The Qualitative Report

Volume 18 | Number 43 How To Article 3

10-28-2013

Experiencing Audio Recorded Research (EARR): Giving Voice to Qualitative Poster Presentations

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Recommended APA Citation

Chandler, R., Antsey, E. H., Munro, C. L., & Morrison-Beedy, D. (2013). Experiencing Audio Recorded Research (EARR): Giving Voice to Qualitative Poster Presentations. *The Qualitative Report*, *18*(43), 1-9. https://doi.org/10.46743/2160-3715/2013.1451

Experiencing Audio Recorded Research (EARR): Giving Voice to Qualitative Poster Presentations

Abstract

Qualitative research emphasizes and honors the words of participants in an effort to generate meaning and knowledge, yet participants' voices are rarely heard beyond data collection and analysis. We explore the potential to share participants' voices when disseminating research through audio - enhanced poster presentations. Technological advancements in multimedia could revolutionize poster presentations, especially for qualitative research. We describe the history of audio guides and how they can be applied to the dissemination of qualitative research. We also introduce the Experiencing Audio Recorded Research (EARR) Model to facilitate designing a multisensory approach to qualitative data dissemination through integrating audio technology into presentations.

Keywords

Qualitative Dissemination, Audio - Enhanced Presentations, Museum Informatics, EARR Model, Contextual Model of Learning

The Qualitative Report 2013 Volume 18, How To Article 3, 1-9
http://www.nova.edu/ssss/QR/QR18/chandler3.pdf

Experiencing Audio Recorded Research (EARR): Giving Voice to Qualitative Poster Presentations

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Qualitative research emphasizes and honors the words of participants in an effort to generate meaning and knowledge, yet participants' voices are rarely heard beyond data collection and analysis. We explore the potential to share participants' voices when disseminating research through audio-enhanced poster presentations. Technological advancements in multimedia could revolutionize poster presentations, especially for qualitative research. We describe the history of audio guides and how they can be applied to the dissemination of qualitative research. We also introduce the Experiencing Audio Recorded Research (EARR) Model to facilitate designing a multisensory approach to qualitative data dissemination through integrating audio technology into presentations. Keywords: Qualitative Dissemination, Audio-Enhanced Presentations, Museum Informatics, EARR Model, Contextual Model of Learning

Qualitative research is inherently about discovering meaning; researchers employ systematic, rigorous methodologies to deduce cumulative perspectives that people bring to particular topics. Many of the health care issues important to people are typically associated with their experiences, and are ideally suited to qualitative investigation. Participants' words, transcribed to text, are often the foundation of qualitative data analysis, and are also used in presentation of data. It is common for qualitative research presentations to include written quotes from participants; these direct transcriptions of participants' words are used to validate the analytic findings and to illustrate the depth of the data. However, participants' spoken meaning is expressed through elements of speech (e.g., inflection, intonation, pause, tone, speed, pitch) and context, which cannot always be fully conveyed by transcription into written forms of text, and ultimately, the meaning conveyed by the participant matters more than the choice of words (Markle, West, & Rich, 2011). In qualitative research dissemination, the ability of the audience to *hear* participants' speak their meaning has great potential for maintaining the integrity of qualitative research and honoring participants' voices.

Dissemination of Qualitative Research through Poster Presentations

Poster presentations have become a standard method of delivering research data at scientific conferences. Miller (2007) describes posters as "a hybrid form——more detailed than a speech but less than a paper, more interactive than either." A greater exchange of information and ideas can occur in a one-hour poster session with 100 posters than in several concurrent oral presentations. Though oral presentations are generally sought after as more prestigious opportunities, poster sessions have several advantages over oral presentations. For example, the poster session can facilitate networking by prompting dialogue between the presenter and individuals who are directly interested in his/her research. Poster evaluation tools like the Research Appraisal Tool (R-PAT-II) developed by Garrison and Bushy (2004) provide a systematic approach to objectively evaluating the quality of poster presentations. Effective posters visually display information in a way that draws in the viewer and facilitates

the sharing of knowledge with diverse conference participants. Not only are oral presentation skills important during a poster session, but also there is an art to creating a poster that requires practice and refinery (Briggs, 2009; Ellerbee, 2006; Keely, 2004; McCulloch, 2010; Russell, Gregory, & Gates, 1996; Zerwic, Grandfield, Kavanaugh, Berger, Graham, & Mershon, 2010). Despite the importance of sharing quotes in disseminating qualitative results, text-laden posters are discouraged because they are difficult for viewers to process.

