunity between those who can easily access computers and the internet and those who cannot" (Oxford Learner's Dictionary, 2018). An early survey of internet access for Indigenous communities in Canada found that 37% of residents had no internet access at all, and 42% used dial-up internet (Aboriginal Canada Portal, 2004; Smillie-Adjarkwa, 2005). The latter is a type of internet that is one-tenth the speed of the slowest broadband connection and cannot be used if someone needs to make a phone call from the landline simultaneously. Ten years after this survey was conducted, access is still very limited: the Canadian Radio-television and Telecommunications Commission (CRTC) confirms that in Quebec, Indigenous peoples only have access to terrestrial broadband internet in urban areas. This is the kind of internet that is available to 94% of private dwellings in Canada (CRTC, 2016; CRTC, 2017). For a large proportion of Indigenous people that are in remote regions, the main access to internet is by satellite and has a maximum speed of less than 1.5 megabits per second (Mbps) (compared to speeds of 30 Mbps for basic high-speed in Montreal). Further, it frequently disconnects, making high bandwidth applications such as downloading large files and video-conferencing difficult to impossible (CRTC, 2016; CRTC, 2017).

There is hope that in the next few years remote communities will have access to some of the internet services metropolitan areas take for granted. For some Cree communities in Northern Quebec, this situation recently improved with a collaboration between the Canadian federal government, Distributel, and Cree-owned Eeyou Communications. Together, they launched broadband terrestrial high speed for the Northern Cree communities near James Bay (Larochelle, 2018). For the Inuit in Nunavik, upgrades to fibre optic connectivity are forthcoming (Rogers, 2017). The Kativik Regional Government obtained $15 million of support from the Canadian federal government (Government of Canada, 2017) and financing from the Quebec government to: 1) extend fibre optic lines to communities along the coast of Hudson Bay by 2019; 2) install fixed wireless radio tower links to fibre optic networks farther south; 3) increase bandwidth for communities served only by satellite; and 4) provide the infrastructure for 3G cell phone service, a first in Nunavik (Rogers, 2017).

However, an issue with internet access, whether by broadband terrestrial or by satellite, is cost (Smillie-Adjarkwa, 2005). For example, the people of Kahnawake reserve in Montreal can access high speed internet through broadband terrestrial connection, but the median household income in Kahnawake was only 70% of the median household income in Montreal ($37,000 versus $53,000) (Kahentineson-Jacobs, 2011; Statistics Canada, 2017). Thus, internet access is significantly less affordable for families in Kahnawake. In rural and remote areas, the cost of internet is much higher and the speeds are much slower (Saltzman, 2016). Monthly data charges in remote regions frequently run into the hundreds of dollars for slow service and low data caps (Roth, 2014).

One solution to the burden of cost for individuals could be creating public spaces equipped with computers and free access to internet. In Quebec, communities typically set up computer access within public libraries, which is a Western model. Creating a model that incorporates Indigenous approaches to knowledge-sharing and community could allow technology to reinforce community and culture rather than undermine it through Westernization. An Indigenous community that has successfully integrated technology and used it to strengthen their culture is the Maori of New Zealand. When the Maori began to adopt technology, they set up computers and Wi-Fi in what were called virtual *Marae*, where *Marae* were a central place for community and knowledge-sharing in Maori culture (Greenwood, Harata Te Aika, & Davis, 2011). Thus, Maori culture incorporated technology into existing social structures rather than adopting Western models. In Inuit culture, the *qargit* were traditional social institutions where Inuit families gathered and shared oral traditions but were largely dismantled when Western culture introduced schools and churches (MacLean, 2004). Recently, a Canadian teacher won the Global Teaching Prize for her success as an educator in Nunavik (Batrawy, 2017). One of her key insights was that while Western cultures value isolated, abstract learning that takes place in schools where families are not involved, the Inuit model of learning is applied learning incorporated into the fabric of family and community (Wang, 2017). A similar observation had been made in a study of First Nations cultures that found pedagogical approaches emphasized "learning through observing and doing, [and] learning through authentic experiences" (Battiste, 2002, p. 18). This includes understanding that "meanings are to be found in the social world of individuals, families and communities" (Battiste, 2002, p. 20). Providing free, high-speed access to technology in a community meeting place that unifies learning, meetings with elders, children's centers etc. can strengthen rather than undermine Indigenous cultures. It can further provide additional opportunities for Indigenous peoples to bridge distance divides, develop economic opportunities, and otherwise utilize technology in a way consistent with self-determination.

