

Article

Researching From a Distance: Using Live Web Conferencing to Mediate Data Collection

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Abstract

Advances in technology have transformed the way people learn, work, and conduct research. An increase in online university courses offers geographically separated learners a chance to work together using live videoconferencing software. Researchers, however, have little guidance on how to collect qualitative interview data in these virtual environments. This article examines how researchers used live videoconferencing software to conduct interviews with participants separated geographically in a graduate education course. The authors point out the ethical and practical challenges that arose from using this method of data collection and offer advice on overcoming these obstacles. The authors conclude live videoconferencing software has the potential to be a viable data collection tool for researchers after considering the practical and ethical concerns associated with this method.

Keywords: distance learning, Elluminate Live!, interviews, live data collection, online learning, technology, videoconference

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Introduction

Technology has changed how education at the university level takes place. Instead of depending on face to face meetings, universities are utilizing internet-connected computers to provide an increasing number of distance-delivered courses to learners who are separated geographically (Allen & Seaman, 2010; Bates, 2008). Virtual learning environments have spawned an entire branch of research devoted to identifying best teaching and learning practices in online settings (Ludwig-Hardman & Dunlap, 2003; Rovai, 2002a, 2002b; Salmons, 2010), but little guidance has been devoted towards *how researchers* should employ best research practices for their work in online settings.

In this article, we examine how technology that supports online courses can also be used for qualitative data collection. While qualitative methodologies in online settings have received some attention in recent years (Exter, Korkmaz, Harlin, & Bichelmeyer, 2009; Irani, 2010; Miller, 2009), there is a dearth of information on videoconferencing as a platform for conducting qualitative research. Live videoconferencing has much potential as a valid qualitative methodology (Salmons, 2010), and in this article we describe our efforts to use videoconferencing software to facilitate live interviews with geographically separated participants. After briefly describing some of the relevant literature that framed our study, we explain the process of how we used videoconferencing and the implications the technology and methods had on our study. Our main goals in this article are to describe the data collection methods, evaluate the consequences of these methods, and provide recommendations for researchers attempting similar data collection strategies.

Overview of Online Interviewing

Live, text-based interviewing over the internet has been explored to some degree, but live videoconferenced interviews are a relatively new advancement (Chen & Hinton, 1999; Seymour, 2001). Researchers have recognized software programs, such as *Skype*, *iChat*, *Elluminate Live!*, and *DimDim*, as viable tools to host videoconferencing for data collection purposes (Chapman & Rowe, 2002; Royal, 2008), but few research-based articles offer guidelines for conducting such research (Sade-Beck, 2004). Sedgwick and Spiers (2009) recently published one of the first major articles on the subject; they describe collecting data from nursing students through semi-structured interviews conducted by using live videoconferencing, which they chose because of geographical distance and the costs of travel. The researchers found “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” (p. 6), and these findings confirmed literature previously implying videoconferenced interviews could be a superior alternative to phone interviews (Chapman, Uggerslev, & Webster, 2003). Additionally, Sedgwick and Spiers (2009) advocated the use of videoconferencing for interviews because no participants verbalized any problems encountered using videoconferencing, despite apparent issues of availability of technology and quality of internet connection.

While Sedgwick and Spiers (2009) did not specifically state the program used to conduct the interviews, other studies have examined the advantages of the various online videoconferencing programs (Royal, 2008). Lavolette, Venable, & Huang (2010) compared the use of *Elluminate Live!* and *DimDim*, concluding that *Elluminate Live!*'s audio and set-up structure were superior to the *DimDim* software. Additionally, Nussbaum-Beach (2007) elaborated on how *Elluminate Live!* remained operational regardless of local bandwidth, thus, minimizing one of the drawbacks to online interviews stated by Sedgwick and Spiers (2009). Overall, online videoconferencing as a

means for interviewing is a topic with growing interest for researchers and it requires additional exploration.

The Research Study

Purpose of the Study

We did not originally design our study to investigate how videoconferencing could be used for interviewing participants online; our primary focus was to investigate learner perceptions in an online environment. The initial research question focused on the factors that contributed to learners' experiences with online formative assessment in two courses. A phenomenological approach was used in the study and incorporated interviews, observations, and open-ended surveys with six participants in two online graduate courses for mathematics teachers (Glassmeyer, Dibbs, & Jensen, 2011).

