Youth and Elders: Perspectives on Intergenerational Knowledge Transfer in Churchill, Manitoba

by

Linda Chow

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Department of Environment and Geography

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Abstract

This research focuses on working with fifteen local youths, one elder, and two teachers in the town of Churchill, Manitoba to document intergenerational knowledge transfer. According to Tsuji (1996) there has been a significant loss of traditional ecological knowledge in First Nation communities between generations for both males and females. Traditional knowledge is important because it relies on an individual's own knowledge, beliefs, and attitudes towards certain issues that he or she has experienced in the past.

Through conducting interviews with Elders, youths, and teachers along with observation and participant observation, this research shows knowledge from the Indigenous elder is being transferred to the younger generation through stories, presentations, and education. There is a moderate level of intergenerational knowledge transfer from youth to elders and elders to youth, as well as a high level of interest in incorporating traditional and local knowledge in education.

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Chapter 1 – Introduction

1.1 Background

As a social science researcher, colleagues frequently ask what caused me to get into research, particularly research in northern Manitoba and a community school. This question would normally be followed by asking, "Are you a scientist or an educator?" My reply has been, I am neither a scientist nor educator. Although I was never formally educated as a teacher, my experience has been gained through communicating and learning first hand from educators including professors, instructors and teachers as well as meeting and speaking with community members and researchers around the world who are involved in environmental education that integrates traditional knowledge.

My interest in conducting research in the low arctic initially came from being an undergraduate student in Clayton H. Riddell Faculty of Environment, Earth, and Resources. I was given the opportunity to participate in two field courses, namely *Northern Environments* and *Wildlife and Ethnoecology of the Manitoba Coastal Region*. The first field course took place in November 2005. It allowed me to work with a Master's student on her project titled, *People and Environmental Change*. As a class, we hosted a community workshop talking to students and community members about environmental changes in the area. I helped facilitate a conversation with a few high school students. Seeing their enthusiasm and becoming aware of their rich knowledge of the land, I was surprised and excited to be learning from them. Though the research was never

completed, I realized that I wanted to conduct similar research that involved youth.

The second field course took place in August 2006. I gained fieldwork experience that includes conducting interviews and focus groups; vegetation, permafrost, and fox den sampling; as well as presenting research findings to locals and Parks Canada representatives. As a class, this allowed us to collaborate with other universities and local community members. For the instructor of the month-long field course it was crucial to give back to the community. As a group, we came up with the idea of bringing youths out to the annual Metis Elders gathering at the Marina in Churchill. We hosted activities for youths that included games, arts and crafts, and I assisted in a goose banding demonstration. In return, the elders performed a traditional ceremony for us.

A common link between the two field courses was the opportunity to meet amazing locals Maria M'Lot, Greg Lundie and elders Caroline Bjorklund and Myrtle DeMuelles. Maria and Greg became my community liaisons who helped introduce me to local elders. Our discussions centered upon the research that would be possible to conduct and possible participants for the study. I asked them questions like, "What kind of research would you like to see happen in Churchill?", "What are the proper steps for individuals who want to conduct research in the area?", and "How can we incorporate youths?"

Through Maria and Greg I met Caroline Bjorklund, a Sayisi Dene elder who was very much interested in working with the youths in Churchill and with me. My research questions at the time were as follows:

Are there interactions between youths and elders?

If so, what knowledge is being shared?

How is the knowledge shared?

Why is the knowledge shared?

When and where is the best place to share knowledge?

How can this relate to environmental change?

Caroline was working in the schools teaching youths traditional arts and craft activities. Caroline Bjorklund mentioned one day that elders should teach the children in schools for that way everybody would then know what they are doing. This comment showed that there were interactions between youths and elders in Churchill and from this point on I was convinced I wanted to further my education and pursue graduate school. I used the last two years of my undergraduate degree to help build my knowledge of research, northern communities, and Aboriginal culture and history. In my research I prioritized interacting with communities in meaningful ways and hoped to include community members' input on the design of the study design and to work collaboratively to build local capacity.

Caroline was born August 21, 1943. She is proud to be who she is today and believes that working with youth is the reason she was brought to the world. In the past 25 years she's realized that her culture is important and she's learned so much in those years and the value and gift is so rich. Caroline has many years of experience being a teacher's aide working with Kindergarten students and students with cognitive disabilities, primarily teaching mostly sewing skills

between 1967-1978 and again between 1979-1992. She went back to school and worked as a substitute teacher until 1996 when her husband became ill. In the past six years Caroline has been able to go back into the schools to teach the students how to make different things like mitts, slippers, dream catchers, and little drums. Having experience as a teacher's aide helps her to work with today's students. Caroline's goal is to one day pass the message to somebody else and have them continue to pass traditional knowledge to the next generation. It doesn't have to be in the family, just as long as that person is willing to teach the children about their culture, their community, and other knowledge that the cultural teacher would have expertise.

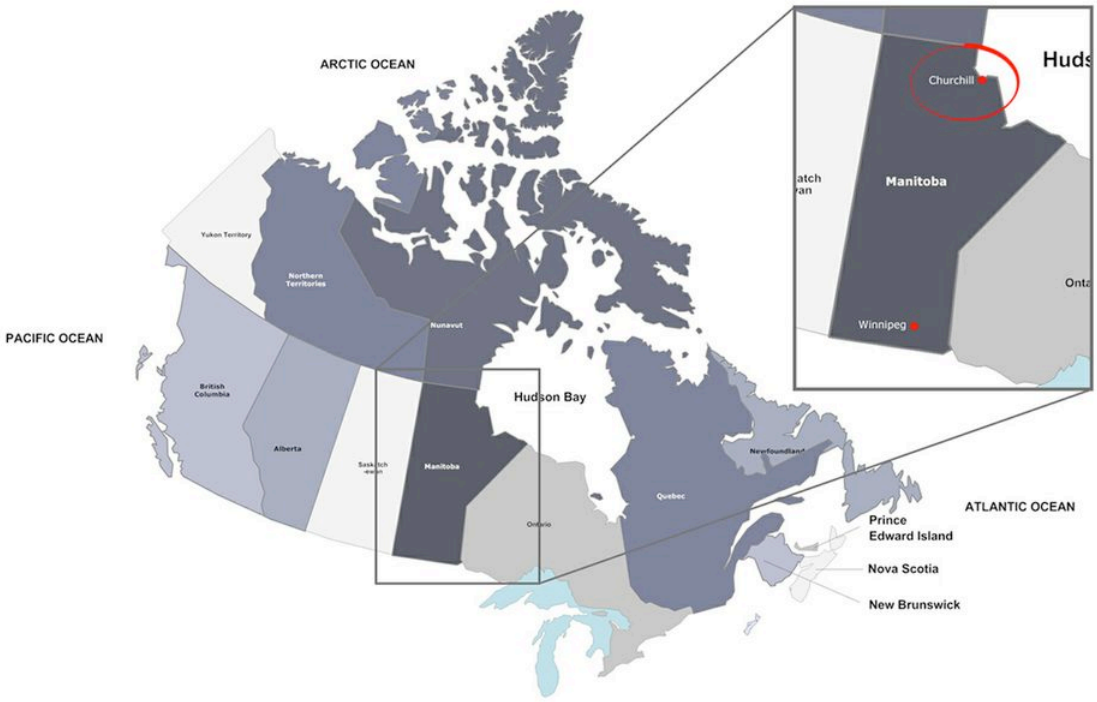
This research project is not aimed at creating a new curriculum or suggesting changes to Manitoba's current curriculum but to add possible activities to enhance certain subject areas being taught in the classrooms of Northern Manitoba community schools. This qualitative research uses a case study method described by Soy (1997) and Stake (2005) to analyze the information gathered to better understand the relationships between youths and elders.

This research focuses on working with the local youths and elders in Churchill, Manitoba to document intergenerational knowledge transfer. Churchill is located in the subarctic region of Manitoba along the coast of Hudson Bay in the northeastern part of the province (58° 46′ 9″ N, 94° 10′ 9″ W). Figure 1 displays the location of Churchill within Manitoba and in relation to Canada. Access to Churchill from Winnipeg is only available by

air and rail. Although the Port of Churchill is accessible by ship, it is not commonly used by travellers. According to Statistics Canada data from 2006 (2007), the town of Churchill had a population of 923 Aboriginal and non-Aboriginal people. The population declined slightly from the previous census of 963 people in 2001. In terms of identity there were 485 Aboriginal people living in Churchill in 2006. This number includes Metis, Dene, Cree, and Inuit groups, with 245 reporting North American Indian status (Dene or Cree), 185 reporting Metis status, and 35 reporting Inuit status. Statistics Canada (2007) also reports a population of 80 children or 45 boys and 30 girls between the ages of 10-14. Even though these numbers by gender to not match the total population of children, these numbers are taken directly from the census.

In the book *Nights Spirits* by Ila Bussidor and Ustun Bilgen-Reinart (1997), the story and history of the Sayisi Dene is told. Sayisi, translates into English as "the people from the east." The Sayisi Dene were hunters and trappers who followed the movements of the great caribou herds. In 1956, the federal government relocated the Sayisi Dene people from Little Duck Lake to Camp 10 and Dene Village, located near Churchill. The movement was due to concerns from the federal government regarding the declining population of caribou in the area. The relocation, however well-meaning, destroyed the traditional livelihood, culture, and language of the Sayisi Dene peoples. The combination of culture shock, poor living conditions, and loss of traditional ways of living, resulted in alcohol abuse, violence, and many deaths. Nearly one third of the Sayisi Dene population perished.

Figure 1 Location of Churchill, Manitoba



1.2 Purpose and Objectives

Purpose

The purpose of this research is to document intergenerational knowledge transfer between elders and youths aged 11 – 14. With the incorporation of intergenerational knowledge transfer into the school curriculum through this case study this research is developed to answer the initial question "Are youths aware of their changing environment as a result of learning traditional and local knowledge?" The research is primarily focused on learning from youths and

elders to provide the researcher with insight into how knowledge is being transferred.

Objectives

There are two main objectives for this research. The first objective is to understand how knowledge is being transferred from one generation to the next. This will look at the transfer of knowledge between generations; from elder's parents to the elders and from elders to their grandchildren, or in this situation, with the children in the community. The second objective is to determine elders' and youth's perspectives on the positive and negative aspects of intergenerational knowledge transfer. This will look at factors that promote knowledge transfer and factors that impede knowledge transfer.

1.3 Rationale

This research can be beneficial to the local residents of Churchill and the teachers and students at Churchill's Duke of Marlborough School. In past research, a survey of Churchill residents ranked poor education as the second highest concern. A total of 15 respondents who noted that poor education was their number one concern (Newton et al., 2002), also made the following comment: "A new curriculum in the Duke of Marlborough School that incorporates the town history and Aboriginal heritage may be an important element of community sustainable development" (Newton et al., 2002). With that said, the results from this research will provide teachers with recommendations to incorporate a new activity into the school curriculum.

According to a survey completed by Regional Health Authority titled *Regional Health Authority: Needs, Assessment*, a local resident commented, "A significant number of students are not excited about learning because the curriculum does not suit their needs and there should be a new curriculum implemented that incorporates practical learning experiences and Aboriginal teachers" (Rawlings, 1999).

This research has made it possible for elders from the town of Churchill to enter the schools as cultural and traditional knowledge experts. The presence of these elders in the school gives students the opportunity to listen to Aboriginal teachings and to learn more about their history and culture.

1.4 Parameters and Limitations

Parameters

The two fieldwork seasons of the study were conducted in Churchill, Manitoba. The dates of the first field season were February 16, 2008 – March 7, 2008. The dates for the second field season were May 12, 2009 – May 31, 2009. All student participants were born and raised in Churchill, Manitoba. The principal and teachers involved had been working at Duke of Marlborough School for two to five years. The elder, had been actively present in the classrooms of Duke of Marlborough School from 2006 – present.

Limitations

Every study has its own limitations and this study is not an exception. I recognize that the findings of this research are based on my own interpretation

and perception but as a student and researcher not as an educator. As well, findings are based on observation and participant observation notes. By going back in time and retrieving notes from my archived files, some interpretations are based on personal recollection.

Due to extreme weather conditions of -50 degrees Celsius and school inservice days, I was only able to meet the students for three days a week in the first field season and four days a week in the second field season.

Chapter 2 – Literature Review

The following literature review will discuss key topics addressed in my research. I will begin this chapter discussing Manitoba's Curricula, specifically for early years through middle years. Then I will define and explain the knowledge claims used within this research. Lastly, I will discuss intergenerational knowledge, learning and influences in environmental education.

2.1 Education: Manitoba Curriculum

All schools across Canada implement curricula issued by provincial ministries of education. In Manitoba, curricula are developed for three levels of formal schooling. The first level, known as the early years, includes Kindergarten through grade four. The second level, known as the middle years, includes grades five through eight. The third level, known as the senior years, includes grades nine through twelve.

Participants in this research project include students aged eleven to fourteen who are in grades seven and eight. In middle years, there are specific skills that Manitoba teachers are expected to teach. These skills are literacy and communications, problem solving, human relations, and technology. The students are to demonstrate these learning skills through six compulsory subject areas. These subjects are language arts, mathematics, science, social studies, physical education/health education and arts education. Each of these subject areas is to be given a percentage of the school day. For example, in grades one

through six, the recommended time allotment for social studies is ten percent. This increases to thirteen percent in grades seven and eight. There are also optional subjects such as basic French, other heritage languages, and Aboriginal studies, which are allotted nine percent of a school day for early years and thirteen percent of a school day for middle years. These percentages are only guidelines for Manitoba schools. School initiated courses and student initiated projects, which allow for integration and the meeting of local needs and interests, are often a consequence of the adjustment of subject time allotments by individual school divisions (Manitoba Education, 2007, p.3).

