# Crocodiles and polar bears: A cross cultural comparison of adult learning in remote Indigenous communities

Michelle J. Eady
*University of Wollongong*, meady@uow.edu.au

Alison Reedy
*Charles Sturt University*

# Crocodiles and Polar Bears: Forging a Path to e-Learning in Indigenous Communities

Michelle Eady, University of Wollongong, Australia meady@uow.edu.au

Alison Reedy, Batchelor Institute of Indigenous Tertiary Education, Australia alison.reedy@batchelor.edu.au

**Abstract:**

Crocodile infested and swollen rivers, Troop Carriers, light planes and red dirt typify the landscape of remote tropical Northern Territory in Australia. In contrast, the remote landscape in far northwestern Ontario in Canada is characterised by rough terrain, snow and ice, sea planes and sometimes even polar bears. The traditional owners of the land in these two very different locations face similar issues in accessing adult learning and ongoing educational opportunities. This paper compares and contrasts the experiences of two groups of adult Indigenous students, one from the northern Australian tropics and one from far Northwestern Ontario, and examines the ways that technology is used to try and bridge the distance between Indigenous adult learners' goals and educational opportunities.

**Keywords: Indigenous adult education; Indigenous Australians; Indigenous Canadians.**

Australia and Canada share many similar physical and population characteristics, including similar Indigenous population profiles.  These parallels invite an exploration into the ways in which each nation is tackling the issues of adult education within the remote Indigenous context.  This paper describes the ways in which the Australian and Canadian learning organisations employ computer technology as a way of providing literacy and learning services to Indigenous people living in remote locations.  From the Australian perspective, we will examine an action research project that investigated the ways in which English language and literacy students from the Northern Territory in Australia used computer technology to support their progress when they could not come to class. In Canada, we will review The Good Learning Anywhere program instigated in remote Northwestern Ontario, to assess how a provincially funded, community-based program has used an online synchronous learning platform to reach remote and isolated Indigenous learners with the aim of providing them with opportunities to further their literacy and employability skills.

The term Indigenous will be used in this paper to describe the first inhabitants of each country. In an  Australian context, the term Indigenous is inclusive of "people who identify or are identified as being of Aboriginal origin" (ABS 2008a:86) and Torres Strait Islander peoples; those people originating from the area "comprising islands in the sea between Cape York and the coast of Papua New Guinea, which make up the 'Torres Strait Indigenous Region" (ABS 2008a:98).

In the Canadian context, the term Indigenous will replace the general term, Aboriginal or First Nations, which is used to refer to the first inhabitants of North America.  In Canada, three groups of Indigenous people are recognised under the Constitution. These are First Nations or North American Indian people, Metis, and Inuit people. First Nations people include those

affiliated with a number of North American Indian bands, or groups. The Metis people are 'of mixed North American Indian and European ancestry…[and] have a unique culture that draws on their diverse ancestral origins, such as Scottish, French, Ojibway and Cree' (Statistics Canada 2009a:42). The Inuit people are descended from speakers of the Inuktituk language and most live in the northern regions of Canada (Statistics Canada 2009a:41).

The great size and low population density of Australia and Canada strongly impact in similar ways on the lives of their citizens. In terms of land mass, Australia is the sixth largest country in the world, and Canada is the second largest, after Russia. Both countries have amongst the lowest population densities of any nation on earth, with Australia having a population density of 2.7 people per square kilometre and Canada having a slightly higher population density of 3.3 people per square kilometre. The population distributions across both countries are similar, with a high concentration of the population of each country clustered in urban areas. Outside of the urban areas, both countries contain large geographic areas which are sparsely populated.

In both Australia and Canada, Indigenous people constitute a small proportion of the overall population, 2.5% of Australia's population (ABS 2008a:11) and 3.8% of the population of Canada (Statistics Canada 2009c).  There is some difficulty in comparing the population spread of Indigenous people across the two countries, due to differing definitions of geographical terms and classifications; however, we can say that in both Australia and Canada, higher proportions of the Indigenous populations live outside of major population centres than the general population.

Australia has developed the Australian Standard Geographic Classifications (ABS 2005), a very clear, geographical approach to defining remoteness based on the Accessibility/ Remoteness Index of Australia (Commonwealth Department of Health and Aged Care 2001:3). The Australian Standard Geographic Classifications are linked to population size and road distance from service centres, and include five categories of remoteness; Major Cities, Inner Regional, Outer Regional, Remote and Very Remote. These classifications reflect the accessibility of goods, services and opportunities for social interaction. At one end of the scale, a Major City has relatively unrestricted accessibility, while at the other end, Very Remote areas have very little accessibility. In Australia, 74% of the Indigenous population lives in Major Cities and Inner and Outer Regional areas and 26% live in Remote and Very Remote areas. This contrasts with less that 2% of the non-Indigenous population in Australia who live in Remote and Very Remote areas (ABS 2008a:12).

In Canada, an Urban area has "a minimum population of 1,000 persons and a population density of at least 400 persons per square kilometer" (Statistics Canada 2009a:45), and any area outside of an Urban area is classified as Rural (Statistics Canada 2009:44). Using the Canadian definitions, and based on 2006 census data, 80% of the Canadian population live in Urban areas (Statistics Canada 2009b); whereas, for the Indigenous population, this reduces to 59% (Council of Ministers of Education, Canada 2007:2). This translates to 41% of the Indigenous populations living in Rural areas; double the rate for non-Indigenous people. There is reasonable argument that there is under reporting of Indigenous people, as 22 of the nation's largest Native Indian bands refused to take part in the 2006 census. Taking these numbers into account, analysis of additional data reveals that more than 60%, a substantially larger number of Indigenous people than indicated in the census, live in Rural areas (Burleton et al 2009).

Despite the difficulty of direct comparison, the Australian and Canadian statistics on population spread both show that Indigenous people in both countries are more likely to live

outside of major areas of settlement than the non-Indigenous populations. For the purposes of consistency in this paper, the term *remote* will be used from this point forward to refer to geographic isolation that encompasses both Remote and Very Remote locations in the Australian context, and isolated Rural locations in the Canadian context.

There are many other similarities between the Indigenous populations of Australia and Canada. Both countries have aging populations with the Indigenous populations comparatively younger and growing at a faster rate than the non-Indigenous populations. In Australia, the median age of the population is 37 years, compared to the median age of 21 years for the Indigenous population (ABS 2008a:13-14), a gap of 16 years. In Canada, the median age of the population is 39.5 years (Statistics Canada 2009d), almost 13 years higher than the median age of 27 years for the Indigenous population (HRSDC 2010).

