Teaching Qualitative Analysis Using QSR NVivo[1]

Margaret Walsh
Keene State College, Keene, New Hampshire USA

This paper describes new opportunities for teaching qualitative research methods to undergraduates using software as a tool. The author recounts her own experiences and challenges using one such program, QSR NVivo. The account includes students' reflections on how technology advances the analysis process. Strengths and weaknesses of the software and presented and discussed. Key words: Qualitative Analysis, NVIVO, Teaching Sociology, and Research Methods

When I first learned how to do field work, I relied on a large loose-leaf binder, and I wrote down my observations in neat, loopy handwriting. I carried that binder with me everywhere, and I worried constantly about it. What if it got into the wrong hands? What if I couldn't decipher my own writing when it came time to make sense of all this? Initially, I also wondered about what exactly I should write down. Eventually, I found ways to distinguish between notes from interviews, observations, and my own thoughts and feelings about my research projects. Although I tried, I just could not keep those binders neat and organized – I wrote in the margins, crossed entire sections out, drew pictures, highlighted, and inserted pages haphazardly. Ideas were floating all over the place. Those messy, crumpled binders now sit on a shelf. I can not bear to throw them out, but as I look at the yellowing pages, I consider how the latest tools of today's organized researchers –laptops, PDAs -- have shifted the way we think about our work. How has technology transformed the way we do qualitative research? Is paper irrelevant? Do computers get in the way of our ideas, our creativity?

I have taught research methods about a dozen times and I find that most undergraduates consider the prospect of doing qualitative research both exciting and intimidating. Most upper-level students are already well-trained in quantitative methods as part of the curriculum for sociology majors, and our students were skilled in using Statistical Package for the Social Sciences (SPSS). It made sense to teach them to use software to facilitate textual analysis as well as numerical analysis. I wanted to reveal the mysterious process of transforming piles of field notes into a report by being teaching them ways to be highly conscious of research design and data collection, and to document their thoughts faithfully from the start of a project.

I designed the Qualitative Analysis course as an upper-level sociology elective, and taught it for the first time in Spring 2002. On the first day of class I told the ten

students enrolled in the seminar that they would be practicing the skills that many sociological and anthropological researchers use to inform their understanding of social life. The format would be a combination of discussion and hands-on activities, with topics ranging from theory to sampling to varieties of data collection. They also would learn how to manage projects, analyze data, and write-up results. Bruce Berg's (2001) *Qualitative Research Methods for the Social Sciences* provided a framework for learning different research techniques. Students also pursued their own research questions that required reviewing literature and gathering observational data for a period of about 12 weeks.[2] They familiarized themselves with NVivo by using sample data provided by the authors, and eventually they created their own project documents.

Learning objectives for the course included: 1) understanding how sociologists design and carry out qualitative research studies by reading case studies and methodological reference notes; 2) identifying and explaining a variety of research techniques including participant observation, focus group interviews, ethnographic field work, action research, archival research, historiography, oral history, case studies, content analysis; 3) collecting, organizing and analyzing qualitative data through in-class activities and independent research; 4) using NVivo software for textual data analysis and theory construction; 5) appreciating the methodological rigor of qualitative sociology; and 6) understanding and applying research ethics.

We reserved time each week to discuss the progress of students' work, and to troubleshoot problems that came up. I was surprise that entering the field did not generally present challenges. Many of the students had completed internships or they had some exposure to service-learning as part of their coursework. These experiences were beneficial because most were already comfortable observing and interacting with others in the community. At the beginning of the semester the students met with me to ask questions about the reading or work required for this course. We aimed for a relaxed atmosphere that felt more like a workshop than a classroom. In my estimation it took several weeks before students were able to identify a question or two that was both qualitative in its design and answerable within the time frame allotted.