According to Tannis (1999), the Environment Canada census data for Churchill, Manitoba reports that nearly one fifth (18.6%) of the population over the age of 25 has less than a grade nine education. Researchers must take this data into consideration and determine why these students aren't graduating. What are the factors that cause 18.6% of the population over the age of 25 to leave school? Research conducted by Bushnik, reported by Statistics Canada, states that drop out rates are related to the number of hours worked among other reasons. Across Canada there is said to be more men working than women. About 28% of male students compared to 21% of female students work more than 20 hours per week (Bushnik, 2003, p.10). Bushnik also mentions that by province there are more hours worked in Ontario, Manitoba, Saskatchewan, and Alberta. Other factors related to dropout rates are being of Aboriginal origin, having first learned French, having had a child or living with a partner during the last year in high school, and students who come from families with four or

more siblings. Also, one-third of students who drop out have reported having to repeat a grade in elementary school (Bushnik, 2003, p. 12). Provincially the highest proportion of students who leave school are from Quebec, Manitoba, and Alberta (Bushnik, 2003, p. 12).

2.2 Knowledge Claims

Traditional Knowledge

Environment Canada (2002) noted in their September/October issue of *Science and the Environment* that traditional knowledge is "part of the collective memory of a community, and is passed on orally through songs and stories, as well as through actions and observation" (p.1). Some researchers and scientists refer to traditional knowledge and local knowledge as traditional ecological knowledge and local ecological knowledge, respectively. Traditional ecological knowledge refers to the body of knowledge accumulated over generations by Indigenous people that is based upon experiences in and observation of the natural world that are both spiritual and ecological in nature (Doubleday, 1993). Traditional ecological knowledge is also defined as being what people learn from experience, family, community, and stories handed down from one generation to the next that are about how to live fully and effectively in the environment (Usher, 2000).

Kawagley (1998) notes that Yupiaq heritage can, "bring to the classroom a multidisciplinary, multidirectional, and multisensory learning style, with a total environment, natural and artificial, as the learning laboratory" (p. 141).

Local Knowledge

Local ecological knowledge is defined by Charnley (2007) as "knowledge, practices, and beliefs regarding ecological relationships that are gained through extensive personal observation of and interaction with local ecosystems, and shared among local resource users" (p. 15). Local knowledge refers to "knowledge generated through observation of the local environment and held by a specific group of people" (Berkes and Folk, 2002, p. 122). This local knowledge can be knowledge from Aboriginal or non-Aboriginal peoples. According to Gilligan and colleagues (2006) local knowledge can apply to community members who could be ethnically diverse, yet share common experiences socially and environmentally. With respect to the study before you, both traditional knowledge and local knowledge are used in order to account for the knowledge spoken about or described in interviews conducted with Aboriginal and non-Aboriginal participants in school settings and out on the land.

Combined Knowledge Claims

Traditional knowledge and local knowledge can be combined with scientific knowledge to broaden and expand the views of students in this research. Usher (2000) points out that,

> Traditional knowledge can contribute to a fuller understanding of local environmental processes at a finer and more detailed geographical scale than conventional scientific knowledge can offer … because it deals with outcomes and prediction: what people think will happen and why (p. 187).

2.3 Intergenerational Knowledge, Learning and Influence in Environmental Education

Whether or not programs are consciously promoting intergenerational learning, many environmental education programs promote intergenerational learning. Students act as catalysts of environmental change by influencing their families and peers for environmental awareness and pro-environmental behaviour (Ballantyne et al., 1998; Ballantyne et al., 2000; Ballantyne et al., 2001; Duvall & Zint, 2007; Palmer, 1999; Uzzel, 1999). The study before you, in contrast to the non-formal environmental education programs cited above, is focused on intergenerational knowledge, learning and influence from elders to youth. Moreover, the goal is to use the traditional and local knowledge of elders to help youths to become more aware of their changing environment and to determine, explicitly, the impact on student awareness and, implicitly, change toward pro-environmental behaviour.

In this study, intergenerational knowledge refers to traditional and local knowledge being passed down from one generation to the next. In the paper *Aboriginal Literacy and Education: A Wholistic Perspective that Embraces Intergenerational Knowledge*, Cordoba (2006) discusses the importance of Aboriginal cultural literacy as a distinct philosophy of learning. Aboriginal literacy is seen as learning from the elders about philosophies for life that have been preserved and passed along through oral traditions and kept in the memories of the elders in each community. Cordoba emphasizes that story telling is a fundamental way of educating and transferring knowledge to people

in a community and by acknowledging and owning this literacy as a valid, valued and valuable alternate perspective Aboriginal peoples' contributions to a broader Canadian society will be strengthened (Cordoba, 2006).

Intergenerational learning in environmental education seeks to engage students and adults in local issues and with school-community partnerships. According to Duvall and Zint (2007), these intergenerational partnerships can foster more ownership and involvement among community members and create a more participatory community.

In Yupiaq culture the villagers believe that the most effective way to improve students learning is to infuse indigenous knowledge and worldview into the curriculum (Kawagley, 1999, p. 14). For example, in their schools elders have been invited into the classrooms to demonstrate knowledge through stories and the physical demonstration of skills.

Sutherland and Ham (1992) researched the transfer of environmental information and ideologies in Costa Rica through children and adults. Their results showed that the transfer of information from children to adults was apparent in children bringing home school homework, pamphlets, and learning about or observing school activities. Overall, they came to a conclusion that "although children may pass on environmental information and ideologies to parents, the transfer is often unreliable, and the information exchange is generally vague" (Sutherland & Ham, 1992 as cited in Duvall & Zint, 2007, p. 16).

In multiple case studies, Ballantyne and colleagues (1998; 2000; and 2001) researched intergenerational influence of environmental education through a number of programs. They believe students are the "key audience for environmental messages as they are tomorrow's leaders and stewards of the Earth" (Ballantyne et al., 1998, p. 285). They claim that through the process of intergenerational influence, students can potentially influence adults' environmental knowledge, and changes in attitudes and behaviour (Ballantyne et al., 2000, p. 8). All case studies led to an increase of environmental knowledge within students and adults but were more effective in developing awareness in children. There are still barriers between the knowledge transfer between children and adults. It was noted that 73% of students reported having discussions regarding the programs with their parents at least once and only 28% of students reported having discussions with their parents regarding actions that could be taken at home or within the community (Ballantyne et al., 2000, p. 12).

In Alaska the *Standards for Culturally Responsive Schools* set cultural standards for students, educators, schools, curriculum, and communities. Students cultural knowledge is well grounded in their cultural heritage and traditions, builds on knowledge and skills to achieve personal and academic success throughout life, including the ability to actively participate in various cultural environments, to engage effectively in learning activities based on traditional ways of knowing and learning, and to demonstrate awareness and appreciation of relationships (Alaska Native Knowledge Network, 1998). These skills and standards, intended for Indigenous youths, were intended to improve

the education and increase the academic achievement of American Indian and Alaska Native students in U.S. schools (Castangno & Brayboy, 2008, p. 941). In Manitoba, the Aboriginal Education Directorate is responsible for Aboriginal school programs. Most of the program initiatives involve increasing Aboriginal content in the curriculum, improving heritage language studies and creating employment for Aboriginals in the work force (Owens, 2006).

The goal of the Aboriginal Education Directorate is to provide higher quality education to Aboriginals. Owens (2006) has identified a few problems that have been overlooked. Nowhere does the action plan talk about the importance of ensuring that Aboriginal students acquire basic skills in numeracy and literacy, and there are no evidence that increasing Aboriginal content in the curriculum will result in an improved educational experience. Owens goes on to mention that 33.7% of Aboriginal youths aged 15-29 have graduated from high school compared to 62.7% of non-Aboriginal youth in the population. Owen further mentions that on-reserve Aboriginals are even less likely to graduate than off-reserve Aboriginal students. This suggests that even with increased traditional knowledge in the classrooms improvements in graduation rates are not guaranteed.

Chapter 3 – Methodology and Methods

3.1 Qualitative Research Methodology

The qualitative research methodology employed in this study follows a case study method described by Soy (1997) and Stake (2005) to analyze the information gathered to better understand the relationships between youth and elders. An open-end, semi-structured interview (Corbetta, 2003), observation and participant observation (Babbie, 1998) are the methods that were used to help understand the knowledge claims within this research. The study participants were selected through a snowball sampling approach (Coleman, 1958) allowing each participant to recommend other possible participants. This type of research follows ethical principles and poses no risk and harm to participants.

3.2 Case Study

This research follows the six steps to case study research described by Soy (1997), which is a compilation of techniques suggested by Robert E. Stake, Helen Simons, and Robert K. Yin. The six steps are:

1. Determine and define the research question;
2. Select the cases and determine data gathering and analysis techniques;
3. Prepare to collect the data;
4. Collect data in the field
5. Evaluate and analyze data; and
6. Prepare the Report.

Soy (1997) mentions that case studies are commonly used amongst social scientists to examine "contemporary real-life situations". Case study research can also be defined as "a major approach in much social scientific and education enquiry" that involves a "systematic collection of objective data, and rigorous analysis to arrive at agreed interpretation of the data" (Falmer, 2000, p. 32). Qualitative case studies are characterized by Stake (2005) as researchers spending an extended period of time in the field, personally handling all activities and operations of the cases, reflecting, and revising cases to understanding the full context of the research.

3.2.1 Research Objectives and Methods

As previously mentioned in the introduction, the objectives of this research are:

1. To understand how knowledge is being transferred from one generation to the next. This will look at the transfer of knowledge between generations.
2. To determine elders' and youths' perspective on the positive and negative aspects of intergenerational knowledge transfer. This will look at factors that promote and factors that impede knowledge transfer.

The method used to attain the objectives were:

1. Facilitating discussions concentrating on youth and elder participation (linked to objectives 1 and 2)
2. Interviewing youth and interviewing elders concerning environmental change (linked to objectives 1 and 2)

3. Allowing youth to demonstrate their knowledge of environmental change through a series of activities (linked to objective 2)

4. Facilitating discussions between youth and elders (linked to objectives 1 and 2)

These objectives and methods allow me to comprehend the current elder-child relationship in order to identify if the passing of knowledge from generation to generation is still strong and will help answer the initial research question: "Are youths aware of their changing environment as a result of learning traditional and local knowledge?"

3.2.2 Data Sources and Data Analysis

Following the principles for data gathering and analysis techniques articulated by Soy (1997), multiple techniques for collecting sources of data were used to strengthen the case study. The three sources of data collection for this case study include literature, documents, and observation.

Literature

Literature gathered for this research is accumulated from online journal publications and books. Books were available from the University of Manitoba library system and Winnipeg public libraries. Key search terms were intergenerational knowledge transfer, intergenerational learning, Aboriginal/Indigenous knowledge, traditional knowledge, local knowledge, scientific knowledge, environmental education, and qualitative research studies.

Documents

Documents gathered for this research include field notes, curriculum handouts, e-mail correspondence with participants, and experts in the field of northern research.

Observation and Participant Observation

Observation and participant observation are methods used in this research. By observing youth and elders, I observe what brings youths and elders together, what they do when they are together, what they say to one another when they are together and the tone in which each communicates. It is also possible to observe what gets said about the other or about the knowledge of the other when these two are not in one another's company; for example, when participants were with family members, friends or the researcher. I kept daily journals to log events for each day along with reflections of what was learned and notes on how data can be used. The goal behind participant observation is to provide the researcher with in-depth insight as to the problems regarding environmental change that the community is concerned about. Participant observation is a method based on the researcher participating in events under study and examining the phenomenon from the inside (Babbie, 1998). This is a way for me to create a stronger relationship with the community and to build a closer relationship with the participants. This method was used for meeting and gaining trust from the youth and elders in Churchill, as well as participating in activities that youth and elders did together, separately, and with me.

3.2.3 Preparation to Collect Data

In order to conduct research in Churchill, approval from the mayor and or town council is required. At the University of Manitoba, ethics approval is required for all studies involving humans as research subjects/participants. Where children under the age of eighteen are concerned, consent forms must be attained from parents or guardians. Approval for the study from participating members of the community and the administration and teachers of Duke of Marlborough School was also required. At the University of Manitoba, I completed the Interagency Advisory Panel on Research Ethics' Introductory Tutorial for the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (Appendix A). It is an online tutorial available for students to familiarize themselves with the ethical conduction of research. I also completed the University of Manitoba Joint-Faculty Research Ethics application (Appendix B). The purpose, objectives, and methods of this research needed to be included with the application along with sample questions for the interviews in order for ethics approval to be granted. Any changes within this project, including a change of project title, had to be approved by the University of Manitoba Ethics Board and this approval communicated through receipt of an amendment approval letter (Appendix C). As well, ethics approval certificates are valid for one year. Renewal approvals must also be obtained through the University of Manitoba Ethics Board (Appendix D).

3.2.4 Field Data

Previously mentioned in the introduction, two field seasons were conducted. The first field season occurred from February 16, 2008 – March 7, 2008. The second field season occurred from May 12, 2009 – May 30, 2009. There are three sources of field data collected in the two field seasons. They include participant data, interview data and data obtained from the use of traditional knowledge kits.