The courses we examined used live videoconferencing software to facilitate class meetings each week; therefore, we decided to use the software to conduct interviews with the six participants and to record our observations of and reactions to the process. The following reports how we conducted the interviews, the consequences we observed due to these decisions, and our reflections on the experience of conducting live videoconferencing. Our purpose is to convey our experiences for other qualitative researchers in order to (1) identify the challenges of using this method, (2) provide advice for overcoming these challenges in ethical and practical ways, and (3) offer our recommendations on whether the benefits of choosing this method outweigh these drawbacks. For the remainder of the article we use a basic qualitative approach (Merriam, 1998) to describe and interpret our experiences of using live videoconferencing to mediate interview data collection.

Setting

We examined two online courses in a two-year program designed for in-service teachers attaining a master's degree in mathematics education. Professors from two universities in western states ran this program and operated on a grant from the National Science Foundation. Our participants, the first cohort of the program, started in the previous summer with a mix of face-to-face and online classes before switching to entirely online courses for both fall 2009 and spring 2010 semesters. The participants were enrolled in two courses during the spring 2010 semester: a pedagogical content knowledge course on geometry and an action research project course. Most learners in the program were enrolled in both courses, totaling 23 individuals overall. Both courses had everyone meet once a week for an hour to use *Elluminate Live!*, wherein live discussion, interactive lecture, and group activities took place. The courses also used Blackboard for file posting and discussion board activities throughout the week. The professor had taught both courses multiple times, yet the current semester was his first time using *Elluminate Live!*

Participants

The participants of the study were adults enrolled in both online courses during the semester. The participants were all in-service teachers at both the middle and high school levels from two neighboring states. We focused on gathering data from six participants (summarized in Table 1) who all taught at different schools, had attended different undergraduate institutions, and offered a wide variety of responses on initial survey questions. Participants had full-time teaching jobs in school districts dispersed geographically across 200 miles.

Table 1: Participants List, including Categories Used to Select Participation

Participant pseudonym	State of Teaching License	Teaching Experience
Camille	state A	6 years
Diane	state A	7 years
Angela	state A	2 years
Clayton	state B	3 years
Daisy	state B	20 years
Ted	state B	10 years

The online format of the courses allowed teachers to attend class virtually from their homes in the evening. Participants' use of video sharing often indicated participants were somewhere mildly secluded in their house, though occasionally children, spouses, and pets would accompany (or interrupt) participants during the class. The universities offering the courses provided each participant with a headset and webcam to be used in the courses, and participants quickly became familiar with the *Elluminate Live!* software used to facilitate the weekly course meetings. The six participants were observed to attend almost every class during the semester, and they regularly used their headset and webcam to participate in small group settings. The six participants attended class from their homes, where all but Daisy's internet connection successfully supported the features in *Elluminate Live!* Daisy's internet connection was able to interact normally in class, though occasionally there would be up to five second delays and Daisy's video quality would suffer.

Researcher Roles

During the time period of the study, the first author assisted the instructor of the online courses with the design and implementation of materials. The instructor taught both classes; however, participants were aware of the first author's connection to the course, and so he emphasized that participant confidentiality would be maintained while he conducted the research. The second author assisted in data analysis and consulted on ethical issues that arose during and after the study.

Data Collection and Analysis

Observations of class meetings were undertaken during the first 10 weeks of the semester, with particular attention paid towards the use of formative assessment. During this time, we, along with the instructor, experimented with the capabilities *Elluminate Live!* had to offer us in facilitating the class. We took field notes about the nature of participants' participation and interaction with the instructor and peers in the weekly course meetings.

The intent of the interviews was to triangulate our observational data about participants' experiences with formative assessment within the course. To select the participants, we emailed all 23 learners in the course three short surveys to provide baseline data. We asked seven of these participants to participate in interviews based on this data and six agreed to participate. We employed maximal variation sampling (Creswell, 2007) in the interview selection process, using the criteria of survey responses, state of residency, and teaching experience (see Table 1).

We used the survey data from the six participants to tailor interview questions, with a few questions common throughout all interviews. The first author conducted the interviews using *Elluminate Live!* because participants were familiar with the program from their weekly course meetings. After the researcher and participant had logged into *Elluminate Live!*, video and audio setup were conducted so that each person's upper body was positioned in a video window and speech could be clearly understood with minimal feedback. Following preliminary conversation, the researcher would state before the interview how confidentiality would be maintained. The first author recorded the interview using a separate program called *Express Scribe*. Interviews typically lasted between fifteen and twenty minutes, and they concluded with the researcher thanking the participant and exiting the *Elluminate Live!* session. After each interview, the first author wrote memos on what content was shared during the interview, how the interview was conducted, and his reaction to this interview process.

