

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.*” (Fries, 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

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