To address limitations of the poster format, electronic posters (e-posters) have emerged at some scientific conferences, and have been received with mixed reviews (Bell, Buckley, Evans, & Lloyd-Jones, 2006; Shin, 2012). E-posters are generally projected onto a large screen and the presenter summarizes the main points, sometimes clicking on selected figures, tables, or text to enlarge them (Powell-Tuck, Leach, & Maccready, 2002; Rowe & Ilic, 2009b). Rowe and Ilic (2009a) describe a "MediaPoster" which is digitally projected onto a whiteboard or LCD screen, which allows for embedded links to additional information when selected by the viewer. This approach could include digital images, video, and audio, and extends the potential for poster sessions to become more interactive, improve learning, and increase networking opportunities.

The advantage of technology-enhanced posters for presenting quantitative data or clinical procedures is evident; however, the challenge of sharing the voices of participants from qualitative studies has yet to be explored in this format. Digital technology approaches to collecting (e.g., video, audio, photo) and analyzing (e.g., Computer-Assisted Qualitative Data Analysis Software such as NVivo, MaxQDA, and Atlas.ti) qualitative data are emerging (Markle, West, & Rich, 2011), but are rarely, if ever, extended to research dissemination through publications and presentations. Integration of audio into dissemination efforts maintains a level of transparency related to interpretation bias, improving the trustworthiness of the data, and potentially encouraging poster audiences to gain a deeper understanding of the meaning conveyed by research participants. Additionally, adding an audio component to the poster presentation enhances multi-modal input; this aligns with new knowledge about how people learn (Straumanis, 2011) and has potential for increasing audience engagement as well as understanding and retention of the poster's content.

Technological advancements have the potential to revolutionize the poster presentation, especially for qualitative research. One of the tenets of qualitative research is the emphasis and honoring of the participants' own words as generative of meaning and knowledge, yet it is rare to hear the actual voices of the research participants in presentations. There is power in listening to the voices of our research participants and sharing access to that power honors the spirit of qualitative research. While working on a qualitative study presentation we thought, "if only the viewers of this poster could hear these women speak, they could more deeply understand the significance of their words." This prompted an exploration of how that might be possible. We turned first to the experts in information sharing: Museums.

Museum Informatics

Historically, a small label that provided minimal, basic information identified museum objects. The use of digital multimedia technologies aimed at enhancing the museum visitor's experience began in the mid 1990s (Burton Jones, 2008). Today's modern museum includes a variety of interactive technologies that enhance the visitor's experience. The visitor may now touch or turn certain artifacts; navigate websites to plan their visit; learn from kiosks, audio guides, and other mobile and handheld devices; and experience virtual reality environments (Marty & Burton Jones, 2008).

Kiosks provide detailed labeling systems to present introductory or supplementary information, or to incorporate sound and photos into an exhibit. For example, a touch-screen kiosk could be used in an exhibition of musical instruments to provide more information about the instruments and offer visitors the opportunity to listen to the different sounds made by various instruments. Mobile computing and handheld devices are used in museums to provide guided tours with audio commentary, allowing visitors the flexibility to choose when they wish to listen to information, record their impressions of the exhibit, participate in surveys or polls, and even bookmark or email information to themselves for future reference (Economou, 2008). Audio tours have significantly increased the amount of information available for visitors, but in the context of the museum, the traditional use of this technology has perpetuated the idea of an authoritative expert who provides the narration on the subject. Newer, digital technology encourages dialogue, alternate interpretations, and community perspectives (Samis, 2008). Active learning and interactive experiences are being demanded by current generations who have come to rely on mobile phones, computers, tablets, and other technology. The use of technology to enhance the experience of attendees at research conferences is emerging; however, research into the direct impact on learning is in its infancy.

Contextual Model of Learning

The complexities of the learning processes that occur at professional and scientific meetings have not been well researched. Falk and Dierking (2000) introduced the Contextual Model of Learning as "a device for organizing the complexities of learning within free-choice settings." While this framework of learning has typically been applied to the museum setting, it has potential applicability to the professional context of the scientific meeting as well. According to Falk and Dierking (2008), "The view of learning embodied in this framework is that individuals can be conceptualized as being involved in a continuous contextually driven effort to make meaning in order to survive and prosper within the world, an effort that is best viewed as a never-ending dialogue between the individual and his or her physical and sociocultural environment" (p. 20). The continually changing environment that shapes the individual's learning process is defined by his or her personal, sociocultural, and physical contexts. It is important for us to note that the Contextual Model of Learning is not intended to make predictions, but rather to conceptualize the complex process of learning within these contexts. Part of the complexity stems from the influence of the interactions and relationships between the factors within the individual's personal, sociocultural, and physical contexts (rather than individual effects of each factor), on one's learning experience (Falk & Storksdieck, 2005). The 12 factors that comprise the three contexts in the model are presented in Figure 1.