Occasionally a graduate student was present during the interview to take field notes. The first author would introduce him to the participant at the start of the interview and explain how he would mainly remain off screen to take notes. The graduate student recorded additional information from the interview, such as visual cues, and also developed and later asked follow-up questions that arose during the interview. We transcribed the interviews, memoed, and maintained an audit trail before developing in-vivo code words from the data collected (Corbin & Strauss, 2008; Creswell, 2007), and we used this analysis to answer our original research question about formative assessment. For this article, we coded the field notes and memos, and we used these data to develop the findings in the following sections about the role technology played in mediating data collection.

Summarized Results

Elluminate Live! was successful in recording the live video-conferenced interviews we collected in the study. While we did not ask participants directly about online interviews, they made only positive comments regarding the software. From the interviews and peer checking of our original results, participants indicated the technology was reliable, user-friendly, and satisfactorily facilitated the courses. From our perspective, *Elluminate Live!* successfully facilitated the interviews and allowed us to record data that would have been almost impossible to obtain otherwise; the exchange of body language, facial expressions, and visual responses (e.g., nods, shrugs, and smiles) could be noted by the researchers and contributed to our data analysis. These features would have been unavailable to see in a phone interview and too expensive to justify traveling to observe in a face-to-face interview.

Reflections on Distance Interviews

After we conducted the interviews using *Elluminate Live!*, we speculated about possible improvements to the process of interviewing from a distance using videoconferencing software. Thus emerged a short list of positive actions we believe helped the interviews as well as a list of problems we encountered for us to avoid in the future. The remainder of this article serves to share our thoughts with the hope of helping others conduct remote video interviews with participants.

Ethical Concerns

We encountered three ethical concerns while conducting the interviews. First, *Elluminate Live!* has a recording feature built into its software, allowing all audio and video feed to be viewed later. Unfortunately, this saved file remained on the internet and, even though password

protected, other instructors had access to all *Illuminate Live!* recordings. Therefore, we abstained from using the *Illuminate Live!* recording feature and used another program, *Express Scribe*, for recording purposes. *Express Scribe* is a downloadable program designed to record audio through a microphone. By placing the microphone midway between the speakers and the researchers, all audio could be captured in an audio file, which was then shared and played back in a manner similar to a file from other recording devices. The program worked well for us, giving us a clear playback of the audio exchange that occurred during each interview. While we did lose some visual data to ensure ethical research was conducted, the recording of field notes assisted in capturing most visual aspects of the interview.

Second, when two researchers were present during the interview, we thought the best plan was to place the researcher asking the questions in front of the camera so the other researcher could take notes without being observed by the participant, thus reducing participant anxiety because they did not see someone writing while they talked (Riessman, 2008; Wolcott, 1995). We made sure to introduce the second researcher because, otherwise, it would be unethical to deceive the participant into thinking there was only one person watching the interview. In consideration of our ethical stance stated in our IRB approval, we would suggest other researchers in a similar position reveal to the participant what is going on during the interview, so they are less likely to feel deceived afterwards.

We anticipated the two ethical dilemmas listed above and believe we handled them in a proper manner. The last problem we encountered was unforeseen, and we wish to bring this issue to other researchers' notice. We conducted the interviews in the office of one of the researchers, which was shared by four other members of the department. We kept the door locked during the interviews to ensure privacy, but during one interview an office tenant unlocked the door and walked into the office, in view of the webcam. The participant saw the new person in the room, and both the participant and the researchers were taken aback by the sudden interruption. The office tenant remained in the office for a few minutes before departing, but she had remained out of view of the webcam and, thus, was no longer viewable to the participant. The situation put the researchers in an awkward position because confidentiality during the interview had been promised, yet someone not on the research team could clearly hear through the speakers what our participant was saying.

The participant did not seem upset by the interruption, though she had only seen part of it; nevertheless, we felt unsatisfied by the situation and later tried to prevent a similar scenario by placing an "interview in progress" sign on the door. Reflecting on the event, we realized outside interruptions during interviews are not unique to our study, yet we believe researchers should take special considerations when conducting online interviews. The main point we make is that when the participant is not in the same room as the researchers and is unable to view what the researcher can, researchers must make ethical choices to ensure the participant is cognizant of the interview environment.

