Reference: Gratton, Marie-France and O'Donnell, Susan (2009) Integrating New Media into Communication Research: Multi-site Videoconferencing for Focus Groups with Remote First Nation Community Members. Canadian Communication Association (CCA 09), Carleton University, Ottawa, May 28-30.

Integrating New Media into Communication Research: Multi-site Videoconferencing for Focus Groups with Remote First Nation Community Members

Marie-France Gratton
University of Ottawa and National Research Council, Ottawa

Susan O'Donnell
National Research Council and University of New Brunswick, Fredericton

Abstract: *New media offer social science researchers more options for conducting research. Many researchers have been using text-based exchanges on the Internet as a data collection method. However some situations do not lend themselves to text-only exchange; a prime example is interviews with research participants from a cultural or community background that is outside the researchers' daily frame of reference. In this situation, visual cues and face-to-face contact are essential for conveying information that will build trust and comfort levels between participants and the researcher. Conversely, it is not always possible for researchers to travel to conduct focus groups and interviews in person, especially when travel is prohibitively time-consuming and expensive. This reason – too expensive and time-consuming – is often given to explain the lack of qualitative research with participants living in remote First Nation communities. This paper presents an overview of a research method developed in collaboration with our research partner K-Net and KORI (Keewaytinook Okimakanak) in northwestern Ontario. The specific study investigated preferences for online health information for First Nations people living in remote communities. Working with K-Net, we developed a method to use multi-site videoconferencing for focus groups – live visual and audio exchange between the researcher in Ottawa and participants in multiple remote First Nation communities in northwestern Ontario. The paper presents some of the challenges of research with remote communities, an overview of the study, the methodology, the technology used, a profile of the research partner and research participants, the process for the focus groups, what went well and the advantages of using this method and some of the challenges we experienced. Our conclusion encourages other researchers to try this innovative method to include more remote First Nation community members in participatory research projects.*

1. Introduction

When conducting research with First Nations people, the fact that most communities are rural and remote can be a challenge for many researchers. Access to these communities can be very costly and researchers must invest more time for travelling. The same is true for First Nation researchers wanting to conduct research outside of their communities. There is a need for other means of communicating requiring no travel that will minimize research costs and consequently encourage and increase research with First Nations. Researchers have used different methods in the past to communicate with First Nations people in remote communities. However, many of these methods have proven to be inadequate for research in an Aboriginal context.

This paper describes a new method of data collection for qualitative research with remote First Nation communities. In the specific research for which this method was developed, videoconferencing was used to conduct focus group interviews with First Nations people to learn about their preferences for online health information. This innovative and cost-saving data collection method could be applied to any qualitative research requiring communication with remote and rural communities.

This paper starts with an overview of the challenges of doing research with remote communities and how researchers have used broadband networks and the Internet in the past to collect data remotely for qualitative research. The context and background for the research that drove the development of the new data collection method is then described, followed by a detailed description of the method used to collect data for this research. The subsequent section reports on the results of using this method, by stating the advantages of this method and what went well as well as its limits and challenges. Finally, the last section discusses the major results and offers some thoughts for future research.

2. Challenges of Research with Remote Communities and Broadband Communication Solutions

The high costs and considerable time required to do research with remote First Nations communities is well-known by researchers working in this area. In a 2000 report by a federal task force reporting to SSHRC and NSERC, the consequences of the high costs of northern research were highlighted. The report noted that in the previous three years, the cost of airfares and freight transport to northern communities had doubled. The cost of food and lodging in remote northern communities is at least 30% higher than in the southern communities where most Canadians live. Unexpected costs related to travel in northern communities can be prohibitive – the report cites the example of $1,000 per hour for Twin Otter (small plane) support (Task Force on Northern Research, 2000).

According to the SSHRC and NSERC task force, the high costs of doing northern research have caused some researchers to abandon their research. When the report was written in 2000, SSHRC and NSERC, the principal sources of funding for northern research, did not cover all the costs of doing northern research and other sources of funding were difficult to find. Overall, the level of resources required to build and maintain good research partnerships with northern remote communities was not available to researchers. The report concluded that: “The costs and effort required to promote and undertake northern research are significant and can present a serious barrier to creating the necessary partnerships among the different stakeholders involved” (Task Force on Northern Research, 2000:16). While the situation has improved somewhat in recent years with special SSHRC and NSERC funding targeting northern research, the reality is that research with remote First Nation communities remains a costly and time-consuming venture; as a consequence few researchers are working in this area.