The age differential between the Indigenous and non-Indigenous populations of Australia and Canada is primarily a result of higher fertility rates in the Indigenous populations of both countries (HRSDC 2010, ABS 2009b) although an increasing number of people self identifying as Indigenous has impacted on Indigenous population growth in both countries (Burleton et al 2009, ABS 2008a:11). As a result, the Indigenous populations are growing at a faster rate than the general populations. In Australia the overall fertility rate for Indigenous women is 2.52 babies per woman compared with a rate of 1.97 for all women in Australia (ABS 2009b:32). Similarly in Canada the overall fertility rate for all women was 1.59 babies per woman in 2006 (CBC News 2008), less than the replacement rate, while Canada's Indigenous population grew 20.1% from 2001 to 2006 (HRSDC 2010).

## Socio-economic Indicators

There are also many similar socio-economic factors including education, health, geographical remoteness, employment and literacy which impact upon the Indigenous people in Australia and Canada. I n both countries Indigenous people experience high levels of disadvantage in comparison to the non-Indigenous populations, with the gap between Indigenous and non-Indigenous disadvantage more pronounced in the Australian context.

## Education:

In both Australia and Canada, there is a substantial education gap between Indigenous adults and the general adult population, with lower levels of participation for Indigenous people than non-Indigenous across all educational sectors. In Australia only 36% of Indigenous 17 year old children are reported to be attending secondary school as compared to 66% of non-Indigenous children of the same age (ABS 2008a:28). Canada boasts a better track record than Australia in this regard, although less than 50% of the Indigenous population have completed a secondary education, as compared to 70% of the non-Indigenous population (Council of Ministers of Education, Canada 2007:3).

In Australia, the level of participation in non-school education for Indigenous people is lower than that for the non-Indigenous population; however, it has shown substantial increases, and in the over 35 age group, there are similar levels of enrolment in tertiary education courses for the Indigenous and non-Indigenous populations (ABS 2008a:31). The increasing numbers of Indigenous Australians enrolling in non-school courses have been mainly in vocational education and training courses, and increased enrolments have not translated into successful completions.

Indigenous people are only half as likely as non-Indigenous people, 25% as compared to 47%, to have a non-school qualification (Australian Bureau of Statistics 2008a:32).

In Canada, the gap between Indigenous and non-Indigenous enrolment in tertiary education has been closing. In Canada, 50.7% of the whole population has at least some post-secondary education as compared to 34.5% of the Indigenous population. Similarly to Australia, the increases have been primarily in the vocational and training area, where the rate of Indigenous achievement of 14.2% is almost the same as the 15.3% rate for the whole Canadian population, whereas for university achievement, only 5.8% of the Indigenous population have university qualifications as compared to 18.1% of the wider Canadian population (Burleton et al. 2009).

## Employment:

The Australian 2006 census (ABS 2008a:37) found that 46% of Indigenous people were employed, as compared to 62% of non-Indigenous people, with more than half, 59%, of employed Indigenous people working in low skill occupations. Indigenous people were three times more likely to be unemployed than non-Indigenous people, 16% compared with 5%. Employment status, occupation and hours worked impact directly on household income levels. At the time of the 2006 census, the mean gross household income for Australian Indigenous people was A$469 per week as compared to A$740 for non-Indigenous people, with the disparity increasing as remoteness increases. At a national level, 39% of all Indigenous people are considered to be living in low resource households as compared to 8% of the non-Indigenous population.

Unemployment remains high among Canada's Indigenous population as well. In 2006, the employment rate for Indigenous people of core working age was 53.7% (Statistics Canada 2009c), compared to 81.6% for non-Indigenous people (Statistics Canada, 2008c). For Indigenous people living on reserves (in discrete Indigenous communities), employment levels were much lower than other Indigenous people, with only 39.1% of on-reserve people employed (Burleton 2009). Despite this, the gap between median earnings is smaller than that in Australia, with pre tax weekly earnings for the Canadian population at C$796 a week compared to C$711 for the Indigenous population (Burleton et al. 2009).

## Health:

In Australia, and to a lesser extent in Canada, the effects of socio-economic disadvantage are highlighted by the comparatively poor health outcomes for Indigenous people, with mortality rates for Indigenous people in both countries increasingly related to lifestyle factors, such as smoking, alcoholism, substance abuse and obesity. In both countries non-Indigenous people can expect to live longer than the Indigenous population. The effects of poor health, as well as increased levels of suicide, accidents and violence for Indigenous people, translate to a 17 year difference in life expectancy for Indigenous people in Australia as compared to the non-Indigenous population (Australian Government 2008). In Canada, there has been improvement in Indigenous life expectancy and the gap has shrunk to less than 6 years (Cooke et al. 2007). An Indigenous Canadian can expect to live for 72.9 years, 13 years longer than an Australian Indigenous person whose life expectancy is only 59.6 years.

**Remoteness:**

        For each of the student groups, the context of their lives is in a remote environment. Remoteness in the Northern Territory and remoteness in Northwestern Ontario look quite similar. Both areas are geographically isolated, and access to goods and services is further limited by climatic extremes, water, snow and ice. In both Australia and Canada, the socio-economic indicators show that there are marked increases in disadvantage associated with geographical remoteness, particularly for 'those who live in discrete Indigenous communities' (Cooke et al. 2007).

        Although the Indigenous population of Australia is only 2.5% of the total population, Indigenous people comprise 32% of the population of the Northern Territory, a total of 66,600 people. The majority, 79%, of the Indigenous population in the Northern Territory live in remote areas  and 59% of the Northern Territory Indigenous population speak an Australian Indigenous language at home (ABS 2008a:11). The Indigenous population of the Northern Territory is spread across discrete Indigenous settlements, the larger ones called communities, plus an estimated 500 smaller settlements (Altman et al. 2008:2) called outstations or homelands, which are small decentralised communities of close kin, established by the movement of Indigenous people away from larger settlements to land that has social, cultural and economic significance to them. The term Indigenous communities will be used to describe both communities and homelands.

        A remote community in the Northern Territory may be hundreds of kilometres by unsealed dirt road from a regional service centre. Roads into communities in the Top End of the Northern Territory may be cut for up to five months of the year during the wet season as a result of swollen, crocodile infested rivers. During these months, the only access into communities is by light plane. Other communities are similarly cut off during the wet, with dirt roads waterlogged and impassible. Many communities are located on islands off the Northern Australian coast, accessible year round only by small plane or by boat. In many of these communities people have to travel vast distances, at great cost, to get to a shop to purchase staple goods. In these communities hunting and food gathering may be a practical and economic necessity to supplement shop bought food, as well as evidence of the continuation of traditional cultural practices and values.

