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# The Use of Videoconferencing as a Medium for the Qualitative Interview

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**Abstract**

Qualitative data collection, especially conducting in-person interviews, presents challenges for researchers whose participants are geographically dispersed. Often alternative means of interviewing using communication technology are necessary. This was true for this focused ethnographic research exploring the experiences of participants who were connected to a particular cultural group by virtue of their similar experience but who were not located in the same geographical area. The purpose of this paper is to present the experience of using videoconferencing technology to collect experiential data from undergraduate nursing students and preceptors who were dispersed over a 640,000 square kilometer area in western and northern Canada during a rural hospital-based preceptorship. Recommendations for using videoconferencing as a medium for conducting in-depth qualitative interviews include using a high-bandwidth connection such as SuperNet or Web conferencing, and evaluating whether the type of information sought is likely to be shared in other than in-person face-to-face situations.

**Keywords:** videoconferencing, rural hospital, preceptorship, nursing student, preceptor, qualitative interviewing, videoconference

## Introduction

Interviews are a familiar strategy for collecting experiential qualitative data. Although all interviews help the researcher to get to know the participant better, the purpose of the interview and the disciplinary perspective affect the format of the interview and type of data obtained (Dicicco-Bloom & Crabtree, 2006; Sorrell & Redmond, 1995). The introduction of audiovisual and Internet technologies into research has profound implications with regard to the nature of the data collection process, analysis of data, and, most of all, the way the relationship between the interviewer and interviewee is developed and structured (Graffigna & Bosio, 2006). However, in studies where participants are geographically dispersed over large areas, videoconferencing technology that includes a variety of telecommunication systems that transmit voice, pictures, and data over telephone and/or Internet connections might be an appropriate medium for conducting in-depth qualitative interviews. In this paper we discuss our experience of using videoconferencing technology to conduct in-depth qualitative interviews. We also offer some recommendations for using videoconferencing technologies and strategies to increase its usefulness.

## Videoconferencing as a technology

There is increasing interest in the uses and application of videoconferencing technologies in health care, business, education, and research. In health care, videoconferencing has been used for conducting small group discussions (Wilson, Marks, Collins, Warner, & Frick, 2004), teaching and supervising medical procedures (Curran, Aziz, O'Young, Bessell, & Schulz, 2005; Miller, Alam, Fraser, & Ferguson, 2008), and providing health information and services to underserved populations (Collie et al., 2007; Sävenstedt, Zingmark, Hydén, & Brulin, 2005; Winters & Winters, 2007). Videoconferencing has also been used by health professionals in diagnosing medical conditions (McCrossan et al., 2008). As a cost-saving strategy, businesses frequently conduct employment interviews using videoconferencing (Chapman & Rowe, 2001; Chapman, Uggerslev, & Webster, 2003).

Videoconferencing technologies are also used for both professional and formal education programs. In the professional setting it supports health care professionals in their clinical work by providing them with ongoing professional education. Although this type of teaching strategy is valuable in any health care setting, it is especially so for clinicians in more remote and isolated areas (Callas et al., 2004; Harris, Smith, & Armfield, 2007; Lepage & Robinson, 2005; Locatis et al., 2006). To help expand the traditional classroom walls, nursing and medical programs have begun to use videoconferencing technologies as a means of providing nursing and medical education. Videoconferencing is also perceived as a way of developing partnerships among peers both on- and off-site of the educational institution (Bertsch, Callas, Rubin, Caputo, & Ricci, 2006; Daley, Spalla, Arndt, & Warnes, 2008; Zerr & Pulcher, 2008).

The economic feasibility of using videoconferencing for conducting interviews (Shore, Brooks, Savin, Manson, & Libby, 2007) has received some attention, as has the impact of using this technology on the delivery of health care (Gagnon, Lamothe, Hebert, Chanliau, & Fortin, 2006). Of particular importance to the health care professional relying on videoconferencing for the delivery of health care services is the finding that interpersonal relationships between health care professionals and their clientele are significantly influenced (Lamothe, Fortin, Labbe, Gagnon, & Messikh, 2006; Palmas et al., 2006). These researchers found traditional professional roles changed because professional relationships were modified as a result of using videoconferencing.