Participants

The participants involved in this research were selected through a snowball sampling approach. The snowball sampling approach is a method that allows the study participants to recommend other participants who may be more knowledgeable in the field of research. For example, you begin by interviewing a participant with whom you may have a close connection and she, in turn, recruits a friend or a relative to be involved. In a sense, this is a sampling technique that follows the chains of sociometric relations in the community; it is a good way of tracking down the 'leads' from one person to another (Coleman, 1958). Usually working with a community liaison will help further the research in the direction of a community-based project. Once participants agreed to participate in the research, an Informed Consent Document form (Appendix E) was signed. This allowed me to work closely with the participants to learn from their experiences and their knowledge.

Conducting Interviews

The importance of conducting interviews with elders was to learn what knowledge is being passed down from one generation to the next as well as to document their knowledge and to show an appreciation for their knowledge learned. Interviews were conducted with youths to figure out what knowledge was learned and whether or not they were interested and wanting to learn more. Conducting interviews with the teachers allowed me to get a better understanding of the skill levels of the students, how traditional and local knowledge is being incorporated into the curriculum and any future plans for continuing to incorporate traditional knowledge into the curriculum.

There are many different ways of conducting interviews in a qualitative research study. The open-end question format used in this research allowed me to gain a breadth of knowledge from the participant's answers. Also I have developed an idea of the topics the participants were most interested in by judging the amount of information gathered on particular topics. The goal behind open-ended questioning is that the respondent is at liberty to formulate a reply as they wish, thus the transcribed interviews are based on verbatim responses (Corbetta, 2003).

Another qualitative method of collecting data is using a semi-structured interview approach. This method allowed me to guide the participants through a set of questions, while also respecting the fact that participants have much knowledge to share. Interviewees are able to lead the discussion and talk freely about what their interests are and what are their biggest concerns with respect to

environmental change. Even though there is a pre-determined list of questions to be answered, the interviewer must be mindful and not to deviate too much from the list of topics. What semi-structured interview accomplishes is to offer "a standardization of information required by the 'context of justification' while remaining receptive to those unknown and unforeseen elements that belong to the 'context of discovery'" (Corbetta, 2003, p. 269).

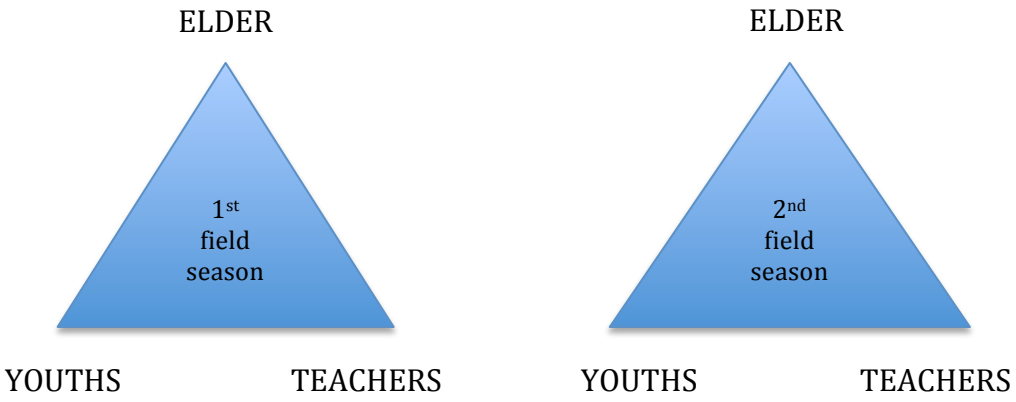
All interviews from the first and second field season were audio-recorded and I made hand written notes for reference to guide me through the transcriptions. Again, all transcriptions are based on verbatim responses to the questions.

3.2.5 Evaluating and Analyzing Data

Validating the accuracy of findings can be challenging in studies such as this. Researcher bias was a concern being that I am not an educator and the results are based on observation and participant observations and my reflection on what was learned through the elders and youth in Churchill. To look at the larger picture, I used the triangulation theory to validate the research (Creswell, 2003; Stake, 2005). Stake (2005) suggests that triangulating the descriptions and interpretations will help me gain credibility. Member checking was another way that was used to validate the findings of this research (Creswell, 2003).

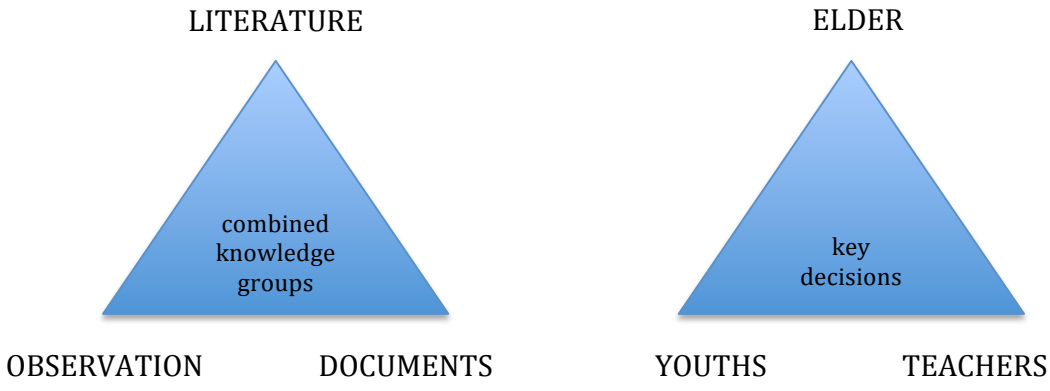
Using the triangulation theory (Figure 2), I analyzed each field season separately and determined what each knowledge group shared with me. I then compared the two field seasons to find similarities and differences. This helps to strengthen the themes that arose in the analyzed data.

Figure 2 Triangulation Theory – Knowledge Claims



As mentioned in the previous section 3.2.2, my data sources came from literature, documents, observation and participant observation. Figure 3 below shows the types of information gathered from the combined knowledge claims and data sources that were used to identify common themes from these multiple perspectives. My on going reflection has not been included.

Figure 3 Triangulation Theory – Combined Data Sources and Knowledge Claims



Ten interviews were conducted in the first field season. Nine of the ten interviews were with youths and one interview was with an elder participant. Of

the ten interviews, only six youth interviews and the elder interview were used for this research. Due to the lack of signed consent forms received at the end of the field season, the remaining four youth interviews could not be used. In the second field season, twenty-one interviews were conducted. Eighteen of these interviews were with youths, one interview was with the elder and two interviews were with teachers. The interviews with the elder and teachers are used in this study. Thirteen of the youth interviews were used. Eighteen of twenty-one students signed a consent form to participate in the study, however, not all consent forms were signed by a parent/guardian. As a result, the information from the remaining four students could not be used. Interviews with youth were 15-30 minutes in duration. The interview with the elder took place over a period of approximately two hours and interviews with the teachers required approximately one hour. I conducted and transcribed the interviews of the participants from whom consent had been given.

By comparing the findings and the reviewed literature, particularly on Manitoba curriculum, traditional and local knowledge, and intergenerational knowledge in environmental education four knowledge groups were as established: (a) youth, both Aboriginal and non-Aboriginal who know and have opportunities to learn traditional knowledge vs. youth, both Aboriginal and non-Aboriginal, who do not know or have opportunities to learn traditional knowledge and (b) youth, both Aboriginal and non-Aboriginal, who want to learn more traditional knowledge vs. youth, both Aboriginal and non-Aboriginal, who are not interested in learning traditional knowledge.

When analyzing the data (i.e., interviews, observations and participant observations), results were calculated using low, moderate, and high levels of interaction. The highest result for one of the themes was 12 participant agreed views. As such, the constructed scale ranged from 1 to 12. Low levels of interaction were based on four or fewer participant agreed views. Moderate levels of interaction were based on five through nine participant agreed views. High levels of interaction were based on nine or more participant agreed views.

As previously mentioned, member-checking was another method used to validate the findings of this study. All interviews were tape-recorded and I made hand written notes following each interview. The majority of interviews were transcribed in the field, and participants were given the opportunity to read and edit what had been audio recorded. Once approved, a Transcribed and Edited Interview Review Form (Appendix F) was signed, thus giving me the right to use the information in my thesis, reports, and publications.

3.2.6 Report

The reporting stage of this research is the dissemination of the thesis and communicating the research findings to the public through presentations at conferences and published refereed papers.

3.3 Traditional Knowledge Collection Kits

The Schools on Board Traditional Knowledge Collection Kits were created by Lucette Barber (2009) and used in this research as an activity for incorporating traditional knowledge in middle years curricula. The activities

provided an opportunity for me to participate in activities with youth without the presence of elders. These Traditional Knowledge Kits included a backpack that contains the following items:

- Getting started in Oral Traditions Research Manual
- Negotiating Research Relationships with Inuit Communities Manual
- Consent forms
- Sample interview questions
- A digital cameral
- A digital voice recorder

With these items, participating students were able to interview and record the traditional knowledge shared by community members that they identified as elders. A second activity in the kit, named *Image Activity*, is a collection of photographic images portraying evidence of climate change and sustainable development. Each participant selected a photograph that had personal relevance and explained the importance of what was being portrayed. The researcher and teacher further developed the *Image Activity* by taking the grade 7 students out for a half-day trip and having students photograph people, places, and things that were of relevance to them. A select number of photos were selected and each participant was responsible for writing reasons why a particular photo had personal relevance.

3.4 Limitations

Attaining the consent for the research from the Mayor of Churchill, the principal and teachers at the Duke of Marlborough School was easier than attaining parental consent for student participation. Most students were exited and willing to participate but six of twenty-one students were unable to have signed consent forms from their parents or guardian returned to me. The limited number of interviews with participating youths hindered my research because the study is solely based on documenting student knowledge and there may be students who knew a great deal about the environment and were unable to share this information with me.

Since the research occurred in February-March 2008 and May 2009, two students who participated in 2008 were no longer attending the school or living in Churchill during the second field season. Two new students were recruited to participate but the activities from the first field season were different from those in the second season.

Chapter 4 – Results and Discussions

The results of this chapter are organized into three categories based on the case study design described by Soy (2005) mentioned in the previous chapter. These categories are:

1) Participants and their knowledge
2) Participant Observation
3) Observation

Discussions related to traditional and local knowledge are mentioned following each topic. Reflections and interpretations discussed in this chapter are based on the knowledge gathered from participants. If errors are made, the researcher takes full responsibility for misinterpreting and understanding of the knowledge learned.

4.1 Participants and their knowledge

The elder in this research played a huge role in terms of what information is being shared and what the elder hoped to achieve. To get a better understanding of the elder and what knowledge was to be shared, I conducted an interview prior to entering the classrooms.

According to Caroline, an elder is not necessarily calculated by age and there are no specific elders that community members go to for advice. They are individuals who people respect. She commented,

> To me, an elder is someone that is older than me. They don't have to be over 65 but someone that knows you and teaches you something that is important. You take it in and one day down the line, you know that this person taught me how to do

> this. First of all you need to respect the elder. You would listen to them and you try to gather up what they are talking about. In the Sayisi Dene culture it is really important that the elders are listened to and an elder is someone you can talk to and a person that you respect. An elder is someone that you can ask questions and they can tell you the answer (Bjorklund, 2008b).

Caroline then explained how knowledge was learned and from whom this knowledge is learned.

> I learn from my sister, my aunt and some of my relatives that live in Tadoule. They go out camping and different things, so I learn from them. The most important thing is you need to listen and you need to watch what to do. For me, I really didn't know lots but I was very lucky that I have a husband that knew how. I didn't learn anything until I sobered up. I refused to learn. The sad part of it is, I wished I would have sat down and listened to my grandfather and my mom. At the time, I thought it was a waste of time so I didn't want to learn until I learned from my husband. He taught me that it was important to learn. I learned from my husband more than my grandfather (Bjorklund, 2008b).

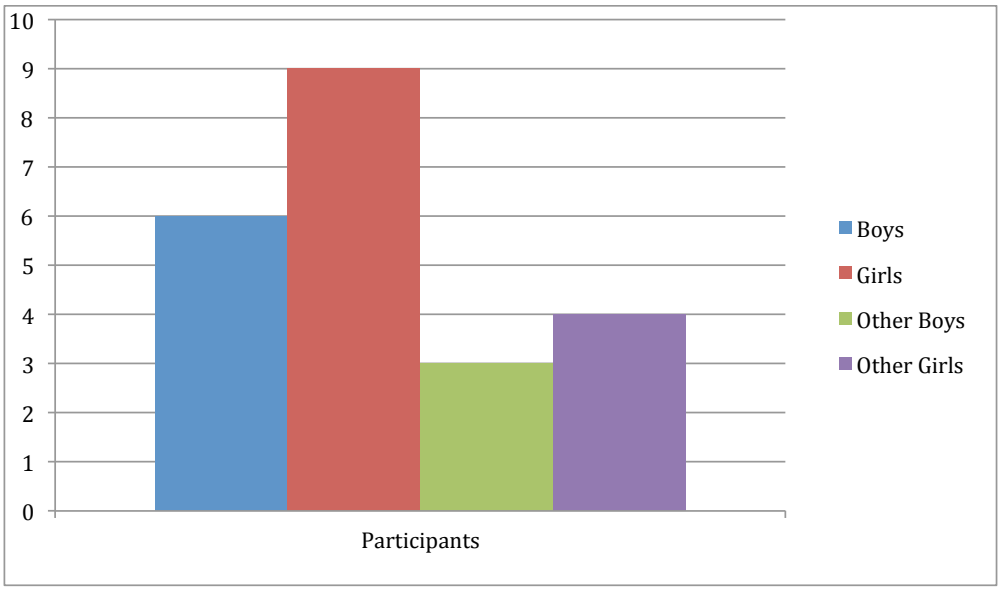
With respect to this research and discussions of the knowledge of elders, I would like to make clear that this can be traditional knowledge from either Aboriginal and non-Aboriginals. Both are equally significant. Moreover, the knowledge of elders may be gender-based. That is, males may share what they know of hunting, tool making, and way finding; females may share what they know of sewing, food preparation, and child rearing. Thus, depending on their expertise, elders transfer different kinds of knowledge.