At the same time that research with remote communities was becoming more costly, new media were emerging that opened new possibilities for communicating with remote communities. For almost two decades, researchers have been using broadband networks and the Internet to conduct social science research. The methodologies have focused almost exclusively on digital text communications – using email, discussion listservs and chat rooms. Widely cited books and articles about online research include Couper (2000), Jones (1999) and Mann & Stewart (2000). These publications provide how-to information for researchers interested in using text-based communication on the Internet to collect data from people.

More recently, the increased penetration of broadband networks has made it possible for researchers to communicate and conduct their research using richer forms of data exchange. The use of videoconferencing – real-time exchange of audio and video data over broadband networks – has increased significantly in the last few years. To date however, there has been no published research on how videoconferencing can be used for social science research with remote communities, despite the obvious advantages of using audio visual technology compared to text communication for this purpose.

Remote and rural First Nations are currently using videoconferencing for many purposes. Despite significant challenges including lack of adequate bandwidth, First Nations communities and organizations have worked with government and private sector partners to build a significant broadband network capable of supporting videoconferencing for health care, education, and many other community and sustainable development activities (O'Donnell, Perley, Walmark, Burton, Beaton and Sark, 2007; O'Donnell, Perley and Simms, 2008; O'Donnell, Beaton and McKelvey, 2008). These networks can be used to conduct videoconferencing for data collection for social science research.

Videoconferencing offers something unique that other types of digital communication over broadband networks cannot offer. As discussed in our recent paper (O'Donnell, Beaton and Hancock, 2009), social science research on videoconferencing began with attempts to understand why the visual is an important component of communication. One of the earliest theories was *social presence*, developed by a team of social psychologists (Short, 1976). According to this theory, videoconferencing is richer in social presence than other non-visual media and communication channels – such as telephone conversations - because it can convey information important for good interpersonal communication. More recent research in this area has highlighted three themes that make up social presence: 1) being together, including co-presence, co-location and mutual awareness; 2) psychological involvement, including saliency, immediacy, intimacy, and making oneself known; and 3) behavioural engagement, the immediacy behaviours through which social presence is realized (Rettie, 2003). Other recent research argues that social presence is facilitated by observation of visual cues such as facial expressions and body movements. Video - with its greater ability to support visual cues, such as facial expression recognition - will give people a greater sense of social presence than audio alone (Roussel & Gueddana, 2007).

In our earlier research, we found that the visual communication afforded by videoconferencing is important to First Nations people (O'Donnell, Beaton and Hancock, 2009). In that study, all the interview participants said that having visual communication is important when communicating at a distance. They want to see the other person in a discussion to ensure that people are paying attention when they are speaking. With visual communication people take the interactions more seriously because others are watching them. Several interview participants said the visual communication allows them to build or maintain relationships with people they cannot meet in person. According to these participants, visual communication builds trust.

3. Study Context and Background

The Sioux Lookout district, which consists of 23 remote First Nations communities across northwestern Ontario, was chosen as the scope for this research (Appendix I). Most communities can only be accessed by air. Like the majority of Aboriginal people, the people of the Sioux Lookout district face serious social issues, such as health issues, high unemployment rates, and limited access to healthcare and the Internet (Fiser, Clement, & Walmark, 2006; Nishnawbe Aski Nation, 2007; Northern Nishnawbe Education Council, 2008).

With the arrival of the Europeans to Canada, Aboriginal people's way of life was completely disrupted. They gradually lost control of their land and in this process, became more and more disconnected with many of their symbols of history and culture (INAC, 2006). This history and ongoing racism towards Aboriginal people have had a harmful impact on the health of Aboriginal people today, who suffer a significantly lower health status than the general population (National Aboriginal Health Organization, 2008; Silverman, Goodine, Ladouceur, & Quinn, 2001).

Challenges are also associated with the fact that most Aboriginal communities are rural, many being fly-in locations only with no road access. For instance, limited health care resources in the communities mean that patients must often be flown to the nearest town or cities to reach a hospital, which is costly and time consuming (Fiser et al., 2006).

For these reasons, it is crucial that Aboriginal Canadians in remote communities gain accurate, reliable and relevant access to information and social services. Because of the high costs associated with traveling, new media, such as videoconferencing, has been used to provide remote communications and services to communities to minimize the need for travel.

K-Net (Kuh-ke-nah Network), the telecommunications services department of Keewaytinook Okimakanak (KO), and a partner in this research, provides a carrier class broadband network, that as of 2006 connected 40 communities in northern Ontario, including the 23 First Nations communities of the Sioux Lookout district (Fiser et al., 2006). This network allows for the delivery of affordable broadband services to remote communities, including telehealth, tele-education, e-commerce, and videoconferencing (Industry Canada, 2006).