Although the use of videoconferencing technologies in the health, business, and educational sectors is expanding, we did not find any studies examining its use in conducting in-depth qualitative interviews compared with in-person interviews. However, according to some researchers, the impact of videoconference technology on the surface structure of social interaction (O'Conaill, Whittaker, &

Wilbur, 1993; Sellen, 1995) reveals that although high-speed and high-quality imaging multimedia networking such as Integrated Services Digital Network (ISDN) or LIVE-NET have many similarities to in-person face-to-face interactions, videoconference-based conversations do not replicate face-to-face, in-person interactions. According to these authors, videoconference-based conversations evince a deterioration of visual cues that include head nods and eye gaze and have fewer interruptions, longer turns between speaker transitions, and fewer turns taken by participants, resulting in less natural and more formal interactions. As a result, participants exhibit signs of highly formal conversational behaviors, including the establishment of psychological distance and depersonalization. In-person, face-to-face interviews permit the sharing of the same physical space. This allows spontaneity in the conversation, increased speaker switches, and equal access to the conversational floor (O'Conaill et al., 1993; Sellen, 1995). Even though sharing the same physical space might be a critical property in conversing, sharing the same physical space to conduct interviews with participants who are geographically dispersed is not always possible because of time and travel constraints.

We recognize that there are some limitations with using videoconferencing technologies that make it unsuitable for certain types of interactions, such as conflict resolution, planning, negotiation, or where the ambiguity of the information and the need for rapid clarification and feedback are critical to the success of the interaction (Daft & Lengel, 1984). What remains unknown is whether the changes in conversational structure while using videoconferencing technologies during a qualitative interview influences a participant's ability to share with the researcher rich, detailed descriptions of phenomena (Geertz, 1973). Consequently, it is important to examine the impact the use of this technology has on the qualitative interview.

## Background

The purpose of this study was to describe the experience of nursing students and preceptors during a rural hospital-based preceptorship clinical practicum. Specifically, the focus was to identify and describe the norms, values, beliefs, and behaviors that influence baccalaureate senior nursing students' socialization during a rural hospital-based preceptored clinical practicum. The broad research question that guided this study was What are the experiences and perceptions of undergraduate nursing students and nurse preceptors during a rural hospital-based preceptorship?

Preceptorship in Canadian nursing programs is typically described as a formal one-to-one relationship of a predetermined length of time between a nursing student and an experienced registered nurse. It is a popular clinical teaching strategy because of its perceived benefits in socializing students to the nursing profession. To this end, it is believed that the preceptorship clinical experience improves student clinical competency, and enhances students' ability to apply theory to practice by increasing their familiarity with health determinants (Freiburger, 2002; Letizia & Jennrich, 1998). Preceptorships are also thought to support the development of teaching, collaboration, planning, and evaluation skills as well as leadership and interpersonal relations and communication skills necessary for professional nurse roles (Udlis, 2008).

## Method

A focused ethnography was completed to investigate the behaviors and beliefs for their meaning among rural hospital preceptors and undergraduate nursing students during a preceptored clinical experience (Boyle, 1994; Morse & Richards, 2002; Muecke, 1994). Data collection occurred over the course of 8 months. Participants included nurse preceptors and undergraduate nursing students from a large western Canadian university and two of its affiliated colleges. All of the preceptors identified themselves as living in a rural community. Nursing undergraduate students identified themselves as living in a rural community and undertaking a rural hospital–based preceptored clinical experience, or as commuting from

an urban center to a rural community for the purposes of completing their preceptorship. Because the rural hospitals that provide clinical placements for nursing students from this program typically take only one or two students for a preceptorship experience, many hospitals are needed to accommodate students who choose a rural hospital preceptorship. As a result, the participants in this study were geographically dispersed over a 640,000 square kilometer area in rural western and northern Canada. The 11 communities in which the clinical experience was undertaken were located 1.5 to 16 hours' driving time from large urban centers. The communities ranged in size from 1,800 to 25,000 people, with the majority having fewer than 5,000 residents.