As the elder shares her knowledge in this research, knowledge is transferred through a presentation in the form of show-and-tell. Tools used in the presentation are made specifically for the elder from family in Tadoule. These are traditional tools that the Sayisi Dene people used to survive on the land.

Some tools made miniature in size are just for showing purposes. When these tools are not used, they are on display in the Duke of Marlborough School library for everyone to see. The elder mentioned that she learned her knowledge from her family and husband. In the past, knowledge was transferred and learned by listening, watching and working alongside family members. Children learned through many years of observation and trial and error. Now when the knowledge of elders is shared in the classrooms of Duke of Marlborough School, it tends to be learned by listening and watching. There seems to be little to no trial and error practice. Such hands-on learning, if it occurs, appears to happen in families. As one example, a few students mentioned that they go out hunting.

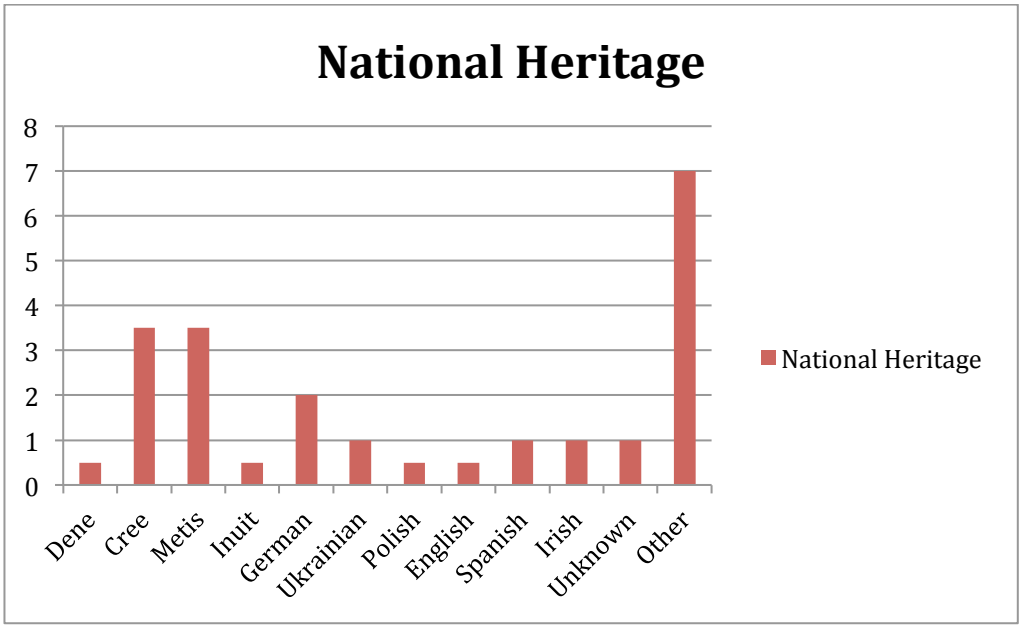
Participants in this study were registered as Grade 7 students in 2008 and as Grade 7 and Grade 8 students in 2009. Table 1 below describes the number of boy and girl participants. There are 6 boys and 9 girl participants. The boys and girls listed as other are participants who were often absent and/or without consent forms; therefore, their information was not used.

Table 1 Number of Student Participants



Participants from both field seasons were asked their national heritage. Table 2 shows the results. Students who are of mixed ethnicity are counted as .5 under each category. Of the 15 participants, 3 are of mixed ethnicity. The unknown column is based on one participant who was not available to answer the question. The other column is based on the participants who are often absent and/or without consent forms; therefore, their information was not used.

Table 2 Student Participants National Heritage



When I asked questions about traditional knowledge and its definition, all students understood and had an idea of the meaning. Students generally agreed that traditional knowledge means:

"Learning about who you are"

"Learning about your culture and how things were and how things are now"

"Learning knowledge being past down from an older generation"

"Learning other peoples' backgrounds"

"Learning things that happen a long time ago in terms of Aboriginal stuff"

"Learning from elders telling stories"

When I asked if the students practiced traditional knowledge, three students responded, "Yes, beadwork". The remaining twelve students responded,

"No", "Kind of but not really", "Sometimes" and "Not entirely." Students then described some things that they do participate in what may be considered traditional knowledge:

"Sewing mitts and beadwork"

"Going hunting"

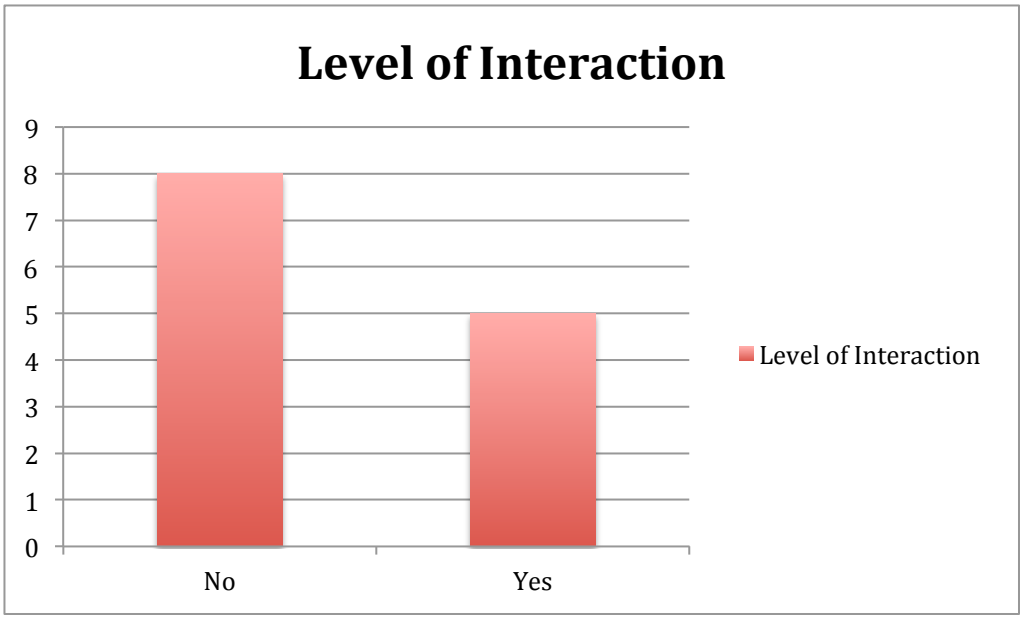
"Speaking a Native language"

"Eating traditional foods"

These responses show that students do have an idea of what traditional knowledge means and do practice aspects of traditional knowledge. The elder's presence in the school since 1996 has likely helped to build student and teacher awareness of traditional knowledge.

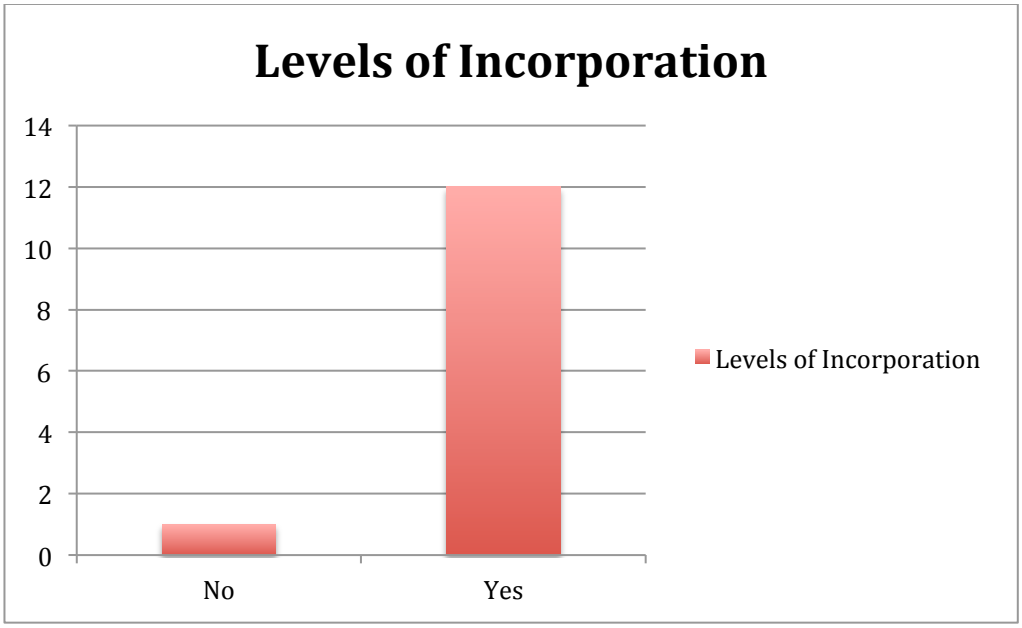
Table 3 below illustrates a moderate level of intergenerational knowledge transfer from youth to elders and elders to youth. When I asked the students and elders about whether or not they see intergenerational knowledge transfer happening, the elder says she tries her best to share what she knows. Eight students replied, "No" they don't see a lot of intergenerational knowledge transfer happening but five of the eight says their parents do try to teach them about traditional activities like hunting. Five students admitted, "Yes" they do see a lot of intergenerational knowledge transfer happening in school with the elder and at home with their parents.

Table 3 Level of InTable 3 Level of interaction



I also found high levels of interest in incorporating traditional and local knowledge in education. When I asked the students and teachers about traditional and local knowledge in education and if they can picture more in the future, almost all replied, “Yes”. Table 4 below shows twelve students replied, “Yes” they are interested in learning more, while one student said, “No” they are not interested in learning more.

Table 4 Levels of Incorporation



Students and teachers from all grade levels acknowledge the importance of intergenerational knowledge transfer and the linkage and usage of this knowledge in the classroom.

4.2 Participant Observation

As discussed in the previous chapter (3.4.2) I participated in activities in which youths and elders were involved together and activities in which youths were involved or elders were involved.

Activities in which I participated with youths and elders occurred in the first field season of February 2008. Activities conducted included beadwork and presentations on Sayisi Dene culture. The elder, Caroline had been working with the students in Grade 7 for a few weeks since the beginning of the second term. Moreover, at that time, she had been present in the classrooms of the Duke of Marlborough School for four years sharing stories and making crafts with

students from all grade levels. In the second term, students began by doing beadwork and worked up to making a pair of beaded moccasins. Caroline provided design templates for students but also allowed students to choose their own designs. Of the twelve students in Grade 7, only 1 student refused to participate. Students participated in beadwork by choice. The incentive for participating is course credit. The teacher, L. Smith uses thirteen percent of the school day for beadwork by taking the time from social studies and history classes every other day. While student participants were busy with the task at hand, I asked the students about their work. Examples of students' responses follow.

> I think beadwork is really hard. The beadwork that they did before must took a really long time. I enjoy Mrs. Bjorklund coming in to do beadwork with us (Maczuk, 2008).
>
> I think beadwork is really fun. It's cool. I've done mitts before and not beading (Daley, 2008).
>
> I think the beadwork is really cool. I like that we can make slippers out of them later. I think it's important to learn the skill (Spence, 2008).
>
> I think the beadwork is really fun. I like that we are making moccasins but it's not important to learn (Shields, 2008).
>
> I think the beadwork is really fun. Sometimes it's frustrating and hard. No matter how hard I work it doesn't seem like much (Campbell, 2008).

All students appeared to enjoy the activity a great deal. They realized that it is hard work but a useful skill to learn. One student enjoyed the activity but did not think it was important to learn.

Seeing the different patterns the students developed and how personalized some designs were, I was inspired to create a design just as ambitious. Following my background, I drew my last name (Chow), in Chinese. Caroline explained the steps and the tools to use. I quickly learned by observing and through trial and error.

In the few weeks of beadwork and getting to know the participants, the student's comfort level with me grew considerably. Conversations of hobbies, education, family and friends were frequent. Students and the elder shared common interests of being outdoors and travelling around via snowmobile and/or four-wheeler (also known as an all-terrain vehicle). Several short discussions focused on traditional knowledge even though learning how to sew and the process of beadwork are traditional ways of learning for females.

It was very important to the elder that a traditional knowledge lecture with artifacts was presented to the students. The teacher, L. Smith, was also very enthusiastic about the presentation. The following passage describes what was said to the students, the reason for the presentation, the history of the Sayisi Dene and what is to happen next. To maintain the personal story of the elder, the following passage, as recorded and transcribed, is presented in its entirety.

> I just want to say it is really important to be who I am today. Years ago when I was taken away to school, I was not allowed to be who I was, so it was really hard. I went through a phase where I was lost. I didn't know who I was because I was not allowed to talk my language and I was not allowed to practice my culture. So it was something that I didn't know.
>
> My kids were in school and they didn't know who they were. My youngest daughter came home when she was in

Kindergarten and the kids called her an Indian. And she said, "Well I'm not an Indian." And I said to her, "Who are you?" She says, "I'm Rachel Bjorklund." Because deep down I didn't know who I was, so how can I tell my kids who they were? So its really, really important that you know your nationality. It doesn't matter who you are, you could be Ukrainian, you could be French, you could be Irish, Cree, Inuit, Dene, it doesn't matter. But be proud of who you are because that's one of the reasons why I came back into the schools to start teaching the kids about who they are and their culture.

