PERSPECTIVES ON SOFTWARE-ASSISTED QUALITATIVE DATA ANALYSIS: A systematic literature review

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INTRODUCTION

New technologies initiate new practices and modes of being. ~ McLuhan (See Goble et al., 2012.)
Through our use of technology we can become functions of it. ~ Heidegger (See Goble et al., 2012.)

• an increasing number of qualitative researchers have begun using CAQDAS
  • first search produced over 18,437 references to ATLAS.ti!
• several practical as well as methodological questions remain unsettled (and somewhat problematic)
THE AIM OF THE STUDY

• to review previous research literature on software-assisted qualitative data analysis
• to identify current research trends and approaches on the topic, as well as find out gaps yet to be covered

METHODOLOGY & DATA COLLECTION

• a systematic literature review (e.g., Jesson et al., 2011)
• multidisciplinary databases
  • EBSCOhost, Primo Central Index, ProQuest, PubMed, ScienceDirect, SCOPUS (Elsevier), SpringerLink, Web of Sciences, and Wiley Online Library
• various keywords
  • e.g., ATLAS.ti, CAQDAS, and QDA software
• “snowball method” as a complementary method
  • e.g., reference lists, particular thematic issues in journals (Forum: Qualitative Social Research etc.)
METHODOLOGY & DATA COLLECTION

• selection criteria
  • scientific articles in peer-reviewed journals concentrating on the usage of CAQDAS as such
  • if CAQDAS were only mentioned to be utilized in the analysis but were NOT being reflected on or discussed in detailed fashion, the articles were left out, as well as book chapters and book reviews

• search results – work in progress...
  • first phase (number includes some duplicates): \( N = 249 \)
  • second phase (following selection criteria): \( N = 30 \)
  • third phase (only 2005–2015 included): \( N = 22 \)
  • fourth phase (to be continued...): \( N = ? \)

DATA ANALYSIS

• from a data-driven perspective using thematic analysis, utilizing the ATLAS.ti

  • initial topics of interest guiding the analysis:
    • ways of utilizing CAQDAS
    • main benefits and limitations of the usage of CAQDAS
    • methodological questions
    • differences and similarities between various CAQDAS available
    • research trends and gaps
A FIRST LOOK AT LITERATURE

CAQDAS & qualitative research tradition in general

- general role of CAQDAS in analysis process?
  - a tool assisting the analysis – or ruining it?
  - a mere tool – or something more?
    - “complex virtual environment for embodied and practice-based knowledge making” (Konopásek, 2008)
    - affecting research, researchers, and conceptions of research (Goble et al., 2012)
  - fears and high hopes?
    - “Relevant text search” ~ “Do you believe in magic?” (ATLAS.ti v. 4)
    - saves time ~ takes time (e.g., MacMillan, 2005; Paulus & Bennett, 2015)
    - empowers researchers ~ takes over researchers (e.g., MacMillan, 2005; Paulus & Lester, 2015)
    - distances researchers from the data ~ immerses too close to the data (e.g., Kaefer et al., 2015)
    - increases the quality of the analysis ~ is used to legitimate qualitative analysis in the eyes of (quantitatively oriented) academic public (e.g., Rodik & Primorac, 2015)
CAQDAS & specific methodological questions

• suitability for various research traditions? e.g.
  • conversation analysis and discourse analysis (e.g., MacMillan, 2005; Paulus & Lester, 2015)
  • phenomenological research (e.g., Goble et al., 2012)
  • qualitative content analysis (e.g., Kaefer et al., 2015)
  • grounded theory methodology (e.g., Konopásek, 2008)
  • rhetorical analysis (e.g., Rossolatos, 2014)
  • quantitative narrative analysis (e.g., Franzosi et al., 2013)

• reflections on various steps in qualitative analysis
  • transcription (e.g., Evers 2011)
  • analysis (e.g., "Mustard seed searches", Dempster et al., 2013; "Computer-assisted NCT analysis", Friese, 2011)

CAQDAS & their usage in practice

• ways of utilizing CAQDAS
  • e.g., “storing things”, “tool for analysis”, “more than just coding”, “making thinking visible”, “device for thinking”, “creating connections”, “speeding things up”, “supporting the researcher”

• (perceived) main benefits and limitations of the usage of CAQDAS
  • e.g., technical, practical, and methodological
  • e.g., related to specific methodology, data type, software package, or version of the software package

• suitability for various data types and research designs
  • e.g., text, images, audio and video materials, websites and social media, big data, mixed methods approach, longitudinal qualitative studies, comparative studies
### CAQDAS & being a researcher

- “The greater the methodological expertise and confidence in using a certain methodology in the context of software, the lesser is the influence of software.” (Friese, 2011)
- “Analysis will always be bound by the researcher’s abilities; while computer programs may enhance those abilities, they will never replace them.” (Goble et al., 2012, see also Evers et al., 2011)
- researcher’s professional growth, methodological understanding, and scientific competence
  - understanding how CAQDAS is connected to research practices and outcomes → “reflexive moments” (Woods et al., 2015)
  - “new habits of mind and the split-mind effect” (Goble et al., 2012)

### CAQDAS & research community

- technology acceptance and adoption in research community
- attitudes and “user examples” of senior researchers, socialization to the common research practices
  - those in power can play a key role in supporting or limiting diffusions of innovations (e.g., Paulus & Bennett, 2015)
- there are several options – how and why a specific software package is chosen? (e.g., Rodik & Primorac, 2015)
CAQDAS & pedagogical approaches

- learning to use CAQDAS – as well as attitudes and ways of utilizing software (e.g., Rodik & Primorac, 2015)
- best practices of teaching CAQDAS (e.g., Paulus & Bennett, 2015)
- integrating CAQDAS into a graduate research methods course (Paulus & Bennett, 2015)
- sharing user experiences in courses, work communities, congresses, and (scientific) journals
  - best practices ~ not so good practices
- CAQDAS can promote new innovative research designs and novel ways of analyzing qualitative data!

LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

- finding a relevant focus to conduct a review?
  - a vast amount of literature, appropriate keywords and databases
- research gaps, e.g.
  - CAQDAS in connection to thinking and doing research?  
    (see also, Goble et al., 2012)
  - (informal) learning and (formal) teaching of CAQDAS?  
    (see also, Paulus & Bennett, 2015)
  - competences needed in the usage and adoption of CAQDAS?
  - focusing on research communities instead of individual researchers
  - from single user experiences and particular case studies ("how we did it!") to more theoretical understanding of CAQDAS and to collecting broader empirical data
REFERENCES * 1 (2)


REFERENCES * 2 (2)