## Access to education

Education is an area where computer technology has the potential to significantly improve the lives of Indigenous peoples. Educational attainment is a key determinant of health and well-being (National Collaborative Center for Health and Well-being, 2017), and a parent's education level is a critical predictor of a child's future success (Davis-Kean, 2005). Thus, it is critical that education systems be optimized to foster student success. Currently, 60% of the Indigenous population in Quebec do not graduate high school compared to 26% percent of the non-Indigenous population (Arriagada, 2016). Interventions that increase graduation rates can help by providing people with more employment opportunities and by passing on social, intellectual, and economic benefits to their children which would in turn increase their chance for academic success.

An examination of the educational experiences on reserves can shed light on the troublesome graduation statistics. Funding for schools on reserves is inadequate. The Federal government invests 30% less education funding per Indigenous student than other students in Canada (Porter, 2016). The level of government funding provided to schools is insufficient to pay for educational necessities such as a library, gym equipment, textbooks, and computers (Syed, 2018). Without the resources that other students in Canada take for granted, it is more challenging for Indigenous students to succeed in school.

Another difficulty is the remote location of many Indigenous communities. Even for students who finish high school, for many, higher education is physically unattainable. Most Indigenous communities are not near post-secondary institutions, so pursuing a higher education often involves leaving family, friends, and a way of life to go the city where cultural barriers and loneliness are major challenges (Billson & Mancini, 2007). Creating additional difficulties, for many young Indigenous women moving away can mean leaving children behind; about one quarter of Indigenous women have children between the ages of 15 and 24 compared to 8% of non-Indigenous women (Statistics Canada, 2017b).

Increased access to communications technology has the power to address some of the challenges in education. Greater availability of computers in schools and in the community would provide access to distance learning, permitting residents to remain in their communities, and to gain the necessary training to meet individual and community needs. In a recent review of technology in northern Canada, Alexander (2011) describes an effect of increasing access to technology for Inuit:

> *Technology has played a key role in graduating the first 21 Inuit students in . . . the first graduate degree program offered in Nunavut, enabling Inuit students to study part-time through face-to-face courses in two communities . . . and critically important, through online learning* (Alexander, 2011, p. 86).

Making education accessible without forcing people out of their community respects the relationship between Indigenous people and the land, and provides hope by making the route to change visible to those in the community. The Masters of Education program that Alexander (2011) describes works with educators to improve local leadership in education. The program specifically uses decolonizing methodologies to ground the programs, including recognition of the right to self-determination and recognition of the marginalization of Indigenous cultures, languages, traditions, and worldviews (Walton et al., 2009). They do this in part by creating a learning environment that is bilingual and bicultural, so that Indigenous students feel validated and recognized. In the past the goal of Indigenous education was, as stated by Canada's first Prime Minister, to "take the Indian out of the child" (Macdonald as cited in Fine, 2017, para. 6). Now, in at least some instances, the goal is explicitly to strengthen Indigenous identity because a strong child is more likely to be a strong youth and adult.

Improved access to instruction in technology and programming can empower Indigenous people to reinforce and disseminate their culture by creating their own online content. Carpenter et al. (2016) observe that, "By generating their own digital visibility and legibility, Indigenous communities become 'present' online, and thereby exert increasing control over the terms of their own representation" (Carpenter et al., 2016, p. 4) rather than being represented by others. Recently, a pilot project by Pinnguaq Association explored this approach (Frizzell, 2017). A week-long coding workshop was run to teach Inuit children to use open source software to create their own online content, that is, to see computers as tools to create rather than passively consume (Frizzell, 2017). After the workshop, the children were given refurbished laptops from the Canadian federal government that came preloaded with Windows 10 and programming software so they could continue using it without having to download over unreliable internet connections. In one week, the workshop participants were able to record traditional throat singing and create remixes as well as develop a computer game (Frizzell, 2017). If courses in programming, web development, and computer literacy were widely accessible to Indigenous children and adults, they could develop a greater online presence that could be used to strengthen their culture,

foster connections with communities, and create business opportunities. They can also use technology as a tool of advocacy to make aspects of their situation better known, and thus gain the public's support in lobbying the government for meaningful interventions.