I don't talk much about the culture itself, but doing beadwork and doing sewing is important because just in the last few years I had to do things. When I lost my husband to cancer, all of a sudden I was lost and I didn't know what to do. So to pick up spare time I started to do beadwork and I started to do sewing.

I have a sister. She's not only my sister, she's my mother and she's my teacher. She's the one that leads me to do what I do today. And it's really important. So a few years ago, I was asked to do a presentation for university students. The first year I just cried because I was just lost and I didn't know what to think. We were labeled as "no good Indians". I carried that as a child growing up until a few years ago when I started to see that culture was really important.

My culture as a Sayisi Dene has a value of gift that I did not know. Hundreds and hundreds of years ago my people lived out on the land and lived off the caribou. When they lived off the caribou, there were three major things on this animal that can be used; the tools, the clothing and the food.

We are very lucky that we still have an elder that was able to do some of the stuff for us so we can present it to the class and tell them that this is how a hundred years ago or a few hundred years ago that my ancestors had used out in the land. There was no such thing as pots and pans, sugar or tea or anything. When you lived out on the land you had to survive somehow. Things they needed to survive on were fish, any kinds of animals like beaver, muskrat, rabbit, ptarmigans, geese, ducks, caribou and moose. And that's how they survived on. In summer time, what they would do when we lived out in Duck Lake I remembered as a child growing up my mother was a single parent. My dad died when I was very young so when he died we lived in North River. My uncle came and got us in

winter time on a dog sled to go to Duke Lake and that's where we lived and from there we were taken away from home, from our family to go to boarding school.

So when we lived there in the summer time I remembered my mom used to set up a net and she would dry her fish, smoke her fish and dry and pound it into pemmican, into powder, to mix it. She would mix it with either sugar or berries off the land and then she would put it into a little bag where we can then put it underneath the ground so it will stay edible and not go moldy. They did the same thing with the meat, the caribou meat. You smoke your caribou meat and you pound it and then they had no such thing as butter or lard so they used caribou fat and melt the fat and the bone marrow. When they used to melt the fat off the caribou it used to come out just like little popcorn. We used to call it Indian popcorn. Once it cools off, we used to eat it with bannock. We called it our Indian popcorn for the longest time when we were growing up. So these are the things that I learned and it was really important.

Just before my husband got sick I was laughing at school, teaching as a teacher's aide, 95% of our children are Native. Ninety-five percent of our children don't even know who they are. It's not the children's fault, it is our fault because we don't even tell our kids who they are and they should be proud. I remember a couple years ago in Grade 5, one of the kids asked me who or what nationality I was, I turned around and said I'm Sayisi Dene. And my grandson got up and said I'm Sayisi Dene and proud of it. It made my heart feel really good because we tell our children or our in-laws to be proud of who they are and carry the message from there. One day I hope somebody will come in here when I'm gone to teach the Dene culture, or the Cree, or the Metis, it doesn't matter. Because the gift that was given to us is very valued. We were not allowed to practice it. I wouldn't go into details of what happened to me because it is not important to me right now. The important thing is for me to pass the message of the Dene culture that was so rich in value, as a gift that was given to us.

Thousands of years ago when they lived out on the land, they survived one way or another and they used the caribou and moose. That animal of the caribou, every part of the animal was used as tools, clothing, and food. We were watching a video last night. It was called Nu Ho Ni Yeh, meaning Our Story. I don't know if any of you kids have seen it or anything, but we were watching it and I get very emotional at times so its

really hard for me to talk when the movie is on because it was my family. My family was hurt for so many years.

So I'll start off with the caribou. The caribou hide (Figure 4). When you kill a caribou, the Native people don't kill a caribou to go slaughter just to say, "Okay, we're killing a whole bunch of caribou" and I'll come back into town and say, "Oh, well I killed ten caribou and leave the caribou meat out in the land." We kill caribou so we can share it with people. We were only allowed to kill so many. In the community itself had a lot of people so they would feed the kids, the elders and the adults. So when you kill the caribou and skin it, you will see all the sinew and the fat and everything else. To be able to clean it, you have to use tools.

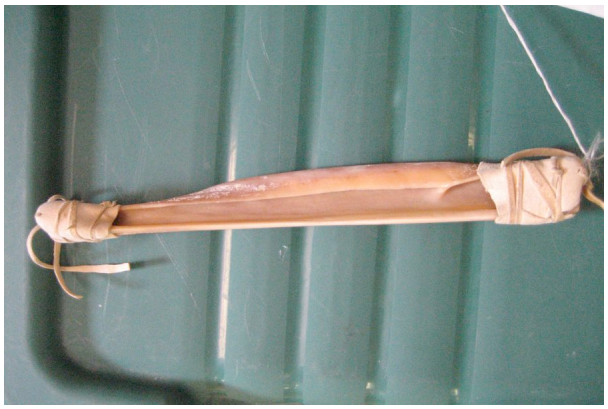
Figure 4 Caribou Hide

So what they did was put the caribou hide over a little log and they would start scrapping it and they have two major tools. This is called a flesher (Figure 5). This is a caribou bone that's made up and the caribou hide up on top. You would start scrapping all the fat and the sinew off.

Figure 5 Flesher

The scraper (Figure 6) is off a caribou bone. They would keep the caribou bone and what they would do is use a rock to sharpen it. They would put two pieces of hide so when you are cleaning the caribou hide, it wouldn't slide off. This was really important. These are the 2 main tools they use to be able to clean the caribou.

Figure 6 Scraper



Once it is clean and everything, some people would think, "Oh its really gross" but when you look back about two or three hundred years ago when they didn't have no such thing as commercial hide and things. So what they would do is soak the caribou hide and they would spread the caribou brain all over it. When I first heard about it I thought, "Oh that's really gross" but I am forgetting that my ancestors did it to make the hide nice and soft. The reason why we use the brain is because they use the hide, it gets nice and soft and they would just fold it over and soak it, maybe for a day or so. They would go back and use the same tools to scrape it and they would hang it up outside and then when it gets nice and soft they would start

using it. They would use it for a blanket, pillowcase, mattress or even a teepee and parkas and all sorts of things. I have a picture of my granny where my granny was wearing a caribou parka. I also have a picture of a little girl wearing a caribou snowsuit that was made.

So what they would do now that it is all clean they would use a knife. This is called a crooked knife (Figure7). They use it for plain, to carve things. They use this to take all the fur off.

Figure 7 Crooked Knife

They didn't throw the fur away. They would put it in a bag and let it dry up on a rack. They could re-use it. When they put the hide together, they would put it where the baby is so it would be nice and soft when you are carrying the baby. They would also use it for a blanket or a mattress or pillows and other things. Once it is cleaned you scrape it and put it away. You would have to turn around and start making a hide. Before all this, it's really rough. So what you would have to do is go back and soak it again and use the caribou brain. They didn't have any tubs or anything like that so they would have to use water wherever they can find. So when it comes out soft. Some people would leave it out in wintertime, they would leave it out on a line and so it would be nice and soft and they would scrape it.

Can you imagine what it would be like if I made you a pair of slippers and say, "Okay we are going out into the land" but how long before it gets dirty, you know?" So the women did think of something. They start smoking it. They would smoke the whole hide and it would be sewed down all they way. They would have a teepee and they would put it in the middle. They would have to watch the caribou hide to make sure they didn't

scorch it or burn it. They would make mitts, wrap around, parkas, mukluks (Figure 8) and other stuff. Before the Europeans came, there were no such thing as beads for the fur, it was just plain. Inside, they would use caribou fur to make a lining inside the mukluks. In the summer time they have little wrap around they would make it for the little babies. So when they are walking, it will be nice and soft. In the winter time, they would put caribou fur inside to their feet would be nice and warm.

Figure 8 Mukluks – made for C. Bjorklund's granddaughter

When they make these they never had any thread. We are looking at 200 years ago. We didn't have no thread. So they use the sinew (Figure 9) of the caribou. That's the back of the caribou. It is called the meat tenderizer. You would scrape it off and hang it up. I remember when I was a little girl, my mom used to have it outside her tent. A whole bunch of them and they were tied up, she was drying it out and I thought, "How come mom had all this and there are no meat on it?" Years later I found out they used this for thread to sew everything they needed. They would use it for everything, canoes, sleds, dogs, harness and other things. It is hard enough that you can use almost anything on it. They would use it to make everything but they never made fancy things. They make sure they were prepared for the winter because as soon as winter came the family would start traveling from one are to the other. While we as the people call it, we follow the caribou

herd. Wherever the caribou went, we followed them. So some people used dogs and they would put stuff on their dogs and some people would carry it on their backs. So that's the way it was for the longest time.

Figure 9 Sinew

This fishing hook (photo unavailable), again, it is a bone and sinew and wood. You ice fish on it. What they would do is cut up a piece of the caribou and somewhere on the caribou bone they would make a hook and they would put it on the ice and they would fish. When they were fishing, if they caught a fish, it would automatically come up. And you have the fish for dinner or supper. Sometimes they would have it for breakfast because there was no bacon and eggs or cereal. It was either meat or fish that they would have. So it was really hard, it was a hard life. This is a fishing rod.

The harpoon (Figure 10) was used to kill caribou. There was no such thing as ammunition or guns. So what they would do is sharpen an antler and make it a harpoon. It's long. They would go out on a canoe and kill a caribou. My elder, my granny turned around and said the person that would kill the caribou would try to hit it by the heart so the animal wouldn't suffer at all.

Figure 10 Harpoon [Lance]

The small animals like birds; slingshots (Figure 11) were used for ptarmigans, ducks or any kind of animal that was small. They would put a rock and you would just try to kill a bird or ptarmigan.

Figure 11 Slingshot

They would snare rabbits. They used the sinew. There was no such thing as snare wires. On top of it, they would soak a whole bunch of them and put them together and tie them and put it into a ball and make sure its wet. They would weave their fishnets and use the nets.

My husband and I, before my husband got sick, we used to go across the river. We made a fire. He says to make a fire so we can make some tea. We used to love going out there. I think it was about one or two years after we were married. And you now the sad part is I did not even know how to make tea or make a fire outside. Here I was, a grown woman. Because I didn't even know who I was, I started to cry when he came back and brought some wood back. He said, "How come you

didn't start a fire?" "Because I didn't know how." Now a day we can go make a fire and tea. I thought "Well we didn't bring any water so how are we going to make tea?" But he said, "All you have to do is scrape some of the snow off and go inside and melt the snow and you make the tea. You boil the water and make tea like that." That was just one of the things I didn't know how to do for a long time.

One of the other things is I didn't know how to make was bannock. I made bannock and my mom hit it on a table, it was just like a brick rock. She threw it out and said, "Look what they did to you. You cant even make bannock." That hurt. It was just like sewing, I was your age when I was sewing I made my little wrap around. Because I made a mistake my mom ripped it open three times. I walked away and I never did any sewing until now. Because I was stubborn, I didn't want to do it. The important thing today is you learn. You make a mistake and you go back and check it and you learn from your mistake.

They have decoys, geese decoys (Figure 12). This is a piece of hide and wood but they burned it and tried to shape it into geese decoys. They are bigger than this. They put it out on the lake and then you kill the geese.

Figure 12 Geese Decoy

Years ago, hundreds and hundreds of years ago I found out about this, owl lure (Figure 13) in hard times, it's used to attract a snowy owl within the arrow range. I thought, "What is

this used for?" You know what, when you were out on the land hundreds and hundreds of years ago when there was no food, you have no other choice but to get whatever you could. What they did was they would put it on the snow. They took 2 pieces of caribou fur, dried it and used the sinew. This was used a lot.

Figure 13 Owl Lure

An awl (Figure 14) is used when you were sewing the caribou. There is no such thing as needles. So they would put holes in it because this is thick that they aren't able to put the needle through. Again they use caribou bone to make the needle. It is not fine like the needle we use for beadwork it would be enough not to break and they would use the needle to sew their parkas and whatever they wanted to. This was used a lot. Its just 2 pieces of caribou bone they used. There are lots of animals we were able to use.

Figure 14 Awl

This is a piece of beaver fur (Figure 15) they would use when it was clean, they would use it for mukluks, mitts, hats and whatever they wanted to make out of it was used.

Figure 15 Beaver Fur

Babies had toys they would use too; a baby rattle (Figure 16). It is a piece of caribou hide and wood. Before you sew this, the caribou hide has to be wet and when its wet you sew it and hang it up and let it dry. When its dry you get little pebbles put it inside and it makes noise for the baby.

Figure 16 Baby Rattle

Young mothers would have their babies, and because you and your child are out on the land you couldn't carry your baby just up on your arms. You can tie it. So what they would do is they would make cradles (Figure 17). Two or three hundred years ago before Europeans came they didn't have no materials. They would clean the caribou hide and sew it on. It wasn't fancy. It was plain wood what was used and we make holes in there to tie the sinew. There was no such thing as nails back

then. They would put this over their backs where they carry the baby. Everything inside was the caribou hide.

We always wondered what would happen when the babies got dirty, where are the diapers? They use moss. We call it mosque bags. What they did in the summer was gather up a whole bunch of mosque and they would put it up on a rack and smoke it. That way all the insects and any kind of little things would be all smoked out. They would put it in the bag and when they go out into the land they would use it. What they would do is, if a baby gets dirty, they would untie it and take the mosque out and give it back to mother earth, whatever we were not able to use.