There are many benefits associated with providing remote services over videoconference. For instance, telehealth services reduce the frequency residents need to leave their home communities to get proper medical attention, reduce costs associated with providing health care in remote communities, and help deliver more medical services to the communities to help deal with widespread health issues (Fiser et al., 2006). Similar advantages apply to other types of services provided to these communities using videoconferencing. One of these is allowing for researchers to collect qualitative data remotely.

Historically, Aboriginal people have been reluctant to conduct research with non-Aboriginal researchers and have feelings of skepticism and distrust towards them. Among several other reasons, these views are a result of research being conducted by non-Aboriginals that are irrelevant to community needs and that lack respect for Aboriginal culture and ways of doing research (Bennett, 2004; S. Perley & O'Donnell, 2006; S. Perley & O'Donnell, 2005). Researchers working in or with Aboriginal communities must therefore choose approaches to research that include members of the communities, allowing them to contribute throughout the whole research process. One model of research, participatory research, has been recognized as favorable to Aboriginal research. Participatory research is collaborative in nature and enables Aboriginal researchers involved in the research to voice their opinions, share their knowledge, and have more control over every step of the research process (Bennett, 2004; Smith, 1999).

Researchers must also choose a methodology for gathering data that allows participants to be more deeply involved in the process. This study was therefore conducted using a qualitative user-centered method for gathering data. Respecting the principles of OCAP - Ownership, Control, Access and Possession - is also good practice for researchers. Ownership means that Aboriginal communities are collective owners of their cultural information and knowledge. Control signifies that Aboriginal people have the right to control

all aspects of research that may impact them in any way. Access refers to Aboriginal people's entitlement to access their information and to make decisions regarding its access. Finally, possession provides Aboriginal people with a means for protecting their information of breech or misuse (Schnarch, 2004). The researcher fully respected these principles during this study by working in close partnership with First Nation organizations.

The current study is part of a graduate thesis research conducted in collaboration with the VideoCom project funded by SSHRC. VideoCom has three First Nation organizations as research partners, including K-Net and KORI, Keewaytinook Okimakanak.

4. The Novel Research Method: Focus Groups by Multi-Site Videoconference

The larger goal of the study was to understand preferences by First Nation people for online health information. User preferences of online health information were explored in depth through focus group discussions. The focus group method was primarily qualitative but also included gathering some quantitative data and was thus a mixed-method approach. A selection of health websites was made to present to participants and a questionnaire was developed to collect data from participants. The questionnaire was reviewed by the First Nation research partners and tested during a pilot focus group interview with Aboriginal people from the district. The focus groups took place remotely using multi-site videoconferencing technology thus allowing for the interviewer and the participants to see and hear each other in real-time during the sessions despite the distance.

Participant recruitment was conducted with the help of the K-Net partner. Each First Nation community in the Sioux Lookout district has a Community Telehealth Coordinator (CTC) who manages the telehealth operations. Because of their experience using videoconference and their interest in health matters, it was agreed with the partners that the CTCs would be approached to participate in remote focus group interviews for this research using videoconference, as part of their job responsibilities. Asking the CTCs from each community ensured that most of the communities of the district were represented in the research. The CTCs were also asked to invite other members of their community to participate.

Thirty participants, both female and male, were recruited. Out of the 30 participants, 22 participants returned their questionnaire, which allowed their demographic characteristics to be analyzed. There were more female participants than male, with 14 female participants and 8 male participants. Most participants reported they were from the Oji-Cree culture; however there were other participants from the Ojibway culture and as well as the Cree culture. Participants were between the ages of 20 and 59 and highest education levels ranged from primary school to a bachelor's degree. Most participants spoke an Aboriginal language either as their mother tongue or as a second language, while all of them spoke English. All 22 participants specified that they used the Internet at least once a day and had previously searched for health information online. More than half of participants (59%) were Community Telehealth Coordinators (CTC). The participants came from 14 different First Nation communities in the Sioux Lookout district.

A staff member from K-Net took care of contacting all potential CTCs to ask for their participation and schedule the focus group sessions. During the focus groups, the K-Net staff member in Sioux Lookout ensured the connection between sites was made and coordinated the videoconference. He also ensured the recording of the videoconferences. Each CTC had access to videoconference facilities in their communities, managed centrally by K-Net in Sioux Lookout.