The personal context is characterized by the interest level of the individual, his or her prior experiences, and his or her motivation to participate in the experience of learning. At a scientific conference, attendees generally choose to visit sessions that are related to their own research interests; therefore, meaning-making may be influenced by prior experiences and an individual's motivation to learn more about the selected topic. Scientific conferences are socioculturally situated in a context that values learning and collaboration. The value placed on learning by those within the conference context, as well as the value placed on learning by a society that values science in general, influences the meaning-making experience of the conference attendees. People are influenced by interactions with others in their own professional and social circles. Various physical aspects such as large- and small-scale space and design features of the conference environment and sessions can facilitate or hinder navigation and learning throughout the conference. If an oral or poster session is too

crowded, has poor lighting, and is uncomfortably hot or cold, conference attendees may leave before they have met their intended learning goals. Alternately, a comfortable physical environment, attention to design detail, and thoughtful use of technology can enhance the attendee's experience. The design aspects of the presentation (oral and poster) itself also influence the participants' ability to learn. When applied to the context of the scientific conference environment, the last factor, "subsequent reinforcing events and experiences outside the museum," would be evidenced by the facilitation of networking and acquisition of knowledge and meaning-making after the conference.

Figure 1: The 12 Factors of the Contextual Model of Learning

Personal Context:

1. Visit motivation and expectations,
2. Prior knowledge and experience
3. Prior interests
4. Choice and control

Sociocultural context

5. Cultural background
6. Within group social mediation
7. Mediation by others outside the immediate social group

Physical context

8. Advance organizers
9. Orientations to physical space
10. Architecture and macroscale environmental factors
11. Design of exhibitions, programs, and technology
12. Subsequent reinforcing events and experiences outside the museum

(Falk & Dierking, 2008; p. 24)

