Heather L. O'Brien
School of Library, Archival and Information Studies
University of British Columbia, Vancouver, British Columbia

Raewynn Bassett
Dalhousie University, Halifax, Nova Scotia

User Engagement in the Context of Qualitative Data Analysis Software

Abstract: This research explores the qualitative researchers' perceptions of computer assisted qualitative data analysis software (CAQDAS) through content analysis of blogs. The purpose of this exploratory work is to understand the existing relationships that scholars have with CAQDAS, and how the use of these tools promotes or hinders engagement during the research process.
Résumé : Au moyen d'une analyse de contenu de blogues, cette recherche explore les perceptions qu'ont les chercheurs qui emploient des techniques qualitatives à l'égard d'un logiciel (CAQDAS) d'analyse de données qualitatives assistée par ordinateur. L'objectif de cette phase exploratoire est de comprendre la relation existante entre les chercheurs et CAQDAS et comment l'utilisation de ce type d'outils engendre ou empêche l'engagement durant le processus de recherche

1. Introduction

The work of the scholar has long been of interest to the library and information scientists (LIS). This research has examined disciplinary differences in the ways in which scholarly communities locate, read, and produce scholarly information. However, the "information work" (Palmer & Cragin, 2008) of the scholar extends beyond locating and disseminating information. For many scholars, working with data (i.e., gathering, analysing, storing, sharing) is part of the research process and also constitutes information work. Today's researchers have a variety of tools and resources available to use over the course of a research project, e.g., quantitative and qualitative software, digital libraries, data collections, bibliographic software, etc. Scholars may adopt these tools and, based on their functionality, use them during specific stages of the research process or throughout a project. The issue becomes how well these tools and resources support, as opposed to detract from, engagement in the research. This problem has been documented in the qualitative research community regarding the use of Computer Assisted Qualitative Data Analysis Software (CAQDAS) (Pfaffenberger, 1988). These tools are information-rich objects that assist the researcher in identifying threads in the data, organizing them, and interpreting their meaning. Here we describe exploratory work intended to understand the existing relationships that scholars have with CAQDAS, and how the use of these tools promotes or hinders engagement during the research process.

2. Engagement with Qualitative Software

Engagement has been described as users' perceptions of the quality of an experience with a computer technology, characterized by focused attention, novelty, felt involvement, aesthetic appeal, perceived usability, and endurability (i.e., the overall evaluation of the interaction as successful,

rewarding, worthwhile, etc) (O'Brien, 2008). Engagement relates to the interaction between the user and the technology that shapes the short- and long-term experience of using a computer system or application; it takes into account the users' ability to maintain their attention and interest in a computer-mediated activity, as well as the attributes of the technology itself, such as its functionality and presentation.

Some CAQDAS developers discuss features of specific CAQDAS that encourage engagement with one's data. Muhr (1991) emphasizes the interactivity, ease of use, and direct manipulation of ATLAS/ti. Seidel (1998) likens the Ethnograph to a dynamic topographical map, where the landscape is constantly changing: the process of qualitative analysis leads to new ideas and reflections, which "are themselves data" (p. 325-326). Qualitative software is supporting the analysis of multimedia materials, including text, graphics, video and audio (Hesse-Biber, Dupuis & Kinder, 1991). This is not only related to efficiency – having all of one's data sources in one location for comparison – but also opens up further possibilities for researchers who may have been constrained by text.

Qualitative researchers' ultimate goal is to "get close" to their data (Richards, 1998). How do we determine the "success" of a software program in enabling this goal? The literature reveals a number of qualities that qualitative software should have: interactivity, flexibility, efficiency, etc. and that it should act as a map of one's data and be sensitive to the ways in which researchers work. However, tools may also detract from the research process. Lack of engagement may be brought about if the scholar encounters challenges with usability, is unable to integrate the tool into his/her conceptual approach to research, or finds the software incompatibility with other research tools or activities, such as sharing information with colleagues.

Our goal was to investigate the perceptions of users who are currently using CAQDAS. We are interested in their experiences using the tools, but also in their descriptions of their research process, which we feel is essential to understanding the nature of engagement with the data and with the tool.

3. Exploratory Research

This exploratory work involved content analysis of qualitative research blogs. Blogs were identified as a naturalistic way of examining researchers' thinking about qualitative research and software, and as a means of achieving some basic understanding about the nature of engagement with qualitative software that could be used to inform future work. Using *Google Blog Search*, we identified research blogs related to the topic of qualitative research. The resulting blogs were examined carefully to see if their content included posts about CAQDAS or the qualitative research process. After relevant posts were identified, the archives and the blogrolls were examined to identify other potentially relevant blogs. As a result, over forty blogs were identified for further evaluation. This led to the identification of thirty-two posts written between 2006-2011.