        The Canadian Indigenous population living outside of urban areas are categorised as living either on or off reserve. These reserves are legally defined settlements or designated land for First Nations or Indigenous people as declared in the Canadian Indian Act (1876). The area referred to in this paper consists of approximately 35 communities, directly North of Sioux Lookout, Ontario in the region of Northwestern Ontario. These communities are part of the larger Nishnabwe Aski Nation (NAN) which compromises 49 communities in Ontario's North and occupies over 60% of the province of Ontario. The total population of these communities is approximately 35,000 people which include members of three First Nations people, the Cree, Ojibwe and Oji-Cree Nations.

        In this region, communities are far away from other communities and there is no large urban centre past Sioux Lookout, Ontario. People cannot commute out of their communities to access jobs on a daily basis or to access social or medical services on demand. Transportation to and from these communities is expensive, jobs are few and far between, living expenses exorbitantly high, access to medical services is extremely limited, and in order to obtain

opportunities to a higher education, residents often must leave their communities for an extended period of time. These Indigenous communities are surrounded by abundant lakes carved in the vast forests of the Canadian Shield. Travel to the communities by road is limited, but can happen by aircraft year round. Water planes are used in the summer and ski planes in the winter. The communities can also be reached by roads over the snow and ice in the winter months.

In Australia, as remoteness increases, school completion rates for Indigenous people drops significantly, as does the likelihood of having a non-school qualification. In the Northern Territory, educational attainment rates are lower than for Australia as a whole. Only 6% of the Indigenous population of the Northern Territory has a post-secondary qualification, as compared to 33% of the non-Indigenous population, and when it comes to a university qualification at Bachelor degree level or higher, only 0.8% of Indigenous people, as compared to 12% of non-Indigenous people have obtained this level of qualification (ABS 2008b:2)

Indigenous people in remote areas of Australia have lower household incomes than Indigenous people living in cities. Overcrowding is a factor in Indigenous households, and this issue increases in very remote areas, where 40% of households require at least one extra bedroom. Living in a remote location also significantly reduces the likelihood for an Indigenous household to have a computer or internet access. It appears that the Indigenous unemployment rate in remote areas is lower than other areas; however, this is a result of lower participation rates in the labour force as well as participation in remote Community Development Employment Projects (CDEP), a federal government scheme which provides the exchange of unemployment benefits for work and training opportunities where there is a limited labour market. Indigenous people are disproportionately represented in low paid, low status occupations and in remote communities this is further exacerbated under CDEP, as almost half of the jobs provided are as labourers (ABS 2008a:39).

Remoteness in Canada has a similar, negative impact on Indigenous people as it does in Australia. Most communities in Northwestern Ontario are equipped with basic amenities such as a primary school, a small store, a nursing station, a church and most often an ice hockey rink; however, the lack of a variety and scope of services provided proves to be a barrier for those who reside in these locations. The cost of living in these communities can also be exorbitant, as the goods must be delivered into the communities either by winter roads or by plane.

In terms of educational outcomes, Indigenous Canadians achieve the highest levels of educational achievement if they live in cities, second highest if they live in towns, third highest if they live in rural areas, and the lowest levels of educational achievement is achieved by those people living on reserve, where 59% of people are not completing high school (Mendelson 2006:15).

The employment rates are around 15% higher for Indigenous people living off reserve than on reserve, with 39.1% of the Indigenous population living on reserve employed, compared to 53.8% of the Canadian Indigenous population (Statistics Canada 2008c:6). Median income is also much lower for Indigenous people living on reserve than in any other location (Burleton et al. 2009).


**Adult literacy and technology:**

Employment statistics for the Indigenous populations of Australia and Canada indicate that, as employment skill requirements grow to reflect the growing technology trends of the local

and global markets, the employment gap will widen between those with access to and knowledge of technology, and those without. This imposes a significant threat to under-skilled Indigenous people, who will be excluded from new economic and employment opportunities, and pushed further to the margins of society (Greenall & Loizides, 2001; Miller, 2006).

Many of the skills needed to access computer and other information are linked to people's levels of literacy. In terms of their general populations, Australia and Canada share similar literacy profiles as we can see through comparison of data collected under the International Adult Literacy and Life Skills Survey, conducted in Australia in 2006, and the findings from the International Adult Literacy and Skills Survey (IALSS) conducted in Canada in 2003. These surveys were part of an international study coordinated by Statistics Canada and the Organisation for Economic Development (ABS 2007) to compare literacy levels across countries.

The developers of the surveys ranked proficiency from one, being the lowest level, to five as the highest level, with level three being the "minimum required for individuals to meet the complex demands of everyday life and work in the emerging knowledge-based economy" (ABS 2007:5). In Australia about 47% of the whole population was under this minimal level in literacy, 53% were under the minimal level in numeracy and 70% of the Australian population was under minimal required levels in the area of problem solving. The figures for the Canadian population were similar (ABS 2007:27), showing that in both countries, significant proportions of the populations have insufficient literacy and numeracy skills to operate effectively in the workplace or in the community.

The surveys show a strong correlation between educational level and achieved literacy levels, and also that those people with higher literacy scores are more likely to be employed, have higher incomes and use the internet. Given this correlation, we can extrapolate that the overwhelming majority of the Indigenous people of both countries do not have the requisite literacy and numeracy skills to fully participate in today's society.

Further, the increased importance of new technologies in our lives and workplaces, indicates that unequal distributions of literacy proficiencies will likely lead to further inequalities in social and economic outcomes between societal groups, making the maintenance and acquisition of new competencies even more difficult; something already evident in Canada's Indigenous communities (Bougie, 2008, Greenall, 2005; Greenall & Loizides, 2001; Miller 2006).

In response, Indigenous communities in Canada, governments and educational institutions in both countries and national and international literacy organisations are coordinating efforts to implement technological learning strategies to address the *"digital divide"*; the growing global phenomenon that is creating greater distance between those having access to information and communications technology (ICT) and those who do not, due to geographical and social isolation, poverty and political factors (AISR, 2006; Brescia & Daily, 2007; Hodson, 2004; Hunt, 2001; Miller, 2006).