Access to technology in education can also be used to incorporate Indigenous languages into the classroom. Education in one's native language is recognized by the United Nations as an Indigenous right (United Nations, 2008). Students educated in a system that includes their language and culture do better academically and are more likely to stay in school (United Nations Educational, Scientific and Cultural Organization, 2012). In Quebec, First Nations and Inuit continue to speak Indigenous languages: 40% of First Nations people in Quebec speak an Indigenous language as their mother tongue and can carry on a conversation in that language and 90% of the Nunavik residents speak Inuktitut (Statistics Canada, 2016). A survey of Indigenous youth and adults found that an important priority was Indigenous language instruction by Indigenous language speakers (Indigenous and Northern Affairs Canada, 2017). However, in many Indigenous schools, teachers are non-Indigenous, so there is a lack of bilingual teachers and teaching resources, and students receive minimal instruction in their native language (Indigenous and Northern Affairs Canada, 2017).

In their report on Indigenous languages in Canada, Carpenter et al. (2016) argue that "[d]igital technologies do not, cannot and will not save languages," but added that "speakers might use [technology] to do work that will" (2016, p. 4). Technology has the potential to support language instruction in the classroom. For example, interactive applications to teach syllabics to children ages 3 to 7 have been developed for iPads (CBC News, 2017). iPads preloaded with these applications can be provided to childcare centers to prepare students to begin writing and to reinforce the value of their culture. For older children and adults, the Nunavut government and Pirurvik (an education center in Iqaluit) recently released applications that allow writing in Inuktitut syllabics on iPads and iPhones (CBC News, 2015). If Indigenous classrooms and community centers were provided with computers and iPads preloaded with syllabic keyboards, students could use traditional syllabics for their writing in school and for online communication in social media. This would make syllabic writing relevant in a way that it cannot be when it is not included in the school curriculum and when it is not used in electronic communication. Access to these kinds of technological advances could strengthen the use of Indigenous languages in schools, tighten the connection between the school curriculum and the students' culture, and support Indigenous languages becoming more relevant to the younger generations.

## Access to healthcare

Indigenous peoples in Quebec face significant barriers to accessing healthcare in their communities. In Northern Quebec there is one 29-bed hospital serving the Northern Cree, while Nunavik is served by two small health centers that have inpatient beds. Both have limited capacity to deal with major health problems. For example, Chisasibi hospital in James Bay does not offer surgery, cancer treatment, childbirth services, or diagnostic magnetic resonance imaging (MRI) (Cree Board of Health and Social Services of James Bay, 2015; Ordre des Sages-Femmes de Quebec, n.d.).

From Nunavik, 8,000 flights a year are made to Montreal by patients and an accompanying family member to access health care (Ross, 2018). These trips are profoundly disruptive for families. A nurse working in Nunavik reported that many of these visits are necessary because nurses do not have

access to medical expertise that would allow them to decide definitively whether the person can be treated safely on site, so they err on the side of caution and send patients south (Ross, 2018). If remote Indigenous communities had access to more technological advances like remote patient monitoring and teleconferencing with specialists, it could significantly reduce the need for these trips.

High-risk pregnancies and teen pregnancies are another significant issue in Indigenous health that is exacerbated by reduced access to health care. Indigenous peoples have higher rates of pregnancy complications such as high blood pressure, diabetes, bleeding, extreme birth weights, and greater rates of premature birth and infant mortality than non-Indigenous people in Canada (Duhaime, Caron, & Levesque, 2015). Infant mortality among Indigenous populations is roughly three times the national average in Canada, and in Nunavik it is four times the national average (Duhaime et al., 2015). Prenatal care has a high correlation with positive pregnancy outcomes (Partridge, Balayla, Holcroft, & Abenhaim, 2012). A maternal health survey found that Indigenous women are four times more likely to receive inadequate prenatal care than non-Indigenous women (Heaman, Gupton, & Moffatt, 2005).

In isolated Indigenous communities, mothers are often transported south to give birth. For example, in the communities of the Cree Territory of James Bay, mothers are transported south many weeks in advance of their due date and give birth in Val D'Or, almost 1,000 kilometers from home (Cree Board of Health and Social Services, 2017). This would be traumatic for any mother, but for Indigenous mothers this can be compounded by language and cultural barriers, negative stereotypes about Indigenous people that can influence hospital experiences, and the intergenerational trauma associated with the government's history of removing Indigenous children from their families (Ross, 2018). However, telehealth interventions for high-risk pregnancies have been implemented successfully (Odibo, Wendel, & Magann, 2013). These two-way video-feeds allow midwives in remote locations the ability to access the advice of a doctor, allows the doctor to conduct fetal monitoring, and reduces the need to transport mothers for childbirth (Odibo et al., 2013). With the improvement of communication technology, medical video-conferencing can be implemented in all remote Indigenous communities in Quebec. Additionally, when access to high-speed connectivity is implemented, subsidized provision of iPads or tablets to hospitalized individuals and their families could reduce the trauma of prolonged separation for health care by allowing families to stay connected through Skype, Facetime, and other face-to-face communication applications.