Ethical approval was obtained from the various health regions in which the preceptorship was undertaken and the Health Ethics Review Board of the researchers' university. Consent was elicited prior to and throughout the interview process. To ensure anonymity and confidentiality, participant names were removed from all data sources and were replaced with pseudonyms. As well, events were modified in such a way as to protect the anonymity of those people living and working in the rural communities in which the preceptorship was undertaken.

**Data generation**

A total of 26 semistructured ethnographic interviews (Spradley, 1979) with 12 nursing students and 6 preceptors were conducted. After clarifying the purpose of the interview, we asked questions to elicit cultural information and to help discover the meaning of words that the participant used to describe their culture. All of the interviews were guided by the emerging domains and taxonomies, so questions became more explicit with time. Five students and one preceptor participated in a second interview. These interviews were scheduled halfway through the preceptorship and at the end of experience. We felt this type of scheduling would permit the participants to reflect on their experience and would provide us with a rich description of the rural hospital preceptorship.

The surface structure of the semistructured qualitative interview is that generally this type of interview is conducted only once, takes between 30 minutes to several hours to complete, and is usually scheduled in advance at a designated time and place outside of everyday activities (Dicicco-Bloom & Crabtree, 2006). In particular, the surface structure of the ethnographic interview has three stylistic elements (Spradley, 1979). The researcher begins each interview by clarifying its purpose. As the interview progresses, the researcher takes more control of the process by introducing questions that are sequenced and paced according to the conversation (Sorrell & Redmond, 1995). For example, each interview in this study, regardless of whether it was in person, or conducted by telephone or videoconferencing, began with a grand-tour question: "Describe what the rural hospital experience is like for you." Questions eliciting ethnographic explanations, such as "What was it like being a student in a rural hospital?" were then asked. Finally, to help discover the meanings of words that the participants used to describe their culture, questions structured to find similarities and differences in how they see the words were asked. For example, participants were asked to describe a typical shift and an atypical shift.

Six in-person interviews occurred at mutually convenient times and places, including the hospital board room or library. Ten telephone interviews were conducted at mutually convenient times. When telephone interviews were used, all of the participants chose to have the telephone call placed to their home phone number. The remaining interviews were conducted via videoconference. A preceptor and three of the five students who participated in interviews via videoconferencing participated in a second interview that was also videoconferenced. Although videoconferencing systems vary in cost and complexity, ranging from inexpensive desktop systems to fully integrated classrooms (Chapman & Rowe, 2001), for this project we had access to a fully integrated classroom and technical support. All of the participants' video-conferencing sites were located within their local rural hospital, and technical support was offered by local administrative staff trained in the use of the videoconferencing equipment.

**The decision to use videoconferencing as a medium**

Fieldwork that includes interviewing, observing, administering surveys, and other kinds of data generation is often the most difficult and time consuming part of a research study (Shuy, 2001). Fieldwork is even more challenging for researchers whose participants are geographically dispersed over a wide area such as in this study. Although we did not initially plan to use videoconferencing technology, believing that in-person interviews were the best option, it soon became clear that conditions beyond our control meant that we needed to consider using videoconferencing technology over in-person and telephone interviews. For example, inclement weather conditions—a 30-year record snowfall occurred during the period students were in their rural hospital-based preceptorship—were experienced during the data collection phase of the study. As a result, we were concerned about traveling on icy and unplowed rural roads. In fact, it was not uncommon to hear the local police and the provincial motor association issue travel warnings, resulting in the postponing and/or cancellation of the interview. Unable to generate data in person, we needed to maximize the amount of time spent with each participant to ensure the best quality data possible.