The first qualitative work my students read was Elliot Liebow's (1993) *Tell Them Who I Am,* an ethnographic study of homeless women. They were all impressed by his research. When we discussed his method in class, however, students wondered *how* Liebow was able to arrive at his conclusions. They wanted to explore the decisions that researchers make about what quotes to use, what theories to use, how to assess the validity of different kinds and sources of information. For my part, I wanted students to gain an appreciation for the rigor of qualitative research. I wanted students to avoid being discouraged about the stops and starts of their individual projects, and simply to take risks with their thinking and writing. I also wanted them to engage in peer review, so they could share their insights and push each other along through the semester.

Which program would meet these requirements? Over the past two decades, a steady stream of software products has emerged to address the needs of qualitative researchers. Some of them are designed primarily for coding and searching text and others are useful for research teams who need to share access to data. I have experimented with several different programs over the past decade, and I selected NVivo,

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[2] I explained research ethics to students and secured IRB approval for the course assignments.

a popular software program developed by Qualitative Solutions and Research International (QSR) for my students to learn.

NVivo is a useful teaching tool because it works like my old loose-leaf binder. Many different kind of documents can be kept in one place, and they are linked together for easy access. Also, one can quickly trace the progression of an idea from its earliest stages using NVivo. Early documents that represent the beginning of a project journal can co-exist with a final version of a report. An early literature review may have suggestions "scribbled" on it in red font, and rather than updating and replacing it with a new version, both can be easily preserved as separate documents without creating an organizational nightmare. This feature resembles the "by hand" method of tracking the progress of one's ideas without adding to the mess in one's office. But this electronic location is a safer place, since it can be locked with a password, and backed-up on a server.

I found that switching from paper-based to electronic, software-based research allowed more freedom to play with ideas, because researchers can link and compare patterns within and across documents and the results can be saved, printed, or undone at will. When beginning a project, researchers create new documents or import text, numerical data, and graphics files from compatible software programs. NVivo organizes raw data (interviews, observations, etc.) and links them with memos and "databites" where researchers might make codes and analytical notes, and then edit and rework ideas as the project progresses. For those involved in multiple projects, it is helpful to keep track of activities from one session to the next. Video images can also be linked to text documents.

NVivo has its own lingo that users will need to learn in order to maneuver around the program. For example, the researcher maneuvers from one document to another using features called "doclinks," "nodelinks," "databites," and "datalinks." The author creates "nodes" to mark relevant concepts and topics in text documents that can be searched and analyzed. It is a relatively easy program to learn, especially for those who are already familiar with a variety of Windows-based programs.

Students began creating documents and memos within the first few weeks of the course to keep track of their research projects and to document their learning process. Students created several kinds of memos to record their observations. In *The NVivo Qualitative Project Book* (Bazeley & Richards, 2000) a memo may be "a major think piece about theory, possibly the first document you write, and not linked to any other data. Or, it can be just a reminder to yourself about things that draw your attention, queries raised in your mind, things you want to follow up, linked to the data it is about" (p. 45). Students shared their field notes with me every other week. In addition to these assignments, students also kept informal "journal entries" describing how the program worked for their needs. In some cases I made adjustments to the course as a result of feedback from students. I created additional time for the students to use NVivo in class so that I could be available when students had technical questions or needed help with the creation of concepts. Students seemed to master the basics rather quickly. Most of the students immediately responded to the flexibility and organizational benefits of using the software. As one student put it,

> *The coding system is a way of labeling certain aspects of your data and sorting the information into distinctive categories. It is an easy way of keeping track of*

your ideas as well as documents about specific topics. Coding lets you use words, phrases, and ideas directly from the text and you can, capture information about things (such as how someone was feeling, when something happened) and explore them further when you decide it's time.

This example shows how the early phase of coding progressed for most of the students. Moving from data collection to data analysis is very difficult, but they slowly began to identify themes by reading and re reading their data sources, and by writing down their interpretations of what they were seeing develop in front of their eyes.