Another vital aspect of healthcare that can be addressed with technology is substance abuse. Substance abuse is a common health problem among Indigenous peoples (Chansonneuve, 2007). Drug abuse rates are four times higher within Indigenous communities than non-Indigenous communities (Fortin, Bélanger, Boucher, & Muckle, 2015). The Kahnawake Health Report identifies substance abuse, including alcohol, as the number one health concern of the community, with current health services on the reserve being inadequate to deal with the heavy caseload (Kahentineson-Jacobs, 2011). Kahnawake chief Carl Horn, speaking about the opioid epidemic said: "We're moving on from marijuana, to the point where kids are crushing oxycodone, snorting it and injecting it" (Horn, 2016 as cited in MacArthur, 2016, para. 4). He continued; "It's a serious issue in our community, and it's getting worse and worse" (Horn, 2016 as cited in MacArthur, 2016, para. 4). This issue is not limited to the urban Indigenous populations: the James Bay Cree report that almost half the population binge drink several times a month (Cree Board of Health and Social Services of James Bay, 2005). From the physical point of view, alcohol causes

cirrhosis of the liver and more generally, is a leading risk factor for death in Canada (Public Health Agency of Canada 2015). From a social point of view, alcohol addiction can have devastating effects on educational and occupational achievement, family structure, and financial resources (Government of Canada, 2016). Although addiction is difficult to address through technology, access to technology can encourage people who are trying to abstain or remain sober to gain support from online resources. For example, Our Spirit: Sober Strong provides online support, contact, and friendship for Indigenous people trying to stay sober (Native American Indian General Service Office of Alcoholics Anonymous, 2018). Telehealth interventions can be effective in addiction treatment (Ohinmaa, Chatterley, Nguyen, & Jacobs, 2010) and could allow the six addiction treatment centers for Indigenous people located in Quebec (Government of Canada, 2018a) to extend their reach; currently they offer only on-site treatments, and have web presence that acts primarily as online pamphlets. Extending their reach through telehealth and online support groups would allow Indigenous people living in remote communities to access resources that are otherwise scarce and inadequate, even in urban regions. Although in many remote regions, telehealth two-way conferencing is difficult due to connection speed and inconsistency (Whiteduck, Tenasco, O'Donnell, Whiteduck, & Lockhart, 2012), investment in video conference services optimized for satellite connections has made video conferencing possible in Nunavut (Zarate, 2010). Further, the Telehealth Network has a library of recorded webcasts on topics relevant to Indigenous health (First Nations Telehealth Network, 2018) which make lower demands on bandwidth than videoconferencing, and can be accessible as soon as remote networks are upgraded and communities are provided with computers in publicly accessible spaces. Finally, Indigenous peoples can use the internet to find information, such as online hotline services that support people during the crises often associated with addiction.

Depression and suicide are also critical issues for Indigenous health. Suicide is the number one reason for death among Indigenous peoples aged 44 and younger (Centre for Suicide Prevention, 2013). One hundred and twenty-six out of 100,000 Indigenous males aged between 15-24 commit suicide compared to 24 out of 100,000 non-Indigenous males in Canada; for Indigenous women the rate is 35 out of 100,000 compared to five out of 100,000 for non-Indigenous women (Centre for Suicide Prevention, 2013). Suicide rates among Inuit are 11 times higher than the national average in Canada, and Inuit rates of suicide are among the highest in the world (Kral, 2016). It has been shown that communities with some type of self-government, ownership of traditional lands, local control of healthcare, and education and community facilities that preserve culture have lower suicide rates (Centre for Suicide Prevention, 2013). Therefore, an important factor in reducing mental illness that leads to suicide is recognizing and respecting Indigenous peoples' power of self-governance, supporting them in the development of autonomy, and working with them to strengthen their communities which were weakened by colonization. Government in the modern age requires technology: one cannot create a budget, administer justice, track health care outcomes or communicate with constituents without the internet and computers.