A second reason videoconferencing was chosen as the medium for interviewing participants was that the cost of in-person interviews was determined to be significantly higher than that of videoconferencing (Chapman, 1999). In fact, when a SuperNet connection[1] could be secured, there was no cost other than that associated with the technical support person's work time, which was generally about one hour. Telephone interviews and videoconferences using the ISDN incurred comparable costs as both use telephone lines subject to long-distance telephone call charges. ISDN videoconferencing also incurred costs associated with the technical support person's work time. Costs associated with in-person interviews included cost of transportation and accommodation for two or three days. At the time in which the project was undertaken, because of the provincial economic climate securing accommodation was often very difficult and costly, and the price for gasoline had reached an all-time high.

**Data analysis**

Data collection and analysis occurred simultaneously, beginning with the first interview (Germain, 2001; Morse & Richards, 2002). To uncover a system of cultural meaning students and preceptors used during the preceptorship, four kinds of ethnographic analysis were used: domain, taxonomic, componential, and theme (Spradley, 1979). Constantly comparing codes and theoretical sampling helped to ensure that the students' experience of a rural hospital preceptored clinical placement was represented (Germain, 2001). Verification strategies that included investigator responsiveness, methodological coherence, sample appropriateness, concurrent data generation and analysis, theoretical thinking, and theory development established reliability and validity (Morse, Barrett, Mayan, Olson, & Spiers, 2002).

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**Reflecting on the merits and limitations
of videoconferencing**

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Using multiple modes of conducting interviews gave us a unique opportunity to compare and contrast the different approaches we used. Although there are varying points of view regarding the advisability and utility of using videoconferencing technology to conduct research interviews (Musselwhite, Cuff, McGregor, & King, 2007), by using Shuy's criteria (2001) for determining whether the interviews conducted in this study should be videoconferenced we were able to determine that it would be effective mechanism for data generation. For example Shuy suggested that the respondents' characteristics and type of information that will be shared should influence the decision to use alternative interview mediums such as the telephone or videoconference. As noted earlier, the participants in this study were located in rural settings. As such, rural sites frequently depend on Telehealth (a videoconferencing system) for

professional consultations and educational sessions (Harris et al., 2007; McCrossan et al., 2008; Shore et al., 2007). Consequently, all of the participants, including the students, had some degree of familiarity with videoconferencing technology. Therefore, we felt that using this medium for interviewing was appropriate.

Another primary reason videoconferencing was chosen whenever possible rather than the telephone interview when in-person interviews were not possible was that we believed that with the visual cues available through videoconferencing, the interview would more closely resemble the in-person conversational style of interview (O'Conaill et al., 1993; Sellen, 1995). Videoconferencing provided a rich medium where multiple nonverbal and verbal cues, the use of natural language, and immediate feedback allowed the participants to express personal feelings and emotions (Chapman, Uggerslev, et al., 2003). Thus, videoconferencing allowed us to preserve more of the features found in our in-person interviews.

Although the structural features of an interview are important in the establishment of a successful interaction, the establishment of rapport is equally important. To that end, as in our in-person interviews, rapport in the videoconference-mediated interviews proceeded through the stages of apprehension, exploration, cooperation, and participation (Dicicco-Bloom & Crabtree, 2006). Many of the participants in this study, regardless of the medium used to conduct the interview, indicated that they were a little nervous and apprehensive with being interviewed and did not know if they would have information that would be helpful to us. Once reassured that sharing their experience was indeed important to our understanding of the preceptored rural hospital-based experience, the interviews proceeded through the other stages. None of the participants who were interviewed via videoconferencing verbalized concern with the technology. Rather, all of these participants indicated they were pleased they could meet with the researchers "face-to-face." Consequently, the interviews were more of a friendly conversation (Spradley, 1979), an everyday event where contextual naturalness was obtained (Shuy, 2001). Indeed, some participants who could not be interviewed either in person or via videoconference but were interviewed via telephone expressed disappointment that they could not meet with us "face-to-face" via videoconferencing.