They would put their babies in. They would have a willow over and they would have a hide so in the winter time when you are carrying your baby, they baby is out of the wind. When they carry the baby on their back, you know that they baby wont freeze their face or anything. When a young mother has two or three kids, they're not going to stop every five minutes and feed the kids. The mother would turn their babies over and breast feed the baby and uses the hide to cover up. Breast-feeding was the only way for a baby to survive years ago. There was no milk. If a young mother has a baby and she couldn't breast feed, another mother would help the baby survive and would breast-feed the baby. It was really important that they did that long ago.

One of the things I learned, you know the bubbles off a fish, when you clean the fish and you see the bubbles inside, what they would do is take the bubble out and wash it. At the end they would make a little hole and hang it, and make sure that it is like a little nipple. They would put the milk in it so they baby can suck on the milk of another mother. There was no such thing as a baby bottles then. It was really fortunate that the babies survived then. (Jack fish because it was stronger).

The young mothers work in the spring time. They would hang their babies up in a tree and they swing their baby or leave it up against the tree or a wall. The mothers would be sitting on one side and the babies on the other. It is important that they used it a lot. One of my eldest boys, my mom used to carry my oldest boy in one when he was a baby. Now I wish I should have taken a lot of pictures of it because I didn't know down the line I was ever going to talk about the Dene culture.

Figure 17 Cradle

Earlier I said every part of the animal is used and every bone is used. These are caribou toes (Figure 18). They would boil it and let it dry and they would make holes. This is a game. When you get it in, you would get a second chance. These are things that were used a lot for games.

Figure 18 Caribou Toes [Ring and Pin Game]

Those are the tools used and it was really important. When the men went out hunting in the winter time they are looking for caribou while they were walking. This rattle, it is all caribou bones (Figure 19). They put it together and put it on their belt. When your walking it makes noise. On the other side there are caribous. The caribous would hear it and the hunters would have a chance to kill the caribou.

Figure 19 Rattle [Caribou Hunting Lure]

To me, our culture was taken away and we went through a lot of bitterness. Today we are very grateful. The drum was taken away from us. We were not allowed to play the drum. The drum (Figure 20) was used for any kind of important things like weddings, funerals, and Christmas. I remember as a child growing up in Duke Lake all the trappers and hunters would come back just before Christmas and they would have a feast for a whole week and a half. There were all the furs and they would take the furs to the trading posts and trade it. There was no such thing as money then. They would trade it for their ammunition, tea, sugar, and milk and among other things. So they would have enough to go back onto the land. I remember we used to sit underneath a table as kids listening to the drums and the people would dance. It is really important. It's apart of spiritual healing. I did not know this is apart of spiritual healing until my elder have talked to me. The drum made me grow up to be who I am today. When I listen to the Dene music, it makes me stronger. To keep practicing to be who I am.

Figure 20 Drum

I lost one of my kids at birth because I signed a piece of paper I didn't know. They told me it was a volunteer placement so I signed the piece of paper. I found out 6 months later after my surgery, I went back to get him, they told me he was adopted. There was nothing I can do about it. For 21 years I did not see my son. When I sobered up, my son came back into my life, in '84. When he came up to visit, I was all excited and I wanted to feed him caribou and everything I can think of to do with the culture. So he was up here to visit me about two or three years ago for three weeks. Just three days before he was leaving, he never calls me mom for a long time. I didn't blame him. He just called me Caroline. "Carline, you know what?" he says, "Before I came to Churchill, I was a vegetarian." And here I was feeding him caribou meat and everything. A vegetarian is somebody who doesn't eat meat at all. I said, "Well what kind of Indian are you anyway? You're never going to survive out on the land." That was my story and I always laughed about it all the time. About 10 years ago, he turned around and started to call me mom. And he said, "Mom, I eat meat now." I said, "Good. Because if I put you out on the land you're going to survive." So we laugh about it now.

One of the main things when I came back into the culture was that when I come into the school and I see some of the kids a few years ago I said to this one kid, "What nationality are you?" He said, "I don't know." But I knew the family and I said, "Doesn't your family tell you who you are?" He said, "No, why bother?" That hurt. So it is not the children's fault they don't know who they are. It is our fault. We forget to tell these children who they are. Every one of us has a different nationality. And be proud. I wouldn't come in here and teach the culture if I didn't want to. I think it is really important. The Sayisi Dene were struggling for the longest time and some of us has survived and some of us are still out their practicing and some of us that have survived are the ones that are trying to pass the message to the children, like you. It is really important because no matter who you are, just be who you are and be proud. Every person in here has a different nationality. Just go home and ask if you don't know. Be proud because one day down the line you will see or tell your children, and your children can tell their children and keep passing it on. The tools are here in the library and you can use it. Use it for the school, that's the purpose of it being here.

Ma-see-cho, thank you. (Bjorklund, 2008a)

After the presentation, students had a better understanding of the importance of knowing who you are and their culture. The classroom was silent the duration of the presentation, and the students gave the elder their full attention. This showed respect towards the elder and the willingness to learn. The students took turns asking questions and giving feedback. The elder asked the students about the presentation as well. The elder felt ecstatic after the presentation. She said, "It was so quiet, you could hear a pin drop, that made me feel really good inside" (Bjorklund, 2008a).

As a result of interviews with teachers following the elder's presentation, L. Smith talked highly of it in the teachers' staff lounge. She explained that the students enjoyed it thoroughly and talked about how much it links to the school curriculum. Interests were shown among other teachers. One Grade eight teacher subsequently asked Mrs. Bjorklund to do a presentation to his students and she did so before the week had come to an end.

When interviewing the Grade 7 teacher, L. Smith was also very impressed with the reaction from the students. When asked, "Do you think traditional knowledge is important?" L. Smith's replied,

> I do. With my previous background in anthropology and doing archeology I think the kids in this community traditional knowledge is something that they do need. They don't always identify with which cultural group they might belong to whether its Cree or Dene and there's not a lot of traditional knowledge that is being passed down and I think a part of that is the community that we live in because people end up being separated and the kids don't always get the stories or don't always get to hear what it was like so when you get elders in the community that are talking about their lives and what they

> remember about what their parents did. I think its so important that they know where they came from and hopefully that will help them figure out where they are going because there is a lot of turmoil within especially an Aboriginal culture trying to figure out and work out all the problems that have happened, politically over the last 2 or 3 hundred years and the impact that the government has had and hopefully the people can take back and feel proud about their culture and be able to tell these kids, and these kids tell their children about the same kinds of stories and what it was like when grandma was growing up and what was here. I think it's very important part of their lives and of their culture (Smith, 2009).

Directly linking it to scientific knowledge, a presentation like Caroline's can certainly be incorporated in the curriculum. During an interview with the Grade 8 teacher, G. Power, he brainstormed ideas of how traditional knowledge can be included.

> Traditional knowledge can definitely be used in the curriculum in ELA (English Language Arts) and Social Studies. It depends on the nature of the type of traditional knowledge you are talking about but I guess in Science you can do something with that. Maybe the way traditional knowledge or their culture dealt with scientific issues in the past and bring them up to today. I don't know how you can incorporate it in Math. You could do it in stuff like Family Studies or Home Economics too (Power, 2009).

In an informal setting, participant observations of Caroline came from activities during the second field season of May 2009. Activities in which I participated with the elder were sewing classes and spring camping with family and friends.

In addition to teaching beadwork in schools for the students, the elder also hosts sewing classes in the evenings and weekends for the adults. Classes are scheduled three times a week, Monday and Tuesday evenings and Saturday

afternoons. The days are not set in stone and, thus, vary from week to week based on the elder's schedule. All the participants are women and friends of the elder. There are a few student participants who also attend these classes. One student was desperately trying to finish off a pair of mitts that he began in his class at school. Two other students who were friends attended these classes with their mothers for something to do together.

In noticing everyone's beadwork, I've seen many different floral designs. The elder mentioned before that, "Each Aboriginal group has their own flower designs. I can simply look at a design and know who made it" (Bjorklund, February 23, 2008 personal communication). Though traditional and local knowledge are not discussed directly, they are demonstrated indirectly through the design choices for beadwork. Many ladies have chosen designs that have been passed down to them from their parents or grandparents, There are also ladies who share their designs with one another, demonstrating some intergenerational and intragenerational knowledge transfer.

Spring camping for the elder and her family occurs every year over Victoria Day May long weekend. In 2009, it was difficult to get out on the land. Plans of over night trips were made but cancelled and turned into three daily trips to John Grey's Point. A few members of the elder's family made the trip to John Grey's Point one night early in order to set up camp. The elder and I travelled out the next morning along with the elder's sister, niece and family and a couple of family friends. A nice canvas tent was set up with an open fire pit. Figure 21 shows how the campsite is set up.

Figure 21 John Grey's Point, Churchill, Manitoba - campsite

The elder's family started the weekend off with some drumming and singing.

> To my knowledge, Dene people play the drum for part of your spiritual healing and telling the spirit to give us a good time and enjoy the outside and out in the wilderness. The wilderness is there for us if we need to use and not abuse it (Bjorklund, 2009).

This was my first time being out on the land. The elder and her family showed me several of their traditional practices from what they eat and drink to how it is hunted and prepared. The family also talked about how camp was different compared to other years.

> John Grey's Point was nice this year but too much snow. In the last couple of years it has changed quite a bit because of the snow. I know in the past where there was no snow and we really enjoyed it (Bjorklund, 2009).

Changes in snow conditions affect the kinds of activities that are done and limits the places they can go.

> The cold weather and the snow really blocked a lot of things. We were not able to walk around in the bush. We had our own spot further up but this year because there was so much snow, the tent was set up here where it is available (Bjorklund, 2009).

> Last year at this time most of the snow was gone and we can go riding around different places, we can't now (Bjorklund, 2009).

> Usually at the end of this month there would be fishing out in Goose Creek but there's no open water (Bjorklund, 2009).

> About this time last year we would see seals and 1 or 2 bears but nothing. The environment is really crazy this year. It's been 8 months of winter and soon it will be 10 months of winter. So when everyone says climate change and warm weather, not for us. Not for Churchill (Bjorklund, 2009).

Through participant observations, these semi-structured interviews were conducted with Grade 7 and Grade 8 students, asking for their views on Churchill and the environment. Their responses show some similarities in the perceptions of the elder and participating students and some perceptions that differ.

> I don't think so much about the climate and stuff. Global warming its like people say that the polar bears are getting skinny because the ice is melting and stuff. I don't think its true. Well look, its May and May is usually boating season so I don't think global warming is really affecting Churchill that much if its still snow like this. There's 5 feet of snow outside at the end of May when it's supposed to be summer time.

> Churchill needs the cold because if we don't have the cold we don't have the polar bears and if we don't have the polar bears then we don't have the tourists and if we don't have the tourists then a lot of places don't have the business (Daley, 2009).
>
> There seems like there is less bears. They don't seem to come to town as much. It may be cause of global warming (Spence, 2009)
>
> There seems to be less bears. I didn't see a bear at all last year, not one bear. I live out in Goose Creek and there are usually a lot of bears and they usually come to the yard but not one, which is weird (Campbell, 2009).

Activities in which I participated with the youths utilized the Schools on Board Traditional Knowledge Collection Kits. Ms. Smith's Grade 7 social studies class, as a group, brainstormed ideas of what traditional knowledge means and what they wanted to learn. Table 3 shows the participating students' list of people, places, and things that are important to them and important to Churchill.

Table 5 People, Places, and Things – Important to students and Churchill

Traditional Knowledge	People	Places	Things
Storytelling	Mrs. Bjorklund	The Port	The Flats
	Myrtle deMuelles	The Bay	Original Town
	Mayor	School	Fort Churchill
	Mr. & Mrs. Bazlik	Dene Village	Navy Base
	Charlie Hart	Ithica	Inuksuk
	Verna Gould	Miss Piggy	
	James	Camp Nanuk	
	Shirley Hart		
	Cookie lady		

Participants from Grade 7 chose to also carry out the second of two Traditional Knowledge Collection Kit activities. Using the digital cameras, the Grade 7 class, teacher, and I took a half-day field trip and walked around Churchill. Students took turns taking pictures of what they think is important to them and important to Churchill.

Once everyone had returned to the school, the students collectively chose seven photos that best represented Churchill. The photo's chosen are, in no particular order, the port (Figure 22), St. Paul's Anglican Church (Figure 23), an inuksuk (Figure 24), the Regional Health Authority (RHA)(Figure 25), Caroline Bjorklund (Figure 26), the VIA Rail train station (Figure 27), and The Flats (Figure 28). Following each photo are students written explanations for why these people, places, and things are important to them.

Figure 22 The Port of Churchill (Photo credit Grade 7 Class 2009)

The Port is important to me because without the port being here, Churchill would probably not be here. It is the main reason Churchill is located here. It's also been here for a very long time. The Port is 75 years old and employs a lot of people (McPherson, 2009).

The Port is really important to our community because ships come from all over the world and brings us grain products. It is also very important to us because most of the families in Churchill work there, so they depend on their paychecks. As the years passed on the Port didn't have any major changes. The Port has been standing for more than 60 years and is still up in good condition today (Spence, 2009).

The Port is important to Churchill because the ships ship the grain up here for us and if we never had the Port we wouldn't have Churchill. The Port never changed at all and the Port had been here for over 60 years (Spence, 2009).

Figure 23 St. Paul's Anglican Church (Photo credit Grade 7 Class 2009)

Figure 24 Hudson Bay (Photo credit Grade 7 Class 2009)

The Hudson Bay is important to our community because it has a lot of history behind it. It also has Beluga whales there and it brings tourists, and they're nice to see. The community spends time there in the summer swimming, having a picnic. It is our beach (Wasylkoski, 2009).