A factor contributing to the digital divide is the lack of access that many Indigenous people have to information and communications technologies. In Australia, where there are very low rates of home computer ownership in remote Indigenous communities, there is significant reliance on access to computers in locations outside the home, in work places and public locations. While the Australian 2006 census showed increasing home ownership of computers across the Indigenous population nationally, home internet access decreased as remoteness increased and only 8% of Indigenous people living in remote areas had home internet access

(ABS 2008c:6). Limited home ownership of computers is also a reality for Canadian Indigenous people living in remote locations.

## Australian Case Study: Batchelor Institute action research project

Batchelor Institute of Indigenous Tertiary Education is located in the town of Batchelor, 100 kilometres south of Darwin in the Northern Territory, Australia. Batchelor Institute is a dual sector tertiary institution which provides vocational education and training courses as well as degree and post graduate level programs to Indigenous Australians. In 2008, a twelve month action research project was conducted with students enrolled in Certificate III in Spoken and Written English, to investigate how communications technology could be used to support their learning.

A total of 37 students were enrolled in the course, 32 of whom lived in Remote or Very Remote areas of the Northern Territory. Thirty five of the students speak English as a second or other language and have an Australian Indigenous language as their main language spoken at home. The Certificate III in Spoken and Written English (NSW AMES 2008) was delivered as a series of one or two week intensive campus-based workshops, with 13 workshop weeks scheduled over the academic year. For most of the students, it was difficult to attend all of the workshops, even though arrangements to travel to the campus from their communities were organised for them, and costs for transport, food and accommodation were covered by Batchelor Institute.

The students gave many reasons for not attending workshops, including work and family responsibilities, caring for a family member, illness or caring for someone who was ill, sorry business (funerals) and cultural business. During the project, 60% of students attended less than half of the workshop weeks while only 14% of students attended more than 80% of the workshops and only two students attended all workshops delivered.

In previous years it appeared that low and irregular workshop attendance was a factor resulting in slow progression through the course, and consequently, a large number of the students in the course in 2008 were continuing from previous years. This action research project examined the concept that integrating the use of computer and other communications technology into the course would assist students to develop the technology based skills and confidence needed to become independent learners, and with these skills they would be able to continue their learning outside of workshops. The project included the development of online materials that students could access between workshops and when they could not come to class.

The inclusion of technology based learning tools as the core of the project was a product of students' expressed and observed interest in developing their computer skills. Feedback from students showed that they enjoyed using new technology-based tools to consolidate, practise and develop their English language and literacy skills. The incorporation of technology-based teaching and learning was also based on the premise that language learners, like all other students 'need exposure to Web 2.0 approaches to develop the skills they'll require for the workplace and the wider world when they graduate' (Coughlin 2008:12).

During the first of the two action research cycles conducted, much of the preliminary planning occurred, including an initial survey on student access to computers with internet connections, in the communities in which they live. At the time of the research, none of the participating students had a home computer. This is unsurprising given the findings of recent

research which shows that people with poor English language skills, Indigenous Australians and people living in remote areas are less likely to have a home computer or to have internet access than other Australians (Daly 2005).

Given the lack of home computer ownership, it was somewhat surprising that the students overwhelmingly indicated that they could access a computer in their community to use between workshops for the purposes of engaging in study outside of workshop periods. Of the 25 students surveyed with regard to computer access, eight students indicated they had access to a computer at a council office (the administrative hub of a community), five at a library, five in their workplace, two said that they had a computer at home, but on investigation this was actually in a schoolroom on their outstation, and one said that she had access to computers at a Batchelor Institute owned study centre. Four responses were ambiguous.

In subsequent reflective surveys, interviews and focus groups during the year, one of the reasons that students consistently gave for not doing follow up work or homework tasks outside of workshops was due to a lack of computer access. A paradox emerged. Some students had computers in their workplaces, but could not access these during the work day as they were either being used by someone else or they were involved in their paid work and could not find time to use the computer for study purposes. When they did have time, after work, they didn't have the opportunity as the offices were locked and the computers inaccessible. Students' access to computers in their communities was often limited to time frames which were unsuitable to them, due to their other commitments; and for those living in larger centres, computer use at libraries was restricted to half hour bookings, an insufficient time period for study purposes. In some communities, study centres containing computers were locked and not available for use by people in the community unless a visiting lecturer could provide entry to the centre and support for the students.

It is clear that lack of access to computers in their homes and communities was a critical issue for the Indigenous students participating in this research. The scenario which emerged was, in fact, not so much a lack of computers per se, but the lack of ease that students have in accessing a computer at a time and place that suits them, as well as lack of support in using those computers.

Students were given opportunities to use computers and develop competence and confidence in using digital tools in the classroom setting prior to some of the tools being incorporated into practice tasks outside of workshops. This was an integral component of the project as students had different levels of familiarity with computers and the other technologies used. Some students had not used computers prior to entering into the course, while others had some competence in using a range of technologies, particularly mobile phones and MP3 players. Some students had used digital cameras, while others had not, and none had used digital video cameras and editing software or some of the other tools that were utilised in the project. For all of the students, computer use was not a part of their usual daily lives.

In the classroom during workshops, the students were introduced to a range of computer based tools and developed skills such as learning to use word processing, email and the internet. Students created PowerPoint audio books, used Audacity freeware for voice recording, and learnt how to create short animations using Marvin software. Students researched and created the storyboards for a movie, which they acted, videoed and edited. They also used the Moodle Learner Management System, which they knew as MyLearn, to participate in a range of activities including using wikis, discussions, glossaries as well as accessing audio, video and other resources, tools and activities which were part of the course learning materials. One of the

aspects the students particularly liked on the MyLearn site was looking at photos of themselves and other students, taken during workshops. Students could also take their own photos and send them directly to the site via their mobile phone.

From the teacher/researcher perspective, the opportunities and possibilities for communication based language and literacy learning drove the use of technology rather than the various technologies being used for their own sake. The use of technology widened the scope for students to engage as active and critical participants in language and literacy learning experiences while developing a range of skills which are important in the knowledge economy. As well as developing their creativity and presentation skills, and participating in meaningful communication, students also had opportunities to work as part of a team, as well as independently.

While students overwhelmingly expressed a desire to use computers for study outside of class, this contrasted with the actions of most students, with homework participation rates lower than 50% across the research period. The outcomes of the first action research cycle led to slightly changed actions in the second cycle. The homework activities given to students in the first cycle were optional, in the sense that they were not formally assessed. This may have impacted on student motivation engagement in tasks outside of workshop periods, given the other demands in their lives.

The second action research cycle coincided with the second semester of the academic year as well as the implementation of a new curriculum which included several assessment criteria that aligned well to this action research project. In particular, three assessment criteria in the new curriculum framework make students' engagement with study outside of the classroom mandatory and assessable.