To foster the exploration of the meaning and perspective of the rural hospital-based preceptorship (Dicicco-Bloom & Crabtree, 2006; Warren, 2001), we used an unfolding interviewing technique to elicit responses to sensitive questions in all of the interviews regardless of the medium (Shuy, 2001). To support the unfolding of the participants' story in videoconferenced interviews, we used a high-bandwidth connection like a SuperNet connection whenever possible; this proved invaluable as important facial visual cues were provided to the participants and us. As a result, little adaptation was needed during these interviews. Thus, being sensitive to body language helped us to establish rapport even when sharing the same physical space was not possible.

Although there might be concern that videoconference interviews take less time and so might not permit the participant and researcher the opportunity to work through all of the interview stages described above, our experience coincides with Shuy's (2001) reflections on the advantages and disadvantages of using technology as a medium for conducting interviews. All of the interviews in this study regardless of the medium we used to conduct them were booked for a 2-hour period. We began each interview with some small talk, which then led us to collect demographic information. We answered any questions the participants might have concerning the study and/or videoconferencing technology, which was then followed by the grand tour question. Although some in-person interviews lasted only 1.5 hours, the majority lasted the full 2 hours. All of the videoconferenced interviews also lasted 2 hours, which gave the participants ample time to share their experiences with us. Only on one occasion did a videoconference interview last significantly longer than the 2-hour time frame negotiated. So that the participant could finish sharing her experience with us, a second videoconference interview was

scheduled. The only difference we noticed between the different types of interviewing mediums is that because the scheduling of the videoconferenced interviews was based on the availability of the equipment and supporting personnel, the time frame for these interviews was a little bit more structured.

The length of the interviews and the depth and detail of the data generated meant that recording the interviews was essential. Tape recording each interview, then, was a consideration as it could have a significant impact on data generation and analysis. After experimenting with different types of tape-recording cassette players as well as their placement within the classroom's physical space, to get the highest quality recording possible, we placed the cassette player on a table directly under a ceiling microphone. This placement eliminated extraneous noises and produced a high-quality, clear recording of the participants' and our voices.

**Disadvantages of videoconferencing interviews**

Although there are not many disadvantages to using videoconference technology for conducting qualitative interviews, the disadvantages that do exist require discussion and consideration. In any qualitative study, data generation and analysis occur simultaneously (Germain, 2001; Morse & Richards, 2002). As analysis proceeds, deliberate or focused sampling is necessary to validate or compare data so that the entire phenomenon under study is represented (Morse, Barrett, et al., 2002). Participants whose experience is significantly different from that of the other participants are sought. Interviewing participants with a substantially different experience might be more difficult when using videoconferencing because of the lack of physical presence, which tends to be more intimate (Sellen, 1995; Shuy, 2001). Therefore, for those participants who have sensitive information and difficult experiences to share, the researcher's lack of the physical presence might have a negative influence on the degree of sharing. In this project, one participant known to the principal investigator shared painful memories during an in-person interview. The participant's preceptor counseled her to get psychiatric help and effectively "blackballed" her. The result was that the student was unable to become part of the hospital team, a necessary component of a successful preceptorship experience (Sedgwick & Yonge, 2008). By being physically present, the principal investigator was able to communicate acceptance and support of the participant by using open body language. As well, she expressed caring and compassion by offering the participant tissues, rest periods, and the occasional physical touch of the hand or shoulder. Although compassion can be expressed through tone of voice and nonverbal facial expression through videoconferencing, none of the behaviors that rely on tactile sensation could be expressed through this medium. We are uncertain that interviewing this particular participant using videoconferencing technology would have resulted in a level of trust necessary for in-depth sharing to occur. Subsequently, there most likely would have been an impact on the type of data generated.