The interviewer had access to a National Research Council videoconference facility in Ottawa. A laptop was connected to the videoconference equipment, allowing the interviewer to show the websites to the participants. Speakers were also plugged into the laptop to improve the sound coming from the videos shown. During the videoconference, the interviewer switched the screen view between the computer screen and the camera to show the websites. The pilot session also served to test the technology as well as the process used for the interview, verifying the quality of the sound and video, and allowing the interviewer to practice the coordination of the speakers.

During the focus groups, each site could see only two of the other sites at once: the site of the current speaker and the site of the last person to speak or the sites of the last two people to speak. Five focus groups were conducted in total. Every participant had a printed copy of the questionnaire on-hand during the focus group interviews. These questionnaires were sent by email to participants, who were asked to print them. During the sessions, the interviewer began by providing background information on the research, providing some instructions regarding the focus group sessions and reading the consent for participating in the study.

The interviewer then presented the first set of websites. To prevent technical difficulties and loss of resolution due to the videoconference, participants were sent the list of links ahead of time for them to view the websites on their own computer. If for whatever reasons participants could not view the websites on their own computer, the interviewer also presented them on the videoconference screen.

Participants were then asked to individually answer some questions on the printed questionnaire regarding their preferences for the websites that had just been presented. The interviewer subsequently invited participants to share their responses and discuss their preferences with the rest of the group. This process was repeated for each set of websites. The websites presented contained text, images, links, and/or videos.

Participants were then asked to complete filling-out the remainder of the printed questionnaire. Following this, three open-ended questions from the questionnaire were asked for group discussions.

Each focus group took approximately two hours and was completely video recorded. Transcripts of the video recordings were made for analysis. Following the interview, participants sent their filled-out questionnaires to the interviewer via fax. The received questionnaires were then transcribed for analysis. NVivo software was used to analyze the data from both the questionnaires and the video transcripts.

5. Results

5.1 Cost and Time Savings of this Research Method

The most significant advantages to this research method were the considerable cost and time savings. No travel was necessary to conduct the focus groups by either the interviewer or the participants. Without the use of this method, the interviewer would have had to travel to Sioux Lookout from Ottawa. A round-trip from Ottawa to Sioux Lookout costs from $750 to $1,300 with Bearskin Airlines, the only airline that offers connections to Sioux Lookout for flights departing from Ottawa.

From there, to conduct focus groups, all the participants would have had to fly to Sioux Lookout from their communities. Wasaya Airways offers flights to and from the communities in the Sioux Lookout district, to the exception of Lac Seul, Slate Falls and Mishkeegogomang. Table 1 (Appendix II) lists the regular rate for a round-trip with Wasaya Airways to Sioux Lookout from each of the communities that participated in this research. The full price for each trip is more than $500. Better rates may also be available when flights are booked 10, 7, 3 or 1 day(s) in advance. Considering the high price of travel from the communities to Sioux Lookout, it is realistic to believe that the recruitment of participants would have been much more difficult, if not impossible, if travelling was required.

On the other hand, the interviewer could have travelled to all of the communities instead of having each participant travel to Sioux Lookout. In this case, focus groups including members from different communities would have been impossible. Table 2 (Appendix II) shows the flight rates for one possible route that can be taken with Wasaya Airways giving the interviewer 1-2 days in each community (excluding Lac Seul, Slate Falls and Mishkeegogomang), for a trip lasting 18 days. The itinerary was made with as much inter-community trips as possible, thereby minimizing trips having to connect in Sioux Lookout (Community X - Sioux Lookout - Community Y). This trip would have been exhausting for the researcher and dependent on good weather and no flight delays.

Booking flights in advance reduces the price significantly. Considering that the interviewer could have booked at least 10 days in advance, Wasaya Airways' lowest rate for an itinerary that includes a visit to each of the communities for 1-2 days, starting in Sioux Lookout, costs $1,934.10 (see table 2). Including the cost of the trip from Ottawa to Sioux Lookout, the total flight costs for this trip for the interviewer would be between $2,700 and $3,200 at the lowest rates, with maximum advance booking. This does not include the cost of hotels and meals. The average cost of a room for a visitor in a remote First Nation community in this region is $150 a night. Meals would have to be self-prepared using food purchased at the community Northern Store, which would cost about $50 a day. The minimum total cost of this potential 18-day marathon research trip for one researcher would be $6,300, not including the cost of staying in Sioux Lookout and getting to and from the airports in Sioux Lookout and each community.

These numbers show the substantial savings for both the researcher and the participants for conducting the interviews at a distance. Aside from the ongoing costs for K-Net to maintain the broadband networks and the videoconference facilities in the communities, there were no other costs for the interviewer and the participants for using the multi-site videoconference method.