For many students the action research model provided the structure for active involvement in the research process, and provided students with input into their learning. Many students gained insights into the issues which impact on their own learning, through focus group discussions and reflective surveys. While greater insight did not necessarily translate into improved engagement in study and completion of homework tasks for all students, the students were not used to this level of input into their learning and in some ways the research project provided them with the opportunity to become more reflective learners, more aware of and in control of their own learning.

The use of technology in this action research project was not enough on its own to make a large difference to student learning and progression, but the project did make explicit the complexity and range of issues that impact on the students' capacity to progress through the Certificate III in Spoken and Written English. There was juxtaposition between the inherent value that students place on learning, study, home-based learning activities, and factors that encroach on their capacity and preparedness to attempt, let alone complete, these activities.

All the evidence gathered during the project reinforced the fact that the students were highly motivated by the use of technology in their learning, both inside and outside of the classroom. However, access to computers outside of workshop periods remained an issue, given the lack of home ownership of computers and the restrictions inherent in the use of community computers.  Other factors such as work commitments and lifestyle considerations, including household overcrowding, were factors that influenced the amount of time that students committed to study outside of workshop periods, as well as student attitudes, motivations and education goals.

While this study clearly demonstrates that technology, on its own, is not a solution for improving participation in study outside of workshops, the broad issue of access to computers for Indigenous people living in remote communities requires further study in light of the increasing importance and possibilities afforded, in Australia and worldwide, by online and mixed mode delivery of educational programs

**Canadian Case Study: Good Learning Anywhere program**

In Canada, the province of Ontario provides funding for adult literacy programs through the Ministry of Training, Colleges and Universities. There are four streams of adult literacy, Anglophone, Francophone, Native (Indigenous) and Deaf. Approximately 400 literacy organisations are supported by umbrella groups and coalitions to provide free literacy upgrading and employment skills to adult learners in the province. In 2003, one of the Native literacy organisations, the Sioux Hudson Literacy Council (SHLC), responded to a call out for proposals for projects to reach learners at a distance.

The Sioux Hudson Literacy Council (SHLC) is located in Sioux Lookout Ontario, a small town approximately 365 km north/northwest of Thunder Bay, Ontario. The SHLC was successful with their proposal and created Good Learning Anywhere. The motivation of this proposal was to provide online literacy and other educational courses to the 35 isolated, remote Indigenous communities in Northwestern Ontario who, prior to this initiative, had no access to adult education courses.  SHLC has worked tirelessly to create curriculum and deliver courses using the synchronous platform called Centra that is now provided for all literacy agencies in Ontario, through a coordinating centre initially organized for colleges and universities, called Contact North/*Contact Nord*. The Centra platform showcases many tools in the live time classroom setting including the ability to show slides, talk live time with students, provide immediate feedback, initiate website and application sharing and facilitating segregated group work opportunities.

Contact North/*Contact Nord* provides technological resources and support to communities who request the service. Once a request is made by a community, Contact North/*Contact Nord* discusses the courses, and determines the number of community members that would like to enroll. The community is required to provide a rent free space for the equipment, provided by Contact North/*Contact Nord*, which includes everything that is needed for community members to participate in online learning; a computer, webcam, microphone, speakers, and an interactive web tablet. A local community member is trained in how to run the small learning site and is employed part time by Contact North/*Contact Nord* to open the centre when students request access in order to take courses.

Internet connectivity has been brought to the communities by a federally funded initiative spear headed by an organization called Keewaytinook Okimakanak (KNet). Knet council provides health, education, economic development, employment assistance, legal, public works, finance, research, clean water, cellular, administration and computer communication services to many of the Indigenous communities in Northwestern Ontario. The internet services brought to the north by Knet, provide the means of communication with doctors and specialists for patients in the communities. It also provides an a synchronous high school environment for remote and isolated youth.

SHLC has been able to reach learners in the remote communities in Northwestern Ontario using the existing internet connectivity.  SHLC has developed many courses since 2003

which have been created with the idea that students can reach personal goals such as reading to their children, or filling in a job application and creating a resume as well as move on to further education and/or employment goals. Some of the courses have included, Internet for the Terribly Terrified, Pre Graduate Diploma of Education courses, Internet Safety and Security, Literacy and Numeracy Courses. SHLC is currently in partnership with a mining company, providing employment readiness courses to Indigenous learners who are working in the mine setting.

One of the many projects that the SHLC developed was in collaboration with Confederation College. The outcome of this project was a course called Teacher Assistant Career Training (TACT). The TACT program was an eight month workplace readiness program that provided literacy and employability skills to help individuals who lived in worked in Indigenous communities. All of the individuals in this program were employed in the school system in their community as a teacher's assistant. Even though many of these individuals worked with children with diverse needs and abilities, many had not received any basic job training. The TACT program provided a series of eight courses including Child Development , Communication Skills, Exceptionalities, etc., that helped train and provided development for these individuals to be the best they could be in their jobs. A total of 43 students enrolled in this program, of which nearly half completed the first eight month pilot.

One success story in particular is that of a young mother of four, who completed the TACT program and then decided that her true calling was to be an educator. She decided to apply to a university over 600 km away for the teacher's education program. This young woman packed up her family and moved to a large city centre so that she could attend her Native Teaching Program at the local university. The TACT program gave her the start that she needed to follow her dream to be an educator.

The Centra platform initiative, also known as e-Channel, provides opportunities for all literacy learners across Ontario to participate in real time classroom settings at the learner's pace. Access to learning can be from the comfort of their homes or from a supported community setting. This mode of online learning allows Indigenous people to access learning from urban or remote environments, allowing them the freedom to tend to their Indigenous traditions and cultures and still build bridges to learning opportunities. The Good Learning Anywhere project won the Council of the Federation of Literacy Award in 2007 for innovation in literacy practices and later that year was mandated by the provincial government to expand their services to reach all Indigenous adult learners at a distance. There are currently over 500 learners in the program with over 1200 learners having already had the opportunity to access the online learning experience. The project was recently funded for another two years of service to Indigenous learners in the province.

## What we can learn from each other

Although there are many similarities between Australia and Canada in terms of physical size, history, and the profiles of the Indigenous and non-Indigenous people in each country, the case studies presented show that the two countries have taken different approaches to adult learning and access to these services in Indigenous communities, including language and literacy education and technology in education.