Technological Concerns

Conducting interviews with videoconferencing required more planning than face-to-face or phone interviews for multiple reasons (Sedgwick & Spiers, 2009), such as the participant seeing only a part of the researcher and interview environment. We noticed that when the researcher conducting the interviews looked at the list of questions that were on the desk, the participant only saw the researcher looking away from the computer screen. The apparent lack of concern suggested by this action, combined with the documented beneficial effects of virtual eye contact (Yuzar, 2007), prompted us to open the list of questions on a *Word 2007* document during the interview, so the

researcher could reference the questions without looking away from the screen. We thought the change was a vast improvement because observers have been documented to notice even small changes in online eye contact (Grayson & Monk, 2003; Tam, Cafazzo, Seto, Salenieks, & Rossos, 2007). Managing three programs (*Elluminate Live!*, *Express Scribe*, and *Word*) simultaneously was not difficult, but did require additional setup prior to the interview. To ensure maximal computer performance, we closed other programs not in use, such as internet and email, which also helped eliminate unwanted distractions for the researcher during the interview.

A major technological issue we were unable to resolve was the poor internet connection experienced by one of our participants. Daisy lived in a rural area in a neighboring state, and because of the low-quality internet connection, the video and audio transmission would sometimes slow down or even pause at times during the interview. Rather than cut out the missed data, *Elluminate Live!* would increase the playback time to make up for the missed time (Nussbaum-Beach, 2007). Essentially, this meant the audio and video data would be faster for a few moments to catch up to live transmitting and, then, the interview could proceed normally. We were able to hear all parts of the interview, although transmission was abnormal and sometime humorous when the program sped up the transmission (i.e., chipmunk voices). We were thankful *Elluminate Live!* automatically adjusted the transmission because not all other software performs similarly (Lavolette, Venable, & Huang, 2010).

Conclusions

Based on our results from using videoconferencing as a method of data collection, we were satisfied with the incorporation of videoconferencing in the interviews. This technology allowed us to interact with the participants in a setting that included visual data, such as body language and facial expressions, which contributed to in-depth analysis of the interviews (Gillham, 2005). The important role of participants' sense of community in online courses also may have contributed to gathering richer data from our participants, since videoconferencing is one way to increase interaction in online settings (Chapman & Rowe, 2002; Dawson, 2006; Rovai, 2002a; Sedgwick & Spiers, 2009). Based on this literature and the results of this study, we believed the videoconferenced interviews provided more in-depth data than a typical phone interview would have provided. Also, since videoconferenced interviews made our study possible by eliminating the travel time and cost normally associated with face-to-face qualitative interviews, we believe this method was the best option to mediate our data collection, particularly since participants' regular in-class use of *Elluminate Live!* each week helped them overcome both unfamiliarity with and unavailability of technology, which are issues discussed by Sedgwick and Spiers (2009) and Fielding and Thomas (2008).

Technological and ethical concerns arose in the use of *Elluminate Live!* for recording interviews, which we point out for other researchers to consider prior to using these methods. For example, the participant must be made aware of the physical environment in which the interviewer is located because people off camera are able to see or hear the interview taking place without the participant's consent. We highlight the need to take additional confidentiality precautions to prevent unethical situations from arising in videoconferenced interviewing. As with many new technologies, the researcher must be familiar with each software program used to run and record the videoconferenced interview and must also feel comfortable running multiple software programs simultaneously during data collection. We believe identifying and sharing these issues can encourage preemptive measures, such as proper setup and reflexive practices in data collection, that ensure quality, ethical data is collected.

We would recommend using videoconferencing software for online interviews in other settings

with similar advantages, namely, with participants who have regular access to and familiarity with technology and reliable software capable of hosting the interview. Gathering data from synchronous text-based settings has proved successful, particularly when researchers have conducted studies involving participants with disabilities or online focus groups (Seymour, 2001; Stewart & Williams, 2005). We contend that adding videoconferenced interviews could further improve the advantages of online interviewing; however, more research is needed to fully understand such settings. Given the data quality differences between face-to-face and phone interviews (Irvine, 2011), the inclusion of videoconferenced interviews in more comparison studies would provide further empirical evidence of the effects of using this method in relation to other qualitative methods. We hope the information offered in this study can help guide other researchers wishing to implement a high-quality, cost-effective, and ethical method for collecting interview data from geographically separated participants.

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