The time involved for the interviews was also considerably less than the in-person alternative. Each participant only had to take two hours of their time to participate in a focus group. For the interviewer, five focus groups were conducted of two hours each, plus half an hour given for set-up each time, making a total of 12.5 hours of interview time for the interviewer. The focus groups were done over a period of three days, with the researcher staying in her home community of Ottawa and being able to conduct her normal activities outside of the focus group times. Therefore, three days of focus groups compared to 18 days of dedicated travel and focus groups means time savings of at least 15 days for using the videoconferencing method instead of travelling.

5.2 Other Advantages and What Went Well with the Research Method

In general, the use of videoconferencing to collect qualitative data for the purpose of this research was very successful. This section describes what went well and some of the advantages associated with this new research method.

One advantage of the method we described earlier is that it allows a mixed-method approach, in our case having the combination of the group discussion with individual responses from the participants in the questionnaires. This allows the researcher to benefit from the advantages of face-to-face interviews combined with survey data. The interviewer could record qualitative details that would otherwise be impossible to record by simply using a questionnaire. The videoconference lets the interviewer see the participants' facial expression and body language, reducing the chances that answers will be misinterpreted. Furthermore, the interviewer can probe for more information if the answer given by the participant is not clear or is incomplete. In addition, if the answers given on the questionnaires are not clear, they can also be compared to the answers given during the focus group sessions to clarify.

During the videoconference, the interviewer observed active participation in the focus groups. This sometimes required some probing on the part of the interviewer to encourage discussion; however most participants appeared to be relaxed and more eager to speak after the first question. This was an encouraging result for this research, considering an initial concern that the dynamics of the focus groups could be affected by the different setting and considering the challenges associated with conducting multi-site videoconferences.

Even though the showing of web pages containing text was more difficult, the showing of the videos worked very well. No technical difficulties were encountered. Participants could see and hear the videos perfectly. This was a result of thorough upfront testing of the technology and material used, including the quality of the videos transmitted and the audio.

Despite the fact that the interviewer was not on-site to pick up the questionnaires after the interviews, a good percentage (73%, 22 out of 30) of questionnaires was returned to the interviewer by fax. The First Nation partners were a great help with this by following up with participants who had not yet returned their questionnaires.

Having First Nation partners contributed significantly to the success of this data collection method. The partnership with K-Net allowed for the easy and rapid recruitment of First Nation participants from the region chosen as the scope for the research. The recruitment as well as scheduling of the focus groups would have otherwise been more difficult and time consuming considering the distance between the interviewer in Ottawa and the communities of the Sioux Lookout district. Also, considering the reluctance that some First Nations have for engaging in research with non-Aboriginal people outside of their communities, establishing trust from the people would have been difficult without the involvement of the partners or without spending a significant amount of time in the communities.

The partnership with K-Net provided the researcher with access to videoconferencing technology and expertise. Since K-Net offers videoconferencing services to the communities of the Sioux Lookout district, all participants had the necessary technology to participate in the remote focus groups. This contributed to the fact that there were no costs involved for the researcher for doing the videoconferences. In addition, all of the participants had experience using videoconferencing since this is how they often communicate with people outside of their communities. This reduced the risk of participants encountering technical difficulties. Moreover, the expertise of the partners in videoconferencing was of great help as

the interviewer could concentrate on the focus groups themselves without worrying about technical issues.

Finally, the partnership with the First Nation organizations allowed the researcher to fully respect the principles of OCAP. Collaborative planning and preparation was done with the partners, all work was reviewed before being finalized and suggestions and opinions given by the partners were respected and applied to the research. Archives of the video recordings of the focus groups were made available for future review and analysis on the project website. The results of the research were also shared with the partners. Attempts to make the results relevant for the participating First Nations were made throughout the study.

5.3 Limits and Challenges of this Novel Research Method

Conducting the focus groups remotely had several significant advantages, mostly cost and time savings. However this method does have its challenges and limits.

First, conducting focus groups remotely could possibly have an impact on the dynamics of the sessions. Even if the participants and the interviewer could see each other on the videoconference screens, not being physically face-to-face in the same room may influence the mood of participants and create a different atmosphere than an in-person focus group. The feelings of closeness and privacy with the group might not be as strong. Also, not seeing every member of the group at once means that participants cannot see every person's reactions and facial expressions when speaking. This can however be accommodated with some videoconferencing technology that allows for every site to be seen simultaneously on a split screen. However, this means that every site image will be smaller, which may not work in certain situations, such as when many sites are participating.