In both countries, there is an education gap between the Indigenous and non-Indigenous population with Canada however, appearing to have  greater success in working towards achieving more equitable outcomes. In both Canada and Australia, there is evidence of improved

educational outcomes for the whole population over time. In Canada, the gap is closing between Indigenous and non-Indigenous outcomes, whereas in Australia, Indigenous attainment is not keeping up with improved educational outcomes across the whole of the country, resulting in a slight widening of the gap in educational attainment (Cooke et al. 2007).

**Conclusion:**

These case studies highlight three main differences in approach in the educational provision to Indigenous people in the Northern Territory and Northwestern Ontario.

**1:** *The Adult Literacy Sector*

In Australia, there is no adult literacy sector which encompasses English language, literacy, numeracy and work readiness programs. Such programs have, in the main, been incorporated into the state and territory vocational education and training (VET) sectors as part of the employment focused national training system. On the one hand, this situates literacy and numeracy within the context of vocational training packages, which widens the potential scope and reach of adult language, literacy and numeracy delivery; however, as a result of the embedding of these skills into vocational programs, they have become less visible, and in the Northern Territory, there has been no recognition of the teaching support required for the integration of language, literacy and numeracy within training packages. Language literacy and numeracy outcomes have been identified in most training packages, but the vocational staff who deliver these, are not necessarily skilled in delivering and assessing the language, literacy and numeracy components of the courses.

Furthermore, the primary focus of the VET sector is to achieve vocational outcomes which are widely accepted to stem from training at Certificate III level and above. Indeed, the Council of Australian Governments National Education Agreement has, as one of its five main outcomes, the successful transition from school to work for young people, which is to be measured by "the proportion of 18 to 24 year olds engaged in full-time employment, education or training at or above Certificate III" (COAG 2009:10). This has the effect of marginalising the delivery of lower level programs, which do not have direct employment outcomes. This ignores the social capital outcomes that have been shown to come from participation in adult language, literacy and numeracy programs, as well as the needs of vast numbers of Australian people, including Indigenous people, who, as demonstrated by the findings of the Adult Literacy and Life Skills survey, have low literacy and numeracy levels.

In Canada, adult language, literacy and numeracy and work readiness programs fall within the Adult Literacy Sector of the Ministry of Training, Colleges and Universities. The Adult Literacy sector's funding is separate to the vocational education and higher education sectors, and focuses on the delivery of programs to adult learners. The programs developed and delivered are valued as a vital component of the learning continuum.

**2:** *Funding*

In Australia the higher education sector is funded by the federal government and the VET sector is funded by the six states and two territories. The federal government provides funding

for three enabling programs, the Adult Migrant English Program (AMEP), for migrants and refugees, the Language Literacy and Numeracy Program (LLNP), for registered unemployed, and the Workplace English Language and Literacy (WELL) program. The 2009-10 federal budget allocated A$21.6 nationally over four years to the WELL program, which supports workplace based literacy and numeracy projects (Gillard 2009). The LLNP is funded at around A$70 million a year nationally for 2010-2013; however, the inflexible delivery and funding model, high administrative requirements, and prescriptive hours of attendance, make it unsuitable and unviable for delivery to students in remote Indigenous communities in the Northern Territory. As a reflection of this, neither of the two largest VET providers in the Northern Territory have tendered for LLNP funding for the 2010-2013 period. Government programs for Indigenous education are "so confusing and difficult to access, they actually operate as a contributing factor to the outcomes in Indigenous education" (Lea and Walsh, 2008)

Within the VET sector in the Northern Territory, there has been an increase in the total amount of vocational funding over the past few years; however, over the past decade funding, which is based on a fixed rate for each hour of delivery conducted, has not kept pace with the costs of delivery, particularly with the increasing cost of educational delivery to remote locations. There is no funding within the VET system that is tied for the delivery of language, literacy or numeracy programs, although accredited courses can be, and are, delivered as part of the VET system. The available funding in the VET system is directed principally towards vocational training programs, at the expense of programs that give people the skills and confidence they need prior to entering those courses.

In Canada, funding for primary, secondary and post-secondary education is a responsibility of the departments or ministries of education in the country's 13 jurisdictions, comprising of ten provinces and three territories (Council of Ministers of Education, Canada 2007). In Ontario, the Ministry of Training Colleges and Universities currently provides C$75 million a year for literacy and basic skills programming in the province of Ontario. In Ontario, there is ongoing consultation with peak Indigenous organisations, such as the Ontario Native Literacy Coalition, with regard the design and implementation of adult literacy programs. Funding for Indigenous adult education programs is distributed to and managed by Indigenous organisations such as the Sioux Hudson Literacy Council. The Canada-Ontario Labour Market Agreement announced in February of 2008, that in each year over the next 6 years, a total of C$34 million annually will be invested in foundation skills training and supports, in order to increase the opportunities for learners to improve their ability to access the labour market.

**3:** *Information and communications technology*

In Australia, computer infrastructure to remote Indigenous communities varies from community to community. The federal government National Broadband Network promises $43 billion over 8 years to build a national broadband network servicing every home in Australia (Conway 2009). This ambitious project aims to link 90% of Australia with an optical fibre network; however, the remaining 10% of homes, those in remote areas of Australia, will be serviced by substantially slower wireless and satellite technologies.

Appropriate infrastructure is critical for Indigenous communities; however, it is only one factor that impacts on access to computer-based learning. There are currently limited, if any, locations within Indigenous communities where people can access computers for the purpose of study. Where there are facilities, in council offices and libraries, computer access is usually

restricted to business hours, and the locations are rarely conducive learning environments. For remote Indigenous communities which do have study centres, these are generally locked up when a visiting lecturer is not in the community. Technical support in remote Indigenous communities is rare, and there is limited funding available for purchasing computer hardware and software for students to use in communities. There are no funds provided from within the VET sector for employing and training local staff to manage community based training facilities, or for covering the ongoing costs of access to internet service providers.

The infrastructure and support for online educational provision to adult Indigenous students in Northwestern Ontario is substantially greater than that available to adult students in Indigenous communities in the Northern Territory. This base has enabled the development of a strong online education system in Northwestern Ontario which has opened up a range of educational opportunities for Indigenous people within their own communities.

In Ontario, government funded high speed internet access has been provided to all communities. This infrastructure has been utilised by education providers to deliver a range of programs. Between the years 1975 and 2000, KNet received over 30 million dollars to develop, maintain and create services on the internet for remote and isolated communities in Northwestern Ontario (University of Guelph, 2000) and the project continues to grow and flourish today. Contact North/*Contact Nord* was established 20 years ago and provides technological support to learners who live in remote and isolated areas, connecting them to literacy, college and university courses.