These blog posts and their accompanying comments (which ranged from none to forty two) were imported into NVivo. Content analysis was used to extract themes from the data. Some codes were developed prior to examining the data. Since engagement was of interest, its attributes (usability, aesthetic appeal, etc.) were defined as codes. Other codes emerged through examining the posts. For example, some content was related to the perceived role of the researcher in using CAQDAS to perform analysis. Once the posts and associated comments were coded, the data was examined as a whole to understand how the codes related to each other and to see overarching patterns. Some of

the findings are described briefly here and will be elaborated upon further in the conference presentation.

There was much discussion around the comparison of various CAQDAS on attributes associated with engagement, such as aesthetic appeal and usability, but also cost and availability (e.g., open access), ease of learning and, compatibility with the user's computer or other software programs. These descriptions contained positive and negative associations, ranging from excitement at the potential of the software for helping them analyze data to frustration over the usability of the program. Another aspect of this theme was how easy the CAQDAS made collaborating and sharing data with other researchers.

The posts also noted the strengths and limitations of the CAQDAS as bloggers worked through their data and defined its purpose in their work. On a deeper level, the researchers described the ways in which they used the software to organize and present data in order to become more engaged in their research. For example, one person stated, "QDAS is first and foremost for me a visualization tool. It is a place where I can build a structure that allows me to connect all of the bits and pieces of experience in containers and limbs that have a relationship to the larger world of ideas" (Davidson, 2010).

Bloggers also discussed how the CAQDAS was or was not meeting their expectations and underscored that CAQDAS was a tool that required a human operator, "Whatever software tools you use, effective analysis of qualitative data will always take time and care. Coding is a back-and-forth process that takes frustratingly longer than you expect" (Hampshire, 2008). At the same time, they provided insights into what they expected the CAQDAS to be able to do for them (e.g., assist them to visualize data, sync with portable devices).

Examining the blog posts does not give a complete picture of the demographics of the bloggers, but based on the content, there appeared to be a variety of research fields represented (e.g., anthropology, human-computer interaction) and levels of experience with qualitative research and software (e.g., beginners to consultants). The study is limited in its small sample of relevant posts but does offer some insight into researchers' perceptions of qualitative software and its role in their research process. It may be used to inform the design of an interview study with qualitative researchers. In doing so, it will be important to validate the emerging themes in the blogs, and also to probe scholars further about their overall research process and the tools they use in the conduct of their information work.

4. Conclusion

Toms and O'Brien (2008) proposed an "electronic workbench" for humanities scholars based on their discipline-based research activities and needs; a similar approach might be taken for social scientists. As LIS moves forward in supporting scholars in the digital era, an awareness of existing tools and scholarly practices is necessary for gaining a holistic picture of the research process and the myriad of activities scholars carry out with information. This preliminary work looked at a specific type of tool, CAQDAS, and bloggers' perceptions of how it met their needs and fit within their research process. Future work might examine the integration of various resources and tools in the work of scholars, and how various sources of information (e.g., secondary sources, the researchers' own data) are integrated and evolve over the course of a research project.

Acknowledgements

We wish to thank research assistant, Devin Soper.

References

Davidson, J. (2010, February 20). The Journal Project and Qualitative Data Analysis Software (QDAS) [Web log post]. Retrieved from http://qrfrag.blogspot.com/2010/02/journal-project-and-qualitative-data.html

Hampshire, S. (2008, December 16). Analysing qualitative data [Web log post]. Retrieved from http://customersatisfaction.typepad.com/customer_satisfaction_mea/2008/12/analysing-qualitative-data.html

Hesse-Biber, S., Dupuis, P. & Kinder, T.S. (1991). HyperRESEARCH: A computer program for the analysis of qualitative data with an emphasis on hypothesis testing and multimedia analysis. *Qualitative Sociology 14*(4), 289-306.

Muhr, T. (1991). ATLAS/ti: A prototype for the support of text interpretation. *Qualitative Sociology 14*(4), 349-371.

O'Brien, H.L. (2008). Defining and Measuring Engagement in User Experiences with Technology. Unpublished Doctoral Dissertation, Dalhousie University, Halifax, Nova Scotia.

Palmer, C.L. & Cragin, M.H. (2008). Scholarship and disciplinary practice. *Annual Review of Information Science and Technology, 42*(1), 163-212.

Pfaffenberger, B. (1988). Microcomputer applications in qualitative research. Newbury Park, CA: Sage.

Richards, L. (1998). Closeness to data: The changing goals of qualitative data handling. *Qualitative Health Research 8,* 319-328.

Seidel, J.V. (1998). Appendix E: Qualitative Data Analysis. Retrieved May 15, 2010, from http://www.qualisresearch.com.