But there are many young people in Indigenous communities who need help now. In remote Indigenous communities, therapists are few and are hard to reach. Jordan's Principle is a child first principle unanimously supported by the House of Commons in 2007 and guarantees First Nations children – and soon Inuit children (Rogers, 2018) – equitable access to public services such as health care and education (Government of Canada, 2018b). However, the gaps in health care access remain chasmic. Between July 2016 and February 2017, only 4 children in Quebec were identified for funding for care

made available through Jordan's Principle, a weak record that was attributed to a lack of infrastructure to identify underserved children (Tasker, 2017). Increased access to technology would allow case workers to identify children and enter information to central databases to speed up the process. Technology might also help address the shortfall of psychological services in remote communities: for example, Nunavik has only two psychologists for 14 communities (Commission des droits de la personne et des droits de la jeunesse, 2007). Technology allows those in remote locations virtual access to mental health professionals and potentially combat feelings of depression and isolation by allowing people to connect with online support groups.

## Summary

Indigenous peoples in Quebec face enormous barriers obtaining education and healthcare, barriers that are compounded by the digital divide. In education, improved computer technology could increase access to higher education in remote regions and strengthen Indigenous cultures. Web development and programming courses could help Indigenous people share their language and culture, create economic opportunities, and provide a means of airing grievances and contacting government officials.

Improved computer technology can also be utilized to address some of the many health care issues Indigenous peoples encounter. Internet access can: allow consultation with specialists in remote regions via telehealth applications; reduce the need for transportation to urban centres for treatment; improve Indigenous peoples' ability to influence government health policy; strengthen connections among Indigenous communities, and; create more opportunities to access online support for issues such as addiction, depression, and suicide prevention.

Computer technology is by no means a perfect, all-encompassing solution to the various and abundant issues encountered by the Indigenous communities in Quebec. However, the digital divide has played a vital role in keeping Indigenous people in situations of vulnerability and powerlessness. Closing the digital divide would help move Quebec society in the direction of equal access to education and health care, both of which are universal human rights (United Nations, 2015), and could ultimately help secure the right of Indigenous self-determination (United Nations, 2008).

## References

Aboriginal Canada Portal. (2004). *2003 Report on Aboriginal Community Connectivity Infrastructure*. Retrieved from http://digitalaboriginals.ca/acp/site.nsf/vDownload/connectivity2003report/$file/2003ROAC.pdf

Alexander, C. (2011) From igloos to iPods: Inuit Qaujimajatuqangit and the internet in Canada. In P. R. Leigh (Ed.), *International Exploration of Technology Equity and the Digital Divide: Critical Historical and Social Perspectives* (pp. 80-105). Charlotte NC: Internet Age Press.

Arriagada, P. (2016). First Nations, Métis and Inuit Women. Retrieved from http://www.statcan.gc.ca/pub/89-503-x/2015001/article/14313-eng.htm

Batrawy A. (2017, April 14). Canadian Maggie McDonnell wins $1-million Global Teacher Prize. *The Globe and Mail*. Retrieved from https://www.theglobeandmail.com/news/national/canadian-maggie-macdonnell-wins-1-milli on-global-teacher-prize/article34342898/+&cd=1&hl=clnk&gl=ca

Battiste, M. (2002). *Indigenous knowledge and pedagogy in First Nations education: literature review and recommendations*. Retrieved from https://www.afn.ca/uploads/files/education/24._2002_oct_marie_battiste_indigenousknowledgeandpedagogy_lit_review_for_min_working_group.pdf

Billson, J. M., & Mancini, K. (2007). The promise and price of education. In *Inuit Women: Their Powerful Spirit in a Century of Change* (pp 315-334). Lanham, MD: Rowman and Littlefield Publishers.

Carpenter J., Guerin A., Kazcmarek M., Lawson G., Lawson K., Nathan L. P., & Turin M. (2016). *Digital access for language and culture in First Nations communities*. Retrieved from http://fnhssm.com/peke/wp-content/uploads/2017/08/report_2016_digital_language_access.pdf

CBC News. (2015, June 17). Inuktitut iphone, ipad keyboards help strengthen Inuit language. *Canadian Broadcasting Corporation*. Retrieved from http://www.cbc.ca/news/canada/north/inuktitut-iphone-ipad-keyboards-help-strengthen-inuit-language-1.3117261

CBC News. (2017, March 9). Nunavut language app bring Inuit language to life for preschoolers. *Canadian Broadcasting Corporation*. Retrieved from http://www.cbc.ca/news/canada/north/uqausiit-pinnguarutiit-language-app-1.4015268

Centre for Suicide Prevention. (2013). *Suicide Prevention Resource Toolkit*. Retrieved from https://www.suicideinfo.ca/wp-content/uploads/2016/08/Indigenous-Toolkit_Print.pdf

Chansonneuve, D. (2007). *Addictive Behaviours Among Aboriginal People in Canada*. Retrieved from Aboriginal Healing Foundation: http://www.ahf.ca/downloads/addictive-behaviours.pdf