When the NVivo first opens on your screen, you will see a "project pad" that will direct you to several options: creating your own project database, opening up a saved project, or running the tutorial. My student researchers created their own database by writing a project proposal, writing a journal, making notes from research articles for a literature review, transcribing interviews and observations. Although we did not use photographs or other web-based documents, it is possible to link those as well. *The NVivo Qualitative Project Book* (Bazeley & Richards, 2000) is a useful companion to the software for researchers who want to learn as they go. The book comes packaged with a demonstration version of NVivo 1.2 on CD-ROM so readers can learn the program. It includes tutorial project data from an interesting study of what motivates people to become researchers, saved in six different versions to show the progression of ideas from the early data collection phase to coding techniques and theory development. If the reader is going to use the program for original research, the full software is necessary. Otherwise, you would not be able to save your work. My students all worked on computers equipped with the full professional version of NVivo, so we were able to use the book as it was intended, to lead researchers through a real research project.

The book is divided into nine parts. Each part has instructions labeled "D.I.Y." (Do It Yourself) and graphics to illustrate each step of the process and tips for using the program. The first section walks the reader through program installation and how to create a project database. Later sections cover editing and coding documents, linking different kinds of documents, constructing theories, and validating patterns. The software is best suited for smaller research projects (less than 300 documents) but you can do sophisticated work using this program, including grounded theory and conceptual modeling. Students played "musical chairs" in our research lab, reading and responding to field notes and observations with questions and commentary. This process eased students' anxiety about writing and analyzing data, and allowed them to measure progress, or to discuss stumblings, throughout the semester. Of the ten students, no one was resistant to using the program, but accessibility was an issue. Student licenses for NVivo accompanied the text and were helpful for tutorial purposes but they do not allow the researcher to save any work. Fortunately I was able to use technology funds to purchase twelve professional licenses to equip one of the computer labs. This, of course, meant that students had to use the software on campus computers. It would be better for each student to purchase software to be used at home or in the field, but at several hundred dollars per license, this might be unrealistic, especially at the undergraduate level.

The other challenge that we encountered was lack of time. The learning curve was steep and the workload for students was heavy. Students designed and carried out the

entire research project in the space of one semester, so they were under considerable pressure to develop ideas quickly. As experienced researchers know, no software program will do the analysis for you. While some students might welcome that invention, skeptical researchers worry that qualitative software will be used to impose rigidity, to imitate quantitative analysis techniques or to oversimplify complex social processes. We did not find that to be true. Advanced technology has brought us excellent innovations in the ability of software to organize and audit qualitative analysis, paving the way for researchers to collaborate, replicate, and convince the skeptics of the importance of thorough qualitative research to understanding society. My students welcomed the opportunity to engage in the creativity and intellectual demands of doing social research. In his final project journal, one student offered this summary: *"The entire project was a pretty hard thing to do, and took a lot of time and patience."*   Another student concluded, *"Qualitative Analysis is more challenging than quantitative in many ways but it is also that much more rewarding when you complete your study or write your report.*

Would I recommend NVivo to others? Will I use NVivo (or any software) to teach this course in the future? While I have more to learn about this program's features its applicability to different kinds of qualitative data, I am hooked on the idea of providing students with new tools to explore data. In my first experience teaching Qualitative Analysis, the lab component provided us with a common challenge and the students had an "excuse" to learn more about each others' research than we otherwise might have in a traditional class setting. I have incorporated the peer review aspect of the course in other methods courses as well. They enjoyed the workshop atmosphere of the class and they produced fascinating papers that were well documented. Moreover, students learned organizational and technical skills that have wide applicability both in sociology and in other fields of study.

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Author Note

Margaret Walsh, Ph.D., is Assistant Professor of Sociology at Keene State College in New Hampshire. She teaches undergraduate courses in research methods, stratification, and families. She does applied qualitative research in communities in New England and upstate New York. She can be contacted at Keene State College, Rhodes Hall, MS 3400, Keene, NH 03435-3400; Phone: 603-358-2905; Email: mwalsh@keene.edu.

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