Figure 25 Churchill Regional Health Authority (RHA) (Photo credit Grade 7 Class 2009)

The RHA is important to me because when I'm sick I can easily drive to the hospital. It is important to Churchill because it provides medical care to those who need it. Also there are some older people who can't live on their own and need medication who live at the hospital. We also need the hospital because lots of people up north depend on our hospital so they don't have to go all the way to Thompson or Winnipeg. The hospital has changed because it used to be by the airport when Fort Churchill was over there (Martens, 2009).

The hospital is for people to go see the doctors. It's important to Churchill because if we had no hospital no one would live here. I'm pretty sure it hasn't changed at all (Evans, 2009).

Figure 26 Elder, Caroline Bjorklund (Photo credit Grade 7 Class 2009)

Caroline Bjorklund is a very important person because she helps us sew and bead beautiful mitts and slippers. She teaches us what people used a long time ago like the tools and what they used to eat. She would also tell us the times have changed the people and communities (Bruce, 2009).

Figure 27 VIA Rail Train Station (Photo credit Grade 7 Class 2009)

The train station is important to me because without it I would almost never be able to travel out of town. It's also the main source of transportation for people coming into Churchill. It has been in Churchill for a very long time so its kind of history (McPherson, 2009).

The train station is important to our community because it provides transportation for us to get from place to place. It also brings us food for The Northern Store. It brings up shipment, and if you want to send something up or get someone to send you something it will provide that. The train has changed over the years because the original times were they leave at 8:30pm and arrive back in Churchill at 8:30am. But now the train usually leaves at 11:00am or 12:00pm, and arrive back in Churchill at 2:00pm or 3:00pm. The time schedule has changed because the tracks are really bad. You have to go slow on them or you may tip (Wasylkoski, 2009).

Figure 28 The Flats (Photo credit Grade 7 Class 2009)

> The flats are very important to me and the community because my dad and his family lived down there when they were growing up. A lot of different families had lived there growing up. It has a lot of history behind it. The flats has big changes through the years because now a days the flats has electricity in most of the cabins/houses and there are a lot of renovations that's been done and back in the days they didn't have that (Spence, 2009).
>
> The flats are very important to me because my mom and dad grew up there and the flats had changed some buildings had been pulled down and some new cabins had been build there. It's also important to me because I love going four-wheeling there (Spence, 2009).

This activity demonstrates that the students have a lot of knowledge about their community, whether it's knowledge learned in school, at home, or from others. Moreover, the activity itself encourages reflective and critical thinking

and is an alternative learning style for the classroom (Barber, 2009). Palmer (1999) acknowledges personal association as a key element in the development of 'children as environmentalists'. As such, "an individual's sense of personal identification with the environment is something to be appreciated and valued" (p. 285). In this study, students were given the opportunity to identify what is important to them and to the community of Churchill.

Students also showed interest in interviewing who they considered to be elders in Churchill. Table 4 lists some of the questions they are most interested in having elders answer.

Table 6 Traditional Knowledge Collection Kit – Grade 7 Questions for Elders

Grade 7 – Questions for Elders
1. How long have you lived in Churchill?
2. What was it like being in Churchill in the early days or growing up?
3. What is your cultural background?
4. What do you do for fun?
5. How has Churchill changed?
6. How has technology changed?
7. Who were your elders before?

Students paired up to interview individuals they identified as elders in Churchill. Due to time constrains, students were unable to fully complete the activity. Six interviews, one to two hours in duration, were conducted in person and in the elder's home. There was, however, insufficient time to transcribe the interviews during my field season. Ms. Smith suggested that it might have been too difficult for the students' skill level.

> I think its great for them to get the experience of going into the community because they have to phone. For some that's a big

> deal, they have to phone the person that they want to interview, they have to set up an interview, they need to go and as a class we discussed the questions. For them it is part of an organizational thing and it's hard … for Grade 7s they would probably be okay but a little older would be better (Smith, 2009).

Although this activity was achieved successfully, the information from the interviews has not been included in the findings of this study. This activity was simply an exercise to demonstrate youth's awareness and understanding of traditional knowledge. This activity allows youths to take what they have learned from the elder and their formal schooling and apply it into real life settings.

Of the eight participants in Grade 7 who participated in the activity all enjoyed the experience. One student said they enjoyed it but would not participate in this kind of activity again. Two students were not present when interviews were being conducted.

> I like it because I get to know about different people, their culture and background. I get to know how Churchill is and what's changed from a long time ago. Because they've lived here for a really long time so they've seen all the changes here in Churchill (Martens, 2009).

> I think the traditional knowledge kits were pretty cool but I would not do it again (Evans, 2009).

Some students from Grade 8 showed interests as well for the traditional knowledge kits. Table 5 below lists some questions that they are most interested in asking.

Table 7 Traditional Knowledge Collection Kit – Grade 8 Questions for Elders

Grade 8 – Questions for Elders
1. How long have you lived in Churchill?
2. Do you like living and working in Churchill?
3. What was it like growing up in Churchill?
4. What is your cultural background?
5. What was your favorite cultural game?
6. How has Churchill changed?
7. How has technology changed?
8. How has basic living changed?
9. What has stayed the same in Churchill?
10. Who were your elders?

Similar to the Grade 7 class, some of the participating students paired up to do the interviews. One student wanted to do it on her own. A little more developed than the students in Grade 7, the Grade 8 students actually had the chance to transcribe their own interviews, with permission, during their ELA classes. Though they were not completed before the end of my field season, the participating students gained knowledge from their elders and experienced interviewing and transcribing. The students had a hard time getting started with transcriptions. There were difficulties with hearing the elders and trying to transcribe verbatim. Students acknowledged that this activity was useful, but that it takes a lot of concentration and time to complete. Of the six students in Grade 8, three participated in the activity. As with the Grade 7 data, the interviews and transcriptions of the Grade 8 class were not used as data in this study.

> It is important. I get to figure out what people know that I don't know and they pass down traditional knowledge. It's good because it's important to know (Hort, 2009).

With the combination of learning about traditional and local knowledge with Caroline and the two traditional knowledge collection kit activities, children are more aware of who they are and of the local environment in which they live. Palmberg & Kuru (2000) acknowledge that different environmental education programs like field trips, hiking, and adventure activities aim through personal experiences to develop students' relationships to the environment, that the purpose of outdoor activities is to give students a "out-of-classroom educational experiences involving direct contact with various environments" (p. 33). The intended purpose is to help the students to recognize the environmental changes occurring in their surroundings.

4.2.1 What Did Not Occur?

This case study research discusses the events that occurred and the successes. Equally important is the question 'what did not occur?' The following points are based on my observations, participant observations, and reflections. These points can also act as recommendations for future research.

1. The elder had limited access to traditional materials like hide and sinew used for beadwork. As a result, commercial hide and cotton thread were supplied. Using traditional materials and tools may have required more time to complete the sewing and beading projects, but would have been more authentic.
2. My original plan was to link traditional and local knowledge of environmental change with scientific knowledge of climate change. In the late winter 2008 and spring 2009 field seasons, environmental change and climate

change turned out to be circumstances that most youth and elders in Churchill believed were not happening.

3. An absence of interviews with parents following the first field season meant that I did not know if traditional knowledge was being shared within families and did not understand, in families where this knowledge is shared, how learning traditional knowledge has influenced youth.

4. Youth asked for fewer questions of elders and teachers than the researcher expected. This was considered to be a consequence of either the lack of confidence or lack of intergenerational knowledge transfer for students to feel confident in asking questions. For the students with Aboriginal ancestry, cultural mediators, such as the appropriateness of asking elder questions, are likely at play (see Kanu, 2011).

4.3 Observation

Youths and elders were brought together through the willingness and desire of the elder to dedicate her time to the students and the interest of the Duke of Marlborough School administration and teachers to have the elder participate in classroom activities. The elder feels that it is her role in the family and the community to mentor the children.

> Because a lot of us don't really know, they still don't know. I always stress to the kids to be proud of who you are and some of the kids still don't know who they are. It is not the kids fault it's the parents. So there is no role-play as a parent or grandparent to pass the message. It is really hard. In the family, if none of your kids go out hunting and things, you don't really know how to pass the message to the children. So you don't

> know anything. That's just what happens to a lot of the children here (Bjorklund, 2008b).

Similar findings maintain that parents should be the ones to initiate the transfer of traditional knowledge (Ballantyne et al., 1998; Sutherland & Ham, 1992). Influencing knowledge transfer and acquisition initiates the steps that influence action to change. In fact Palmberg and Kuru (2000) argue that intergenerational knowledge transfer of environmental knowledge can lead to increased motivation to take action.

When youths and elders are together they participate in making crafts and participate in presentations. Prior to the start of the present research, the elder had been present in the classrooms for four years. The elder had taught students to do beadwork, sew mitts and moccasins, to make drums and dream catchers. This gives the students the opportunity to listen, to talk to and learn from the elder. They are learning how clothes were made and how you could survive on the land.

With background as a teacher's aide, the elder has experience working with young children in Kindergarten and learners with cognitive challenges. The tone in which the elder communicates with the students is sometimes authoritative, but authoritative with enthusiasm. It is welcoming. When the elder speaks, she looks directly at individual students and opens the opportunity for students to ask questions. The elder cannot stress enough how important it is for children to know who they are.

> The most important thing to me is to teach the children. It doesn't matter if they listen or not. They don't have to be

> Native. You can teach the children what you know and who they are and it is nice that the history is there. Teach them what you know today. That's the most important thing to me (Bjorklund, 2008b).

The students' tone and action toward the elders were sometimes shy and passive. The students recognize the importance of the elders in the classroom but are more hesitant to ask questions. They show respect in the sense that they are great listeners and they learn by watching and listening.

In situations where the elder talked with me without the presence of students or where the students talked to me without the presence of the elder, they spoke highly of one another. The elder mentioned on more than one occasion how impressed she is with her students. Everyone shows the elder respect and shows a willingness to learn. The elder has worked with these students in the past and sees their growth and is happy to see their enthusiasm each year when she enters the school. The students are also happy the elder is present in the school each year. They are excited to learn how to make new crafts and learn more about their culture and the history around them.

The authors of the document, *Bridging Two Worlds: Aboriginal Education and Employment Action Plan 2008-2011*, aim to achieve Aboriginal student engagement and high school completion through the creation of long term activities in which Manitoba Education,

> Work[s] with Aboriginal organizations, schools and school divisions to incorporate strategic initiatives or activities that will infuse Aboriginal perspectives into the curriculum and professional learning thereby ensuring the school experience is positive, relevant, and meaningful for all students (Manitoba Curriculum, 2012, p. 3).

These initiatives and activities are to strengthen professional learning and make the transition from cultural awareness to cultural competence (Manitoba Curriculum, 2012, p. 3).

A survey conducted by Manitoba School Boards Association (2011), *Initiatives in Aboriginal Education*, identified three common goals. These goals are:

- Incorporating Aboriginal perspectives into the curriculum
- Improving outcomes for Aboriginal learners
- Engaging Aboriginal learners and communities

Each school division/district is responsible for mandating and incorporating Aboriginal knowledge. Given that each school division/district is different, it is left to principals and teachers to decide the activities that will be included in their curricula.

In terms of this case study, the Duke of Marlborough School does provide opportunities for knowledge transfer, and the principal and teachers were open to the incorporation of Aboriginal knowledge in a variety of subjects. Moreover, the activities from the Traditional Knowledge Collection Kits were considered effective ways of incorporating authentic traditional knowledge in classrooms.

Chapter 5 – Conclusion and Recommendations

Many environmental education programs promote intergenerational learning. Most programs acknowledge youth environmental awareness and pro-environmental behaviour (Ballantyne et al., 1998; Ballantyne et al., 2000; Ballantyne et al., 2001; Duvall & Zint, 2007; Palmer, 1999; and Uzzel, 1999). Aboriginal literacy is also seen as learning from the elders about philosophies for life that have been preserved and passed along to younger generations in a community through story telling (Cordoba, 2006). The emphasis of this research has been to document intergenerational knowledge transfer between elders and youths, as well with the incorporation of intergenerational knowledge transfer into the school curriculum.

The ultimate goals for this research are to learn from the elders and youths and to answer the initial question "Are youths aware of their changing environment as a result of learning traditional and local knowledge?"

5.1 Conclusion

In summary, this research links traditional and local knowledge through the presentation of the elder to the youths. The elder talked about traditional ways of being on the land, hunting, and the tools necessary for survival. All of this information can be used to achieve learning outcomes in the Manitoba science and social studies curricula. When teaching about the environment, teachers can develop science activities that engage students in a study of air temperature, winds, precipitation, changes in snowfall and snow cover, land

changes and changes in animal behaviour and biodiversity. Students can then integrate the scientific knowledge learned with traditional and local knowledge to develop a more thorough understanding of the changes in their surroundings.

Like in Yupiaq culture, elders are invited into the classrooms to demonstrate their knowledge through stories and physical demonstrations of skills (Kawagley, 1999).

Knowledge from the Indigenous elders is being transferred from one generation to the next through stories, presentations, and education. The elder learned traditional knowledge from her sister, aunt, husband and family from Tadoule. The elder then passed her knowledge down to the younger generation of children in the community of Churchill. Knowledge is being shared in the classroom through story telling, show-and-tell and the physical skills of beadwork.