Commission des droits de la personne et des droits de la jeunesse. (2007). *Nunavik: Report, conclusions of the investigation and recommendations*. Retrieved from http://www.cdpdj.qc.ca/Publications/rapport_Nunavik_anglais.pdf

Cree Board of Health and Social Services of James Bay (2005). The Evolution of Health Status and Health Determinants in the Cree Region (Eeyou Istchee): Eastmain-1-A Powerhouse and Rupert Diversion Sectoral Report: Volume 2: Detailed Analysis. Retrieved from http://www.gcc.ca/pdf/QUE000000012.pdf

Cree Board of Health and Social Services of James Bay (2015). Air Creebec to offer medical air charter for Cree patients in Northern Quebec. Retrieved from http://www.creehealth.org/news/community-stories/air-creebec-operate-medical-air-charter-cree-patients-northern-quebec

Cree Board of Health and Social Services of James Bay (2017). Midwifery and birthing. Retrieved from http://www.creehealth.org/miyupimaatisiiun-department/midwifery-and-birthing

Canadian Radio-television and Telecommunications Commission. (2016). Broadband Internet Service Coverage in Canada. Retrieved from https://crtc.gc.ca/eng/internet/internetcanada.htm

Canadian Radio-television and Telecommunications Commission. (2017). Communications monitoring report 2017: Telecommunications sector overview. Retrieved from https://crtc.gc.ca/eng/publications/reports/policymonitoring/2017/cmr5.htm#s53

Davis-Kean, P. (2005). The influence of parent education and family income on child achievement: The indirect role of parental expectations and the home environment. *Journal of Family Psychology, 19*(2), 294-304.

Department of Justice. (2017). Rights and freedoms in Canada. Retrieved from http://www.justice.gc.ca/eng/rp-pr/cp-pm/just/06.html

Duhaime G., Caron A., & Levesque, S. (2015). Nunavik in Figures 2015. Retrieved from Université Laval: http://www.chaireconditionautochtone.fss.ulaval.ca/documents/pdf/Profil-2015-anglais-24-08-2015.pdf

Fine, S. (2015, May 28). Chief Justice says Canada attempted 'cultural genocide' on aboriginals. *The Globe and Mail*. Retrieved from https://www.theglobeandmail.com/news/national/chief-justice-says-canada-attempted-cultural-genocide-on-aboriginals/article24688854/

First Nations Telehealth Network. (2017). First Nations Telehealth Network. Retrieved from http://www.firstnationsth.ca/Portals/0/April%20%202017%20Newsletter_1.pdf

Fortin, M., Bélanger, R., Boucher, O., & Muckle, G. (2015). Temporal trends of alcohol and drug use among Inuit of Northern Quebec, Canada. *International Journal of Circumpolar Health, 74,* http://doi.org/10.3402/ijch.v74.29146

Frizzell, S. (2017, February 18). Iqaluit kids go home with free laptops after coding workshop. *Canadian Broadcasting Corporation*. Retrieved from http://www.cbc.ca/news/canada/north/coding-course-free-laptop-1.3989314

Government of Canada. (2016). *The Chief Public Health Officer's Report on the State of Public Health in Canada, 2015: Alcohol Consumption in Canada*. Retrieved from https://www.canada.ca/en/public-health/services/publications/chief-public-health-officer-reports-state-public-health-canada/2015-alcohol-consumption-canada.html

Government of Canada. (2017). Digital Canada 150: Announced Connecting Canadians Projects. Retrieved from https://www.ic.gc.ca/eic/site/028.nsf/eng/50044.html

Government of Canada. (2018a). Addiction Treatment for First Nations and Inuit. Retrieved from https://www.canada.ca/en/indigenous-services-canada/services/addictions-treatment-first-nations-inuit.html

Government of Canada. (2018b). Definition of Jordan's Principle from the Canadian Human Rights Tribunal. Retrieved from https://www.canada.ca/en/indigenous-services-canada/services/jordans-principle/definition-jordans-principle-canadian-human-rights-tribunal.html

Greenwood J., Harata Te Aika, L., & Davis, N. (2011). Creating virtual marae: An examination of how digital technologies have been adopted by Maori in Aotearoa New Zealand. In P. R. Leigh (Ed.), *International Exploration of Technology Equity and the Digital Divide: Critical, Historical and Social Perspectives* (pp. 58-79). Hershey, PA: IG Global.