A second disadvantage deals with the quality of call speed (kbps). ISDN connections generally have slower call speeds (128–384 kbps) than do SuperNet connections (>1,024 kbps). Similar to other researchers (O'Conaill et al., 1993), we found low-bandwidth ISDN connections resulted in poorer image quality and transmission lag, where sudden movements appeared jerky and blurred. At times the participant's face was less clear depending on the camera angle and how the participant was sitting. This reduced our ability to see the participant's facial cues and to establish eye contact. Most often, however, the participant's image was displayed only from the waist up, which could restrict the researcher's ability to observe nonverbal behavior (Chapman & Rowe, 2001).

A final disadvantage of using videoconferencing is the availability of the technology. When the project began, a provincial service that could be accessed for booking videoconference meetings did not exist. The lack of a provincial service meant that the technical support person from the researchers' home site had to contact the rural site several times to confirm the booking and to perform a test run to ensure a stable connection. Setting up the videoconference was time intensive, and it often took a few days to a

few weeks to confirm the booking. One three occasions, even after confirming the booking, the videoconference was cancelled on short notice by the rural site because meetings with higher priority took precedence. The establishment of a provincial program called Videoconferencing Service late in the project helped to reduce the amount of work for the technical support person by readily providing information regarding videoconference availability, reducing the number of conflicting meeting times.

**Recommendations**

In our experience, videoconferencing proved to be an excellent medium to conduct face-to-face interviews with participants who were geographically dispersed and who would otherwise have been interviewed by telephone only. We were most satisfied when a high-bandwidth videoconferencing connection such as SuperNet was used because of the reduced time lag in transmission, which resulted in a more natural conversational context (Winters & Winters, 2007). Therefore, we recommend that the call speed of the available system should be 1,024 kbps or more so that high-quality images are received and shorter transmission lags occur, resulting in a conversation similar to in-person interactions. Moreover, because qualitative interviews rely on having a "hard" copy recording for transcription purposes, unless the videoconferencing system has audio recording capability, experimenting with various types of recording devices prior to the first interview is also recommended.

Videoconferencing using either an ISDN or SuperNet connection drastically reduced the cost of conducting research in the rural setting. As technology advances, it might be feasible to consider video chat also known as Web conferencing, which is a two-way full video and audio conversation using Internet protocol (IP) technologies through personal computers (Annetta, 2005). Such technology would eliminate the need for the technical support currently required for videoconferencing, further reducing costs. In addition, availability concerns would be alleviated as the connection is between personal computers and would not be affected by the need to have the technology available for other purposes.

Finally, the type of participant and their needs should be considered prior to videoconferencing. Participants who will be sharing particularly sensitive information or difficult experiences might share more readily and to a greater degree in an in-person interview where the researcher is physically present.

<div align="center"><b>Conclusion</b></div>

Technology is rapidly changing how we communicate and interact with each other in everyday life and at work. At the same time, multimedia technology such as videoconferencing is modifying the way researchers gather data (Graffigna & Bosio, 2006). To engage participants dispersed over large geographical areas in in-depth qualitative interviews, videoconferencing provides the researcher with a viable, cost-effective alternative to in-person interviewing. Using a high-bandwidth connection permits the interview to unfold in a manner similar to in-person interviews and so possesses the advantages associated with in-person interviewing. A disadvantage of videoconferencing might be experienced when discussing with participants information of a highly sensitive nature or those perceived as particularly difficult for them. Another disadvantage is that satisfaction with the interaction might be influenced by the bandwidth of the connection. Higher bandwidth connections generally result in greater satisfaction with the videoconferencing experience. The last disadvantage with videoconferencing is the availability of the technology however with the introduction of Web conferencing this concern may be alleviated. The recommendations made in this paper for using videoconferencing as a medium for conducting in-depth qualitative interviews include using a high-bandwidth connection such as SuperNet or Web conferencing, and evaluating whether the type of information being sought is likely to be shared in situations other than in-person face-to-face situations.

**Notes**

1. Alberta SuperNet is a high-speed, high-capacity broadband network linking government offices, schools, and health care facilities and libraries province wide. The Alberta SuperNet network makes it possible for service providers to offer high-speed services to areas that have been too expensive or difficult to reach.

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