In addition, coordination between speakers during videoconferences is much more difficult than doing so in-person. As only the current speaker and the last person that had spoken could be seen on the screen at once, participants had to speak up and interrupt if they wanted to add something to the conversation, instead of lifting their hand or giving another type of signal to indicate that they wanted to speak. Several participants may decide to speak all at once or some users may talk less because they are not sure when it is their turn to speak or they might be afraid to interrupt someone. Group discussions could possibly be less active in this case.

The interviewer worked around this challenge by ensuring that everyone had their chance to speak at the appropriate times. During a videoconference, it is easier to get everyone's input by doing round tables, where the interviewer calls out each participant's name or site and allows them to speak. It is essential to use different techniques to accommodate every participant's particular needs. Interviewers should be skilled facilitators with videoconference experience.

Furthermore, in the case of this study, websites were presented to participants, which increased the challenges. There is a loss of resolution when showing a computer screen through a videoconference screen. Even though the interviewer ensured that all participants had no trouble viewing the Web pages during the focus groups, the loss of clarity of the websites on the video conference screen could influence the preferences of the users and thus their responses to the research questions. Improved technology, such as higher bandwidth, could resolve this issue.

The videos were easier to see through the videoconference screen, but the text on some of the web pages was sometimes too small and the size had to be increased to allow for

participants to read. This meant that only a small portion of the Web page could be seen at once, which forced the interviewer to scroll every few minutes to show the whole page. However, it is important to note that participants did have the liberty of viewing websites on their own computer, if they had access to one, during or after the interview. This was the preferred method for certain participants, especially when showing Web pages that contained text.

In a small number of cases, some participants had difficulty opening the Web pages. The interviewer and the videoconference coordinator worked to help these participants with these technical problems; however doing so at a distance also appeared to have its challenges. For example, in one case it was difficult to understand what the user was doing wrong, as the interviewer could not see what the user was doing and the user had trouble communicating using technical terms. In this case, participants that are comfortable using a computer and the Internet would have been required.

Data collection always requires lots of planning and preparation. This was also true for the method used for this research. This method requires access to videoconference technology, not only for the researcher but for all the participants as well. It also requires someone to take care of connecting the sites, maintaining those connections throughout the whole videoconference, and ensuring that no technical difficulties are encountered. This method therefore requires a partnership with skilled people in videoconferencing. Without this partnership, researchers would have to add the costs of renting videoconference facilities to their research expenditures as well as the extra time and effort required to organize and coordinate the videoconferences.

In addition, since interviews are conducted remotely, the interviewer must ensure that all participants have the necessary material for the focus groups ahead of time. In this case, participants had to have the printed questionnaire on hand as well a list of links to Web pages open and ready on their computer. This material was sent to participants via email. Before each focus group session, the interviewer verified that every participant had the required material ready.

Also, collecting data remotely often means that recruitment of participants must also be done remotely. It could be more difficult to reach participants at a distance and to schedule the focus groups. Again, having research partners in the area can be advantageous and efficient.

Finally, this study was conducted with participants experienced in videoconferences. Participants were not only accustomed to the technology but also familiar with the process and were comfortable in front of a video camera. In future research, having participants with no experience with videoconferencing could possibly pose a problem. However, the help of partners, especially local partners, in this case could significantly reduce that risk as they can help with technical issues and with the coordination of the speakers.

6. Discussion and Conclusions

In summary, the data collection stage of this study went well allowing to obtain useful results while cost and time savings were high. The findings of this research highlighted the preferences of online health information for First Nations people. The research helped determine the principles that should govern the conception of health websites in the Aboriginal context. This knowledge could be useful for health communication professionals, First Nation health professionals and policy makers. Considering the value of these findings, the use of videoconferencing for data collection has shown itself to be a valuable method to

collect qualitative data for research in the Aboriginal context. The important cost and time savings also proved this method to be even more advantageous.

Out of the lessons learned, the major one was that partnership with researchers from the remote locations in question are crucial to ensure the success of this method, especially for Aboriginal research. This helps with the recruitment of the participants as well as the planning and scheduling of the videoconferences. Furthermore, partnership with researchers that have experience with videoconferencing is also essential to ensure technical aspects are taken care of for set up and during the videoconferences.

Several opportunities for future research have come out of this study to expand on the findings. The methodology for data collection used for this research could be used in future qualitative research with different groups, such as other cultural groups, or could be applied to other areas of qualitative research, when distance is an issue.