Indigenous and Northern Affairs Canada. (2017). Let's talk on-reserve education: Survey report. Retrieved from https://www.aadnc-aandc.gc.ca/eng/1509019844067/1509019955553

Heaman, M. I., Gupton A. L., & Moffatt, M. E. K. (2005). Prevalence and predictors of inadequate prenatal care: A comparison of Aboriginal and non-Aboriginal women in Manitoba. *Journal of Obstetrics and Gynaecology Canada, 27*(3): 237-248.

Kahentineson-Jacobs, B. (2011, November). *Kahnawake Community Health Plan Health Transferred Programs*. Retrieved from http://www.kmhc.ca/chp_report/Community%20Health%20Plan%202012-2022%20Update d%2003192013_compressed.pdf

Kral, M. J. (2016). Suicide and Suicide Prevention among Inuit in Canada. *Canadian Journal of Psychiatry 61*(11), 688–695. http://doi.org/10.1177/0706743716661329

Larochelle, S. (2018, May 22). Plan Nord: Bien plus que 800km de fibre optique. *La Presse*. Retrieved from http://www.lapresse.ca/affaires/portfolio/plan-nord/201805/22/01-5182743-plan-nord-bien-plus-que-800-km-de-fibre-optique.php

MacArthur, C. (2016, October 14). Kahnawake Mohawk council chief calls for banishment of known drug dealers. *Canadian Broadcasting Corporation*. Retrieved from http://www.cbc.ca/news/canada/montreal/kahnawake-mohawk-chief-drugs-banishment-1.3803559

MacLean, E. A. (2004). Two children adrift. In B. Swann (Ed.), V*oices from Four Directions: Contemporary Translations of the Native Literatures of North America* (pp. 51-80). Lincoln NB, University of Nebraska Press.

Native American Indian General Service Office of Alcoholics Anonymous. (2018). NAIGSO-AA Home Fires: Online AA Email Meetings. Retrieved from http://www.naigso-aa.org/directories_AAonline.html

National Collaborative Center for Health and Well-being. (2017). Education as a social determinant of First Nations, Inuit and Métis health. Retrieved from https://www.ccnsa-nccah.ca/docs/determinants/FS-Education-SDOH-2017-EN.pdf

Odibo, I. N., Wendel, P. J., & Magann, E. F. (2013). Telemedicine in obstetrics. *Clinical Obstetrics and Gynecology 56*(3), 422–433. doi:10.1097/GRF.0b013e318290fefo

Ohinmaa, A., Chatterley, P., Nguyen, T., & Jacobs, P. (2010). *Telehealth in substance abuse and addiction: Review of the literature on smoking, alcohol, drug abuse and gambling*. Retrieved from Institute for Health Economics: http://www.ihe.ca/documents/Telehealth%20in%20Addiction-Final%202%20Arto.pdf

Ordre des sages-femmes du Québec. (n.d.). *Aboriginal Midwifery and Midwifery Fact Sheet*. Retrieved from http://aboriginalmidwives.ca/files/toolkit/Quebec-1.pdf

Oxford Learner's Dictionary. (2018). Definition of digital divide noun from the Oxford Advanced Learner's Dictionary. Retrieved from https://www.oxfordlearnersdictionaries.com/definition/english/digital-divide

Partridge, S., Balayla, J., Holcroft, C. A., & Abenhaim, H. A. (2012). Inadequate prenatal care utilization and risks of infant mortality and poor birth outcome: A Retrospective analysis of 28,729,765 U.S. deliveries over 8 years. *American Journal of Perinatology 29*(10), 787–794. doi:10.1055/s-0032-1316439

Porter, J. (2016, March 14). First Nations students get 30% less funding than other children, economist says. *Canadian Broadcasting Corporation*. Retrieved from http://www.cbc.ca/news/canada/thunder-bay/first-nations-education-funding-gap-1.3487822

Public Health Agency of Canada. (2015). *The Chief Public Health Officer's Report on the State of Public Health in Canada, 2015: Alcohol Consumption in Canada*. Retrieved from https://www.canada.ca/en/public-health/services/publications/chief-public-health-officer-reports-state-public-health-canada/2015-alcohol-consumption-canada.html

Rogers, S. (2017, December 4). Nunavik to get cellular service in 2018. *Nunatsiaq News*. Retrieved from http://nunatsiaq.com/stories/article/65674nunavik_to_get_cellular_service_in_2018/

Rogers, S. (2018, July 3). Ottawa says it will create an Inuit equivalent of Jordan's principle. *Nunatsiaq News*. Retrieved from: http://nunatsiaq.com/stories/article/65674ottawa_says_it_will_create_an_inuit_equivalent_t o_jordans_principle/