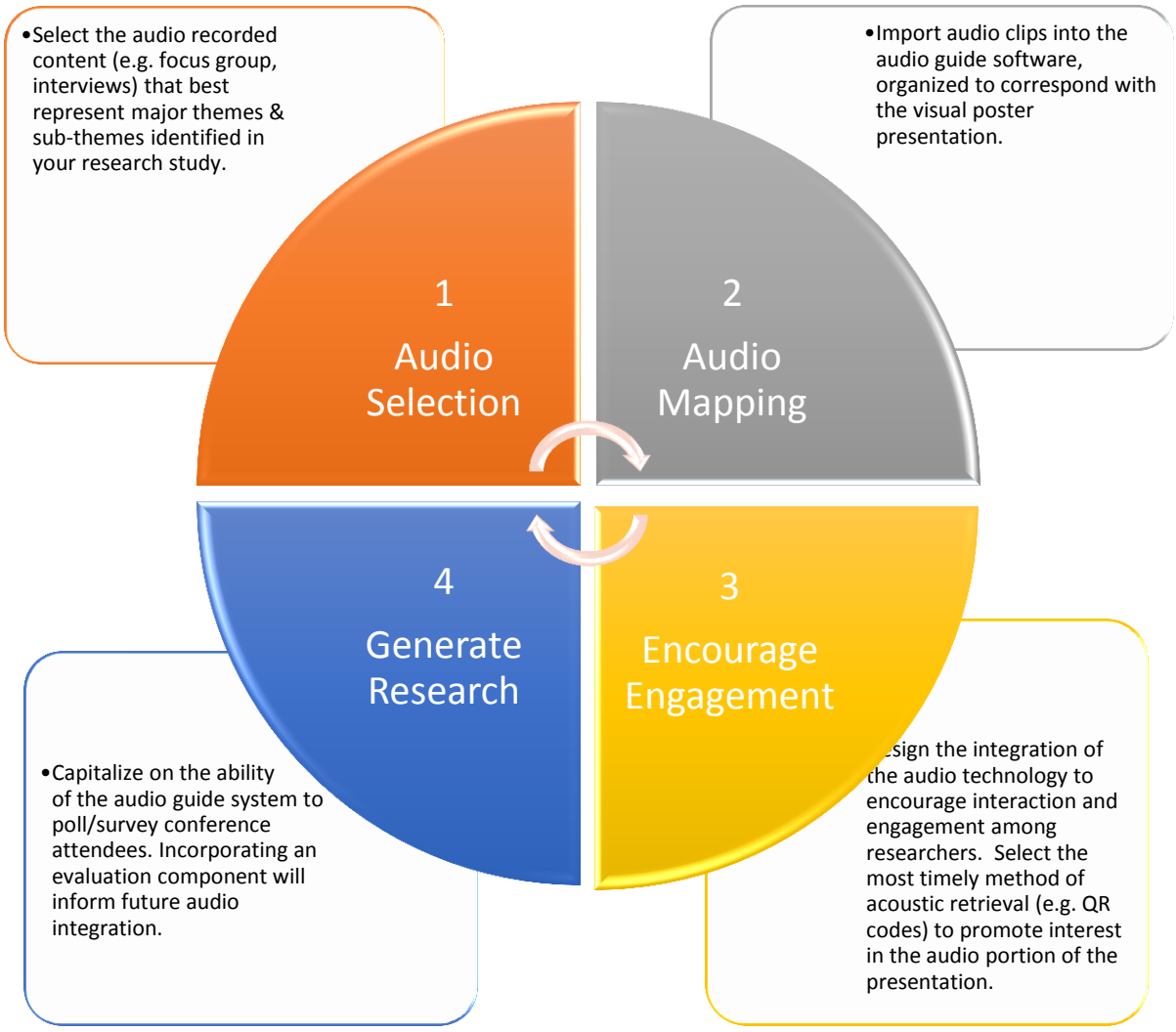
Qualitative Poster Presentations 2.0

Like museum curators, researchers in the science and health professions, such as nursing, public health, and medicine are information providers and knowledge specialists who strive to effectively communicate the results and implications of their work to others in an effort to move the science forward. We have conceptualized a qualitative poster presentation that incorporates rich multimedia, specifically audio, technology to advance dissemination efforts and enhance the learning experience in knowledge-sharing environments. Audio clips reveal voice inflection and tone, and imply emotion that is often difficult to communicate through the traditional poster. Incorporating an audio component into qualitative research posters has the potential to immerse conference attendees more fully into the data, offering the opportunity to experience a connectedness to the participants' stories and generate their own interpretations about the words of the participants.

The Experiencing Audio Recorded Research Model [EARR Model]

We have developed the Experiencing Audio Recorded Research Model [EARR Model] (see Figure 2), which aims to guide researchers through the process of integrating audio into qualitative poster presentations. This four-step approach is as follows:

Figure 2. Experiencing Audio Recorded Research Model [EARR Model]



Step 1: Audio Selection. After analyzing the qualitative data, decide what audio content would best represent the study themes/subthemes. Audio clips for poster presentations will need to be short in duration to comply with the time constraints designated for poster presentation sessions, so it is important that the audio clips selected are impactful and will truly enhance the poster content.

Step 2: Audio Mapping. Use software (e.g., Audacity) to isolate no more than 1 minute of sound per clip and then publish the clips. There are many options available, such as audio guide software (e.g., Guide-By-Cell, Acoustiguide, Audioconexus), or the clips could be published to a hosting provider like a university or the "cloud" (e.g., Google Drive, Microsoft SkyDrive).

Step 3: Encourage Engagement. Determine the best method of engaging conference attendees, who are typically other scientists/academics, with the research presentation. There are many methods available to present the audio clips. Using a mobile phone to dial in will

accommodate the broadest audience, whereas using mobile applications such as scanning Quick Response (QR) codes or typing Uniform Resource Locators (URLs) into an Internet browser might provide a higher quality user experience depending on the audience. Furthermore, future technologies that could enhance the presentation experience should be continually evaluated as the EARR Model evolves. The use of audio technology should be well-rehearsed and tested before the actual presentation.

Step 4: Generate Research. Most audio guide services have a feature, which allows for the capability to poll users and allow them to leave verbal feedback. Researchers can develop questions to evaluate the effectiveness of using audio guide technology for qualitative data dissemination. Similarly, use of other mobile applications can further enhance this experience by providing links to surveys or polls (e.g., SurveyMonkey), to supplemental data files (e.g., survey instruments, additional audio, a Portable Document Format (PDF) of the poster, reference lists), to researcher contact information, and to social networking sites (e.g., Facebook, Twitter, LinkedIn). This technology introduces the potential to augment networking opportunities if researchers and attendees are able to easily and quickly exchange contact information and/or connect through social networking sites.