In late 2007, the Ontario Ministry of Training, Colleges and Universities contracted Contact North/*Contact Nord* to provide e-Channel technology (Centra 7.5) to all Literacy Organisations, Network Umbrella Groups and Provincial Organisations in the province. Contact North/*Contact Nord* continues to receive funding to provide these services.

Despite the technical support provided in setting up for the Indigenous programs in Northwestern Ontario, as well as the technical support available by phone, online delivery is not all plain sailing. Connectivity was the main problem encountered by students, and 67% of learners in a Sioux Hudson Literacy Council course were faced with computer problems during their studies. Surprising enough, many learners persisted with their studies, even though faced with the frustration of lost connections and lack of community based network support.


**Building for the future**

The two case studies indicate that the Indigenous adult learners in Northwestern Ontario are privileged in comparison to their counterparts in the Northern Territory of Australia, in terms of access to a learning system that is set up and funded to deliver a range of adult literacy courses to remote Indigenous learners. The provincial government of Ontario has identified adult literacy as a sector in its own right with funding separate from that of colleges or TAFE and universities, and funds networks and umbrella groups advocating for the literacy organisations in specific streams whether that is English, French, Deaf or Native (Aboriginal). This has been enhanced by the early awareness of the importance of internet access for remote communities and the funding and support that has been dedicated to the expansion, upgrading and maintenance of communication and technology services. However, this does not override the reality of the vast educational disadvantage experienced by the Indigenous populations, in comparison to the non-Indigenous people, in both Australia and Canada, and the significant gains that need to be

achieved in both countries in order to achieve parity in education, employment, health and other socio-economic, outcomes. The disparity is greatest for those Indigenous people living in remote areas, in discrete Indigenous settlements, be they communities, homelands or on reserves.

Although both countries have been making progress, Canada appears to be achieving greater success than Australia in closing the gaps between the Indigenous and non-Indigenous life expectancy, income and educational achievement. This conclusion can be drawn from the comparative statistics shown in this paper, that state that 25% of Australian Aboriginals have completed some form of higher education (ABS 2008a:32) compared to 34% of the Canadian Indigenous population (Burleton et al 2009), or in the fact that a Canadian Aboriginal person has a life expectancy 17 years longer than an Australian Aboriginal person (Australia Government 2008). That being said, both countries have a long way to go to redress the levels of disadvantage experienced by the Indigenous populations.

In Ontario, there is a history of funding for Indigenous managed educational systems as well as Indigenous adult learning programs in the adult literacy sector. Australia, on the other hand, has a "historical legacy of years of under spending" (Altman 2009:7) on all aspects of Indigenous welfare. The current policy response, in an attempt to redress past under-spending, is based on providing significant amounts of money, particularly for Indigenous issues in the Northern Territory; however, this funding has heralded "more coercion, and more direct state involvement and over sighting" (Altman 2009:3). This is in direct contrast to the Ontario model of funding ground up, Indigenous controlled programs.

There are obvious similarities in the needs of Indigenous adult learners in both Australia and Canada, and the differences in the ways that each country has addressed these needs suggests an effort of collaboration be made to bring together literacy practitioners, advocacy groups and policy makers cross nationally to reflect on and reform, where need be, the adult learning approaches in each country. A joint, cross national advisory committee could provide a forum for the discussion of best practices, through to the barriers in literacy learning, and present opportunities to share, learn and perhaps move forward together for the betterment of Indigenous adult learners in both Australia and Canada.

The case studies of Sioux Hudson Literacy Council and Batchelor Institute of Indigenous Tertiary Education, lead us to further areas to be explored and discussed, including the crucial need for the inclusion of Indigenous Language and Indigenous Knowledge in mainstream educational programs, the development and implementation of ground up approaches to community learning programs, the establishment of local and peer mentoring programs, community technical maintenance support and online instructor training, to name a few. Batchelor Institute and the Sioux Hudson Literacy Council hope to bring together staff, to set up opportunities for online sharing between the Indigenous communities in Ontario that are involved in online learning, and students from Batchelor Institute; in a live-time cross-national sharing project.

This paper has outlined two distinctly different experiences of Indigenous adult learning in two very different regions of the world, and in doing so has highlighted the similarities of the profiles and needs of those Indigenous populations, as well as the ongoing challenges that exist in delivering and supporting adult literacy learning at a distance. This paper invites Australian and Canadian literacy practitioners, policy makers and community members, to reflect on and learn from the experiences described herein, and to continue to forge a path to improve adult learning in remote Indigenous communities.

# References

Australian Institute for Social Research (AISR). (2006). The Digital Divide – Barriers to e-learning [Electronic Version]. Retrieved March 10, 2008 from http://www.ala.asn.au/research/Barriers%20-%20by%20Digital%20Bridge%20Unit%20and%20undertaken%20by%20Australian%20Institute%20of%20Social%20Research.pdf

Altman, J., S. Kerins, et al. (2008). Why the Northern Territory Government needs to support outstations/homelands in the Aboriginal, Northern Territory and National Interest. Canberra, Centre for Aboriginal Economic Policy Research, The Australian National University.

Altman, J. (2009). Developing a national Indigenous policy framework that recognises needs, rights and legacies and delivers results. Canberra, Centre for Aboriginal Economic Policy Research, The Australian National University.

Australian Bureau of Statistics (ABS) (2005). Australian Standard Geographical Classifications (ASCG), Canberra. Cat. No. 1216.0

Australian Bureau of Statistics (ABS) (2007). Adult literacy and Life Skills Survey, Summary Results Australia, Canberra. Cat. No. 4228.0

Australian Bureau of Statistics (ABS) (2008a). Population Characteristics, Aboriginal and Torres Strait Islander Australians, 2006 Canberra. Cat. No. 4713.0.

Australian Bureau of Statistics (ABS) (2008b). Population Characteristics, Aboriginal and Torres Strait Islander Australians, Northern Territory, 2006 Canberra. Cat. No. 4713.7.55.001

Australian Bureau of Statistics (2008c). Australian Social Trends 2008 Article: Internet access at home. Canberra. Cat. No. 4102.0.

Australian Bureau of Statistics (ABS) (2009a) Australian Social Trends, Dec 2009 International Comparisons, Canberra. Cat. No. 4102.0

Australian Bureau of Statistics (ABS) (2009b) Births, Australia, 2008, Canberra. Cat. No. 3301.0

Australian Government. (2008). "Australia 2020: The Future of Indigenous Australia - Power Point."  Retrieved 4 January 2010 from http://www.australia2020.gov.au/topics/indigenous.cfm.