Ross, S. (2018, Jan 29). Quebec Inuit and the impossible dilemma. *Canada's National Observer*. Retrieved from https://www.nationalobserver.com/2018/01/29/news/quebec-inuit-and-impossible-dilemma

Roth, L. (2014, May 10). Digital self-development and Canadian First Peoples of the North. *The World Association for Christian Communication*. Retrieved from http://www.waccglobal.org/articles/digital-self-development-and-canadian-first-peoples- of-the-north

Saltzman, A. (2016, October 7). No connectivity: the internet 'blackout zone' that is rural Canada. *Canadian Broadcasting Corporation*. Retrieved from http://www.cbc.ca/news/business/no-connectivity-the-internet-blackout-zone-that-is-rural-canada-1.3792786

Secrétariat aux Affaires Autochtones Québec. (2018). Aboriginal communities of Québec. Retrieved from: http://www.autochtones.gouv.qc.ca/nations/liste_communautes_en.htm

Smillie-Adjarkwa, C. (2005). Is the internet a useful resource for Indigenous women living in remote communities in Canada, Australia and New Zealand to access health resources?. Retrieved from http://www.yorku.ca/anthna/DigitalDivide.pdf

Statistics Canada. (2016a). Aboriginal Peoples: Fact Sheet for Quebec. Retrieved from http://www.statcan.gc.ca/pub/89-656-x/89-656-x2016006-eng.htm

Statistics Canada. (2016b). Inuit: Fact Sheet for Nunavik. Retrieved from http://www.statcan.gc.ca/pub/89-656-x/89-656-x2016016-eng.htm

Statistics Canada. (2017a). Focus on Geography Series, 2016 Census. Retrieved from http://www12.statcan.gc.ca/census-recensement/2016/as-sa/fogs-spg/Facts-pr-eng.cfm?Lang=Eng&GK=PR&GC=24&TOPIC=9

Statistics Canada. (2017b). Early motherhood among off-reserve First Nations, Métis and Inuit women. Retrieved from https://www150.statcan.gc.ca/n1/pub/75-006-x/2017001/article/54877-eng.htm#a3

Statistics Canada. (2017c). Census Profile, 2016 Census. Retrieved from https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E

Syed, S. (2018). Second-Class Schools for Canada's Indigenous Youth. *The McGill International Review*. Retrieved from https://www.mironline.ca/second-class-schools-canadas-indigenous-youth/

Tasker, J. P. (2017, February 9). Health Canada having trouble finding First Nations kids to help because of 'broken' system. *Canadian Broadcasting Corporation*. Retrieved from: https://www.cbc.ca/news/politics/health-canada-jordans-principle-broken-1.3972924

United Nations Educational, Scientific and Cultural Organization. (2012). *Why language matters for the Millennium Development goals*. Retrieved from UNESCO Bangkok: http://unesdoc.unesco.org/images/0021/002152/215296E.pdf

United Nations. (2008). *United Nations Declaration on the Rights of Indigenous Peoples*. Retrieved from United Nations: http://www.un.org/esa/socdev/unpfii/documents/DRIPS_en.pdf

United Nations. (2015). *Universal Declaration of Human Rights*. Retrieved from United Nations: http://www.un.org/en/udhrbook/pdf/udhr_booklet_en_web.pdf

Walton, F., McAuley, S., Tompkins, J., Fortes, E., Frenette, D., & Burgess, J. (2010). *Lighting the Qulliq: The First Master of Education Program in Nunavut*. Retrieved from University of Prince Edward Island: http://projects.upei.ca/nunavut/files/2013/09/Nunavut_Report_2006-2009.pdf

Wang, A. X. (2017, July 10). How the winner of the world's most prestigious teaching prize succeeds with no resources in the Arctic. *Quartz Media*. Retrieved from https://qz.com/1020830

Whiteduck, G., Tenasco, A., O'Donnell, S., Whiteduck, T., & Lockhart, E. (2012). *Broadband-Enabled Community Services in Kitigan Zibi Anishinabeg First Nation: Developing an e-Community Approach*. Retrieved from http://firstmile.ca/wp-content/uploads/2015/03/2012-KZA-Australia-final.pdf

Zarate, G. (2010, October 1). Nunavut Broadband rolls out new services. *Nunatsiaq News*. Retrieved from http://nunatsiaq.com/stories/article/987678_nunavut_broadband_roles_out_new_services