We piloted the audio guide technology using music clips from a research study (not sound clips from research participants) at a small, local conference. We perceived a general sense of excitement about the potential for this technology to enhance dissemination efforts and conference attendees gave positive verbal feedback. One young researcher commented that this technology is appropriate and relatable for her generation and that it inspires new ways of thinking about how to disseminate research. At a national nursing conference, we employed the EARR Model with sound clips of research participants from a focus group study. Conference attendees who were engaged with the poster praised the novelty of this concept and requested instructions on the EARR model process to apply this technology to their research dissemination efforts. We also provided the option to answer several yes/no questions about the use of the technology and leave verbal feedback. One person commented, "I thought this technology was very cool and I think it definitely enhanced my experience with the data."

Ethical Considerations

There are ethical considerations when sharing audio with an audience. Depending on the study, maintaining participant confidentiality is imperative; researchers must consider the target audience and whether there is potential for a breach of confidentiality should anybody's voice be recognizable. Researchers should consult with their Institutional Review Boards (IRB) and use discretion to determine appropriate audiences when sharing audio. Informed consent documents should include information about the intention to disseminate audio content from the qualitative data. Our IRB approved the following: "Only the PI, study coordinator, research assistant, and professional transcription company will be privy to the complete digital recordings. Digitally recorded sound clips (up to 90 seconds per clip) or excerpts from the transcribed focus group conversations may be used in dissemination efforts like, but not limited to conference presentations/manuscripts. These will not contain any identifiable information."

Researchers who use feedback or evaluation components of the technology may need additional protections for conference attendees who choose to participate in the feedback or evaluation process. For example, we applied for and received IRB approval to evaluate the

audio technology, which consisted of a brief poll and an option to leave comments. The level of risk in answering a poll with this technology may be minimal if participants are not asked to provide any personally identifying information; however, an informed consent document clarifying a waiver of signed consent may still be required by the IRB.

Limitations of using Audio Guide System Technology

The cost of using audio guide technology can be expensive because the target consumer has traditionally been museums or other types of tours such as real estate; however, with more use in scientific settings we anticipate that prices will become more affordable and technology will become more accessible. Sound quality, volume levels, and user-friendliness may also present problems. In our pilot we were reminded that poster sessions are loud and have subsequently incorporated a set of noise-cancelling headphones (over-the-ear) to allow attendees to listen to the audio effectively. Presenters must be familiar with how to operate the audio guide equipment and have a plan to troubleshoot problems. While using audio guide technology provides assistance and support for creating the multimedia, there are other options, like the "cloud," that will provide similar results, albeit at a lower cost with less or no assistance or support. There is currently no perfect, affordable solution and individual presenters must weigh the options against available resources.

Conclusion

The EARR Model facilitates a multisensory approach to qualitative data dissemination while honoring the subjectivity of the participants. The ability to hear participants' voices adds authenticity to the presentation, augments the experience and interpretation of the viewer/listener of the presentation, and enhances the fluidity and engagement of the learning environment. The Conceptual Model of Learning provides a framework for the application of the EARR Model to enhance the scientific conference experience; we seek to hone the physical context by integrating audio into qualitative poster presentations. Although the focus of this manuscript is on qualitative poster presentations, we would be remiss to exclude the potential for audio to be included in journal articles. As part of the continued transition to digital media, online journal articles could contain links to audio clips, improving the trustworthiness of the data and ultimately preserving the voices of participants for readers over time.

We hope researchers will employ the EARR Model and experiment with audio technology. The ability for attendees to leave feedback about the technology and the research has the potential to refine the use of audio guides in poster presentations, generate additional research, advance the science, and encourage networking. Future research could explore the ways learning is enhanced through multisensory dissemination of research.

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Declaration of Conflicting Interests: The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding Acknowledgment: This work was supported by the University of South Florida College of Nursing, Faculty Research Pilot Projects Program.

Article Citation

Chandler, R., Anstey, E. H., Munro, C. L., & Morrison-Beedy, D. (2013). Experiencing audio recorded research (EARR): Giving voice to qualitative poster presentations. *The Qualitative Report, 18*(How To 3), 1-9. Retrieved from http://www.nova.edu/ssss/QR/QR18/chandler3.pdf