Future research could explore how this method could also be used for quantitative research. The questionnaire that participants filled-out during the focus groups was partly used for quantitative purposes but as this study was qualitative in nature, the sample size was limited and too small for the results to be statistically significant. That said, if a larger group could be managed, this method could be applied in a quantitative study. Advantages would include establishing trust by meeting, seeing and speaking to participants over the videoconference while they fill-in the questionnaire instead of simply sending the questionnaire by mail or electronically. This also allows for the interviewer to answer questions that the participants may have concerning the questionnaire.

The limits and challenges to using videoconferencing for data collection encountered in this research could be examined in more detail in future studies to discover new approaches that could help overcome the challenges. For instance, the loss of resolution when showing a computer screen over a videoconference screen was mentioned as a limitation of this study. An in-depth look at how technology can be used differently to improve the resolution could be looked at.

Future studies could also explore the opinions of participants by interviewing or surveying them regarding their experiences with videoconferencing. The results of this could be used to help discover new ways to improve the method.

Finally, another possible future research could be to repeat this study with face-to-face focus groups, if resources are available, and to compare the findings with the findings from this study. Will the same results be obtained if the interviewer and participants are present in the same room? The goal would be to determine whether or not videoconferencing has an influence on the findings.

7. Acknowledgements

The authors would like to thank the VideoCom research partners K-Net and KORI, Keewaytinook Okimakanak, the Atlantic Canada's First Nation Help Desk and the First Nation Education Council. Lyle Johnson, the videoconferencing bridge coordinator at K-Net was invaluable to this study; the focus groups could not have been conducted by multi-site videoconference without his support and guidance. The VideoCom project is funded by a Standard Research Grant from SSHRC for 2006-2009 and 2009-2012.

8. References

Bennett, M. (2004). *A Review of the Literature on the Benefits and Drawbacks of Participatory Action Research*. *First Peoples Child & Family Review, V.1*(No.1), 19.

Couper, M. P. (2000). Web surveys: a review of issues and approaches. *Public Opinion Quarterly, 64*(4), 464-494.

Fiser, A., Clement, A., & Walmark, B. (2006). *The K-net Development Process: A Model for First Nations Broadband Community Networks* (CRACIN Working Paper No. No. 2006-12). Toronto: Canadian Research Alliance for Community Innovations and Networking (CRACIN).

INAC. (2006). *Report of the Royal Commission on Aboriginal Peoples - Volume 3 - Gathering Strength - Chapter 6 - Arts and Heritage.* Retrieved March 30, 2008, from http://www.ainc-inac.gc.ca.proxy.bib.uottawa.ca/ch/rcap/sg/si55_e.html

Industry Canada. (2006). *National Satellite Initiative Program Description.* Retrieved April 16, 2008, from http://broadband.gc.ca.proxy.bib.uottawa.ca/pub/media/nsi_prog_des.html

Jones, S. (1999). Studying the net: intricacies and Issues. In S. Jones (Ed.), *Doing Internet Research* (pp. 1-27). London: Sage.

Mann, C., & Stewart, F. (2000). *Internet communication and qualitative research*. London: Sage.

National Aboriginal Health Organization. (2008). *An Overview of Traditional Knowledge and Medicine and Public Health in Canada*. Ottawa:

Nishnawbe Aski Nation. (2007). *NAN First Nations.* Retrieved April 13, 2008, from http://www.nan.on.ca/article/nan-first-nations-164.asp

Northern Nishnawbe Education Council. (2008). *Sioux Lookout District Chiefs.* Retrieved April 13, 2008, from http://nnec.on.ca/nnec/?q=node/11

Perley, S., & O'Donnell, S. (2006). *Broadband Video Communication Research in First Nations Communities*. *Canadian Communication Association Annual Conference 2006,* Toronto.

Perley, S., & O'Donnell, S. (2005). *Engaging New Brunswick First Nations in Research*. *Community Informatics Research Network 2005,* Cape Town, South Africa.

O'Donnell, S., Beaton, B., & McKelvey, F. (2008). *Videoconferencing and sustainable development in remote and rural First Nations.* Paper presented at the Community Informatics Research Network (CIRN 08), Prato, Italy.

O'Donnell, S., Perley, S., & Simms, D. (2008, June 26-28). *Challenges for video communications in remote and rural communities.* Paper presented at the IEEE International Symposium on Technology and Society (ISTAS 08), Fredericton, Canada.

O'Donnell, S., Perley, S., Walmark, B., Burton, K., Beaton, B., & Sark, A. (2007).

Community-based broadband organizations and video communications for remote and rural First Nations in Canada. Paper presented at the Community Informatics Research Network (CIRN 07), Prato, Italy.