Burleton, D., Drummond, D (2009) Aboriginal People in Canada: Growing Mutual Economic Interests Offer Significant Promise for Improving the Well-Being of the Aboriginal Population, TD Economics Special Report. Retrieved 4 January 2010 from http://www.td.com/economics/special/db0609_aboriginal.pdf

Bougie, E. (2008). Literacy profile of off-reserve first nations and metis people living in urban Manitoba and Saskatchewan: Results from the international adult literacy and skills survey 2003 [Electronic Version]. Retrieved February 28, 2008, from www.statcan.ca/english/freepub/81-004-XIE/2007005/article/10500-en.htm

Brescia, W., & Daily, T. (2007). Economic development and technology-skill needs on American Indian reservations. *American Indian Quarterly, 31*(1), 23-43.

CBC News (2008) Canada's fertility rate at a 10-year high: Stats Can. Retrieved 4 January 2010 from http://www.cbc..ca/health/story/2008/09/26/fetility-rate/.html

Coghlan, M. (2008). Where is the 'M' in interactivity, feedback and assessment? 2nd International Wireless Ready Symposium. NUCB Graduate School, Nagoya, Japan.

Commonwealth Department of Health and Aged Care (2001). Measuring Remoteness: Accessibility/Remoteness Index of Australia (ARIA). Canberra, Department of Health and Aged Care. Occasional Papers: New Series Number 14.

Cooke, M., F. Mitrou, et al. (2007). "Indigenous well-being in four countries: An application of the UNDP'S Human Development Index to Indigenous Peoples in Australia, Canada, New Zealand, and the United States." BMC International Health and Human Rights **7**(9).

Council of Australian Governments (COAG) (2009). National Education Agreement. Retrieved 16 January 2010 from http://www.coag.gov.au/intergov_agreements/federal_financial_relations/docs/IGA_ScheduleF_national_education_agreement.doc

Council of Ministers of Education, Canada (2007) Indigenous Education in Canada. Retrieved 4 January 2010 from http://www.dest.gov.au/NR/rdonlyres/B07E4516-4295-4FF2-90C4 3890B6A310B9/17796/Country_Papers_Aboriginal_Canadian.pdf

Daly, A. (2005). Bridging the digital divide: The role of community online access centres in Indigenous communities, Centre for Aboriginal Economic Policy Research, Australian National University.

Gillard, J. (2009). Media Release, Budget 2009-10: $1 billion to address Indigenous disadvantage. Department of Education Employment and Workplace Relations. 12 May 2009.

Greenall, D. (2005). Formative evaluation of the Sunchild e-learning community [Electronic Version]. Retrieved March 8, 2008, from http://www.sccyber.net/www/Conference%20Board%20of%20Canada%20Study%202005.pdf

Greenall, D., & Loizides, S. (2001). Aboriginal digital opportunities: Addressing aboriginal learning needs through the use of learning technologies [Electronic Version]. Retrieved March 5, 2008, from http://www.hrsdc.gc.ca/en/hip/lld/olt/Skills_Development/OLTResearch/aborig_e.pdf

Hodson, J. (2004). Aboriginal learning and healing in a virtual world [Electronic Version]. *Canadian Journal of Native Education*, *28*, 111-122. Retrieved March 13, 2008, from http://library.queensu.ca/webedu/databases/cbca_ed.htm

Human Resources and Skills Development Canada (HRSDC) (2010) Indicators of Well-being in Canada. Retrieved 4 January 2010 from http://www4.hrsdc.gc.ca/.3ndic.1t.4r@-eng.jsp?iid=36

Hunt, P. (2001). True stories: Telecentres in Latin America and the Caribbean [Electronic Version]. *The Electronic Journal on Information Systems in Developing Countries*. Retrieved March 16, 2008 from http://www.ejisdc.org/ojs2/index.php/ejisdc/article/viewFile/25/25

Lea, T. and H. Walsh (2008). The funding of Indigenous education through Special Purpose Supplementation: an historical overview. Darwin, Charles Darwin University.

Miller, A. (2006). Education everywhere through the first nations distance learning initiative [Electronic Version]. *Summit: Canada's Magazine on Public Sector Purchasing*, 18-19. Retrieved March 4, 2008 from http://www.cisco.com/web/CA/pdf/education_everywhere.pdf

NSW AMES (2008). Certificate III in Spoken and Written English Surry Hills, NSW Adult Migrant English Service.

Mendleson, M (2006) Aboriginal Peoples and Postsecondary Education in Canada, Ottawa, The Caledon Institute of Social Policy. Retrieved 4 January 2010 from http://www.caledoninst.org/Publications/PDF/595ENG.pdf

Statistics Canada (2006).2006 Community Profiles. Retrieved 16 January 2010 from http://www12.statcan.ca/english/census06/data/profiles/community/Index.cfm?Lang=E

Statistics Canada (2008a). Aboriginal identity population by age groups, median age and sex, 2006 counts, for Canada, provinces and territories - 20% sample data. Retrieved 21 March 2008 from http://www12.statcan.ca/english/census06/data/highlights/Aboriginal/pages/Page.cfm?Lang=E&Geo=PR&Code=01&Table=1&Data=Count&Sex=1&Age=1&StartRec=1&Sort=2&Display=Page

Statistics Canada (2008b). Labour force characteristics, Ontario, February 2008. Retrieved 9 March 2008 from http://www40.statcan.ca/l01/cst01/lfss01b.htm

Statistics Canada (2008c). Canada's Changing Labour Force, 2006 Census: Findings Retrieved 25 March 2008 from http://www12.statcan.ca/english/census06/analysis/labour/index.cfm

Statistics Canada (2009a) Aboriginal Peoples Survey, 2006: Concepts and Methods Guide. Ottawa, Minister of Industry

Statistics Canada (2009b) Population urban and rural, by province and territory (Canada). Retrieved 4 January 2010 from http://www40.statcan.gc.ca/l01/cst01/demo62a-eng.htm

Statistics Canada (2009c) 2006 Aboriginal Population Profile – Province/Territory. Retrieved 31 December 2009 from http://www12.statcan.ca//census-recensement/2006/dp-pd/prof/92-594/details/page.cfm

Statistics Canada (2009d) 2006 Census: Portrait of the Canadian Population in 2006, by Age and Sex: National Portrait. Retrieved 4 January 2010 from http://www12.statcan.ca/census-recensement/2006/as-sa/97-551/index-eng.cfm

University of Guelph (2000) History of K-NET Services Annex 1 Retrieved 16 January 2010 http://www.uoguelph.ca/~res/pacts/knet/annex1.htm

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