The results show moderate levels of interaction between youth to elders and elders to youth. As previously mentioned, eight students said they don't see a lot of intergenerational knowledge transfer happening, but a handful of the students admit to learning some traditional knowledge from their parents at home. Although the level of interaction between youth to parents and/or guardians is unknown, the level of interaction with the elders in the school is present.

While there are moderate levels of interaction between youth to elders and elders to youth, there is a high level of interest in incorporating traditional and local knowledge in education. Through interviews with the elder, youths and teachers, everyone except one student would like to see more ways of

incorporating traditional and local knowledge in other subject areas. This research shows that students and teachers from all grade levels acknowledge the importance of intergenerational knowledge transfer and the linkage and usage of this knowledge in the classroom.

Intergenerational knowledge transfer is important in this research because it allows the elder to share her knowledge of culture and community history with youths. It is very important that what the youths take from this experience is to know who they are and to be proud of who they are.

Although the topic of environmental change and conversations about environmental change were minimal, participants did believe that the late winter of 2008 and spring of 2009 were unusual, but not a circumstance associated with climate change and global warming.

Positive aspects of intergenerational knowledge transfer and factors inhibiting intergenerational knowledge transfer were themes that were generated through the interviews with elders, teachers, and students. Through observation and participant observation, the positive aspects of intergenerational knowledge transfer include:

- Elders willingness and desire to share knowledge;
- Getting to know the elders in the community (Aboriginal or non-Aboriginal);
- Learning the history of Churchill;
- Learning how to survive on the land;

- Teachers finding ways to incorporate traditional knowledge into the current core curriculum;
- Courses that are strictly dedicated to traditional and local knowledge;
- Creating more hands-on and/or out-door activities; and
- Creating parent involvement activities.

Constraints that make meaningful intergenerational knowledge transfer difficult if not impossible in school settings are:

- The few elders available to share knowledge;
- Teachers unwilling and/or able to incorporate traditional knowledge into the curriculum;
- Students not attending classes on a regular basis to learn traditional knowledge;
- Not being able to be out on the land learning through first-hand experience; and
- Not having a variety of elder perspectives presented in classrooms and schools.

Elders and youths perspectives on factors that inhibit intergenerational knowledge transfer include:

- Possible conflicting interests in family values, religion, and culture of knowledge being shared among different ethnic groups;
- Age appropriateness of intergenerational knowledge transfer; and
- Participating in gender specific activities (ie. Boys participate in beadwork and girls learn about hunting, etc.)

5.2 Recommendations

Currently, there is a lack of multiple cultural views in the classrooms of Duke of Marlborough School. By identifying elders and/or cultural experts (Aboriginal or non-Aboriginal) in the community, the school can provide several perspectives of traditional and local knowledge.

The success with intergenerational knowledge transfer between youth and elders in Churchill relies on Churchill's Duke of Marlborough School, the principal, teachers, and elders. As mentioned in a previous chapter, youths are able to learn traditional and local knowledge through the elders willingness to share their time and cultural expertise. It is recommended by the elder that teachers should reduce their time teaching about Europeans and war and encouraging elders in the community to visit the school for the purposes of teaching youth Native culture, natural history and the history of their ancestors.

As a consequence of interviews conducted of the teachers who participated in this research, it is recommend that all teachers investigate more ways to incorporate traditional and local knowledge in all subject areas and not focus on the obvious, social studies, history, and science classes. School initiated courses and student initiated projects allow for integration and the meeting of local needs and interests (Manitoba Education, 2007).

As well, teachers are encouraged to use resources like the Traditional Knowledge Collection Kit and Images Activity that enable off-site learning, skill development and the practical application of knowledge. Funding can be applied to purchase supplies such as digital cameras and digital voice recorders. Funding

can also be used to purchase traditional materials like sinew and hide to allow students to get a real understanding and experience of what Indigenous peoples used a long time ago.

I do not intend for all the recommendations to be carried out but to provide possibilities for future research to be completed and possible classroom activities to enhance certain subject areas being taught in the classrooms of Northern Manitoba community schools.

Appendix A – Tri-Council Ethics Approval Certificate

Certificate of Completion

This is to certify that

Linda Hui-Ling Chow

has completed the Interagency Advisory Panel on Research Ethics'
Introductory Tutorial for the
Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS)

Issued On: March 14, 2007

Appendix B – University of Manitoba Ethics Approval Certificate

UNIVERSITY OF MANITOBA | OFFICE OF RESEARCH SERVICES
Office of the Vice-President (Research)

CTC Building
208 - 194 Dafoe Road
Winnipeg, MB R3T 2N2
Fax (204) 269-7173
www.umanitoba.ca/research

APPROVAL CERTIFICATE

13 September 2007

ArcticNet

TO: **Linda Chow** (Advisor J. Oakes)
Principal Investigator

FROM: **Wayne Taylor, Chair**
Joint-Faculty Research Ethics Board (JFREB)

Re: **Protocol #J2007:045**
"Youth Education: Perspective on Environmental Change and the Passing Down of Knowledge from Elders to Children in Churchill, Manitoba"

Please be advised that your above-referenced protocol has received human ethics approval by the **Joint-Faculty Research Ethics Board**, which is organized and operates according to the Tri-Council Policy Statement. This approval is valid for one year only.

Any significant changes of the protocol and/or informed consent form should be reported to the Human Ethics Secretariat in advance of implementation of such changes.

Please note:

- **if you have funds pending human ethics approval, the auditor requires that you submit a copy of this Approval Certificate to Kathryn Bartmanovich, Research Grants & Contract Services (fax 261-0325), including the Sponsor name, before your account can be opened.**

- **if you have received multi-year funding for this research, responsibility lies with you to apply for and obtain Renewal Approval at the expiry of the initial one-year approval; otherwise the account will be locked.**

The Research Ethics Board requests a final report for your study (available at: http://umanitoba.ca/research/ors/ethics/ors_ethics_human_REB_forms_guidelines.html) **in order to be in compliance with Tri-Council Guidelines.**

Bringing Research to Life

UNIVERSITY OF MANITOBA | Research Ethics and Compliance
Office of the Vice-President (Research and International)

Human Ethics
208-194 Dafoe Road
Winnipeg, MB
Canada R3T 2N2
Phone +204-474-8880
Fax +204-269-7173

APPROVAL CERTIFICATE

13 September 2007

ArcticNet

TO: **Linda Chow** (Advisor J. Oakes)
Principal Investigator

FROM: **Wayne Taylor, Chair**
Joint-Faculty Research Ethics Board (JFREB)

Re: **Protocol #J2007:045**
"Youth and Elders: Perspectives on Intergenerational Knowledge Transfer in Churchill, Manitoba"

Please be advised that your above-referenced protocol has received human ethics approval by the **Joint-Faculty Research Ethics Board**, which is organized and operates according to the Tri-Council Policy Statement (2). **This approval is valid for one year only**.

Any significant changes of the protocol and/or informed consent form should be reported to the Human Ethics Secretariat in advance of implementation of such changes.

Please note:

- **If you have funds pending human ethics approval, the auditor requires that you submit a copy of this Approval Certificate to the Office of Research Services, fax 261-0325 - please include the name of the funding agency and your UM Project number. This must be faxed before your account can be accessed.**

- **if you have received multi-year funding for this research, responsibility lies with you to apply for and obtain Renewal Approval at the expiry of the initial one-year approval; otherwise the account will be locked.**

The Research Quality Management Office may request to review research documentation from this project to demonstrate compliance with this approved protocol and the University of Manitoba *Ethics of Research Involving Humans*.

The Research Ethics Board requests a final report for your study (available at: http://umanitoba.ca/research/orec/ethics/human_ethics_REB_forms_guidelines.html) **in order to be in compliance with Tri-Council Guidelines.**

Appendix C – Ethics Amendment Approval

AMENDMENT APPROVAL

28 April 2009

TO: **Linda Chow**
Principal Investigator

FROM: Wayne Taylor, Chair
Joint-Faculty Research Ethics Board (JFREB)

Re: Protocol #J2007:045
"Youth Environmental Awareness: Perspectives on Intergenerational Knowledge Transfer in Churchill, Manitoba "

This will acknowledge your request dated April 27, 2009 requesting amendment to your above-noted protocol, including change of project title.

Approval is given for this amendment. Any further changes to the protocol must be reported to the Human Ethics Secretariat in advance of implementation.

UNIVERSITY OF MANITOBA | Research Ethics and Compliance
Office of the Vice-President (Research and International)

Human Ethics
208-194 Dafoe Road
Winnipeg, MB
Canada R3T 2N2
Phone +204-474-8880
Fax +204-269-7173

AMENDMENT APPROVAL

August 10, 2012

TO: **Linda Chow**
Principal Investigator

FROM: **Wayne Taylor, Chair**
Joint-Faculty Research Ethics Board (JFREB)

Re: **Protocol #J2007:045**
"Youth and Elders: Perspectives on Intergenerational Knowledge Transfer in Churchill, Manitoba"

This will acknowledge your request dated August 7, 2012 requesting amendment to your above-noted protocol, involving change of project title.

Approval is given for this amendment. Any further changes to the protocol must be reported to the Human Ethics Secretariat in advance of implementation.

Appendix D – Ethics Renewal Approval

RENEWAL APPROVAL

28 April 2009

TO: **Linda Chow**
Principal Investigator

FROM: Wayne Taylor, Chair
Joint-Faculty Research Ethics Board (JFREB)

Re: Protocol #J2007:045
"Youth Environmental Awareness: Perspectives on Intergenerational Knowledge Transfer in Churchill, Manitoba "

Please be advised that your above-referenced protocol has received approval for renewal by the **Joint-Faculty Research Ethics Board**. This approval is valid for one year only.

Any significant changes of the protocol and/or informed consent form should be reported to the Human Ethics Secretariat in advance of implementation of such changes.

UNIVERSITY OF MANITOBA | Ethics
Office of the Vice-President (Research)

CTC Building
208 - 194 Dafoe Road
Winnipeg, MB R3T 2N2
Fax (204) 269-7173
www.umanitoba.ca/research

RENEWAL APPROVAL

October 19, 2011

TO: **Linda Chow**
Principal Investigator

FROM: **Wayne Taylor, Chair**
Joint-Faculty Research Ethics Board (JFREB)

Re: **Protocol #J2007:045**
"Youth Environmental Awareness: Perspectives on Intergenerational Knowledge Transfer in Churchill, Manitoba"

Please be advised that your above-referenced protocol has received approval for renewal by the **Joint-Faculty Research Ethics Board**. This approval is for one year only.

Any significant changes of the protocol and/or informed consent form should be reported to the Human Ethics Secretariat in advance of implementation of such changes.

Bringing Research to Life

Appendix E – Informed Consent Document

Informed Consent Document

This consent form, a copy of which will be left with you for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

The purpose of this research is to document the importance of elders, cultural teachers and scientists as role models, sharing traditional, local and scientific knowledge with youth aged ~~ten to twelve~~. One of the specific objectives of this research is to identify the impact of elders and cultural teachers on youth environmental awareness. By linking traditional, local and scientific knowledge, children will be able to better understand the environmental changes in their community. Interviews, ~~video recordings~~ and audio recordings will be included in an essay, article, poster, or book, along with a photograph of you and a brief sentence (one or two) on your biography. You will receive a complimentary copy of a community report to show my appreciation for taking the time to participate in this master's research. Future publications would be sent to the Churchill Library Archives and the Churchill Northern Studies Center.

If you would like the interview taped recorded or video taped, please let me know. If you do not want to be taped, that is okay; I will write down the information you want to share.

~~Accept Video Recording~~ Accept Audio Recording Accept Photography

~~Participant's Signature~~	Participant's Signature	Participant's Signature

The interview questions focus on environmental changes in the community of Churchill and the Hudson Bay area. Please feel free to not discuss questions you do not feel comfortable with. You are also able to end your interview or your participation at any time during this research.

Confidentiality risk of publication will be minimized by excluding any participant who would like to remain anonymous or who would like their responses to remain confidential. Also, participants will have the opportunity to review their part of the publication in case they would like to add/delete/change the content for reasons including confidentiality.

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the project and agree to participate. In no way does this waive your legal rights nor release the researchers, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the project at any time, and/or refrain from discussing any themes or questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

If you have any questions, please feel free to contact Linda Chow at (204) 474-7376, linda_chow@umanitoba.ca or my professor, Dr. Jill Oakes at (204) 474-7352, jill_oakes@umanitoba.ca The University of Manitoba Joint Faculty Research Ethics Board has approved this project. If you have any concerns or complaints about this project you may contact any of the above-named persons or the Human Ethics Secretariat at (204) 474-7122. A copy of this consent form has been given to you to keep for your records and reference.

Participant's Name (Please Print)	Date
Participant's Signature	Date
Researcher's Signature	Date

Appendix F – Transcribed and Edited Interview Review

Transcribed and Edited Interview Review

A copy of this form will be returned to you for your records and reference. If you would like more detail or have any questions, please contact Linda Chow at (204) 474-7376 or linda_chow@umanitoba.ca, or my advisor, Dr. Jill Oakes, at (204) 474-7352 or jill_oakes@umanitoba.ca. You will be provided a complimentary copy of publications of this work. Please take the time to read this carefully. Please sign either line (1) or line (2) below.

I have been asked to review my transcribed and edited interview and provide any additional comments or suggestions for revisions.

1) I have reviewed my transcribed and edited interview and have no further comments.

_____ _____ _____

Participant's Name (Printed) Participant's Signature Date

OR

2) I've reviewed my transcribed and edited interview and have attached my comments.

_____ _____ _____

Participant's Name (Printed) Participant's Signature Date

_____

Researcher's Signature

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