O'Donnell, S., Walmark, B., & Hancock, B. R. (2009). *Communicating Visually: videoconferencing and remote and rural First Nations*. Paper presented at the Aboriginal Policy Research Conference.

Rettie, R. (2003). *Connectedness, awareness and social presence*. Paper presented at the 6th Annual Workshop on Presence. from http://www.presence-research.org/papers/Rettie.pdf.

Roussel, N., & Gueddana, S. (2007). *Beyond "beyond being there": towards multiscale communication systems.* Paper presented at the MM'07, Augsburg, Bavaria, Germany.

Schnarch, B. S. (2004). *Ownership, Control, Access, and Possession (OCAP) or Self-determination applied to research*. Journal of Aboriginal Health, (January)

Short, J., Williams, E., & Christie, B. (1976). *The social psychology of telecommunications*. Toronto: John Wiley & Sons.

Silverman, B. E., Goodine, W. M., Ladouceur, M. G., & Quinn, J. (2001). *Learning Needs of Nurses working in Canada's First Nations Communities and Hospitals*. *Journal of Continuing Education in Nursing, V.32*(N.1), 38.

Smith, L. T. (1999). *Decolonizing Methodologies: Research and Indigenous Peoples*. New York: Zeb Books, Ltd.

Task Force on Northern Research. (2000). From Crisis to Opportunity: Rebuilding Canada's Role in Northern Research. Final Report to SSHRC and NSERC. Ottawa: Minister of Public Works and Government Services.

Appendix I – Map of Sioux Lookout District First Nations in Northwestern Ontario

Appendix II - Tables

Table 1: Regular rates for round-trip flights to Sioux Lookout from Sioux Lookout district communities

Community	Flight Price (regular rate, round trip)
Big Trout Lake	$598.50
Lac Seul	-
Sandy Lake	$569.10
Slate Falls	-
Pikangikum	$590.10
Mishkeegogomang	-
North Spirit Lake	$739.20
Sachigo Lake	$690.90
Fort Hope	$518.70
Deer Lake	$735.00
Keewaywin	$655.20
Wunnumin	$623.70
Nibinamik (Summer Beaver)	$548.10
North Caribou Lake (Weagamow)	$552.30

Table 2: Rates for flights for an 18-day itinerary through Sioux Lookout district communities

Day	Community	Full Price	1-day advance	3-day advance	7-day advance	10-day advance
1 – SAT	SIOUX LOOKOUT - DEER LAKE	$372.75	$341.25	$294.00	$246.75	$183.75
3 – MON	DEER LAKE - SANDY LAKE	$150.15	$140.70	$124.95	$109.20	$89.25
4 – TUE	SANDY LAKE - KEEWAYWIN	$112.35	$106.05	$96.60	$87.15	$73.50
5 – WED	KEEWAYIN – PIKANGIKUM	$194.25	$179.55	$157.50	$135.45	$106.05
6 – THU	PIKANGIKUM - NORTH SPIRIT LAKE	$153.30	$142.80	$127.05	$111.30	$90.30
7 – FRI	NORTH SPIRIT LAKE – SIOUX LOOKOUT	$364.35	$332.85	$285.60	$238.35	$174.30
	SIOUX LOOKOUT - BIG TROUT LAKE	$304.50	$280.35	$243.60	$205.80	$156.45
8- SAT	BIG TROUT LAKE – SIOUX LOOKOUT	$294.00	$269.85	$233.10	$195.30	$145.95
9- SUN	SIOUX LOOKOUT – WEAGAMOW *NCL	$281.40	$259.35	$225.75	$192.15	$148.05
11 – TUE	WEAGAMOW - SACHIGO LAKE	$194.25	$179.55	$157.50	$135.45	$106.05
13 – THU	SACHIGO LAKE – SIOUX LOOKOUT	$340.20	$311.85	$267.75	$223.65	$164.85
15 – SAT	SIOUX LOOKOUT – WUNNUMIN	$317.10	$291.90	$253.05	$214.20	$161.70
15 – SAT	WUNNUMIN - SUMMER BEAVER *NIB	$129.15	$121.80	$109.20	$96.60	$80.85
17 – MON	SUMMER BEAVER - FORT HOPE	$236.25	$217.35	$189.00	$160.65	$122.85
18 – TUE	FORT HOPE - SIOUX LOOKOUT	$254.10	$234.15	$202.65	$172.20	$130.20
TOTAL		**$3,698.10**	**$3,409.35**	**$2,967.30**	**$2,524.20**	**$1,934.10**