

4-17-2019

A Call for Enhancing Saturation at the Qualitative Data Analysis Stage via the Use of Multiple Qualitative Data Analysis Approaches

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Recommended APA Citation

Sechelski, A. N., & Onwuegbuzie, A. J. (2019). A Call for Enhancing Saturation at the Qualitative Data Analysis Stage via the Use of Multiple Qualitative Data Analysis Approaches. *The Qualitative Report*, 24(4), 795-821. <https://doi.org/10.46743/2160-3715/2019.3554>

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Abstract

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Keywords

Qualitative Data Analysis, Qualitative Analysis, Multiple Qualitative Data Analysis Approaches, Saturation, Analysis Saturation

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A Call for Enhancing Saturation at the Qualitative Data Analysis Stage via the Use of Multiple Qualitative Data Analysis Approaches

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The analysis of data represents the most important and difficult step in the qualitative research process. Thus, recently, a few authors have written methodological works that contain discussion of an array of qualitative data analysis approaches. Yet, despite the call of Leech and Onwuegbuzie (2007) a decade ago for qualitative researchers to analyze a given set of qualitative data in multiple ways, this practice has been largely ignored. Thus, in this article, we bolster the argument for conducting multiple data analyses. In particular, we use data stemming from an interview to demonstrate how using five qualitative data analysis approaches (e.g., constant comparison analysis, discourse analysis) helped to enhance what we refer to as analysis saturation, thereby increasing verstehen (i.e., understanding). Keywords: Qualitative Data Analysis, Qualitative Analysis, Multiple Qualitative Data Analysis Approaches, Saturation, Analysis Saturation

As *methodological* thought pertaining to qualitative inquiry has emerged and matured over the centuries in general and since the 19th century in particular, so too have *methods*, which denote specific strategies and procedures for research design, sampling, data collection, analysis, and so forth. For the most part, this period has seen the conceptualization and use of an array of qualitative analytical approaches. Interestingly, Leech and Onwuegbuzie (2008) identified 23 qualitative data analysis techniques (see Table 1). Building on their work, Onwuegbuzie and Denham (2014) identified 34 formal qualitative data analysis approaches, starting from word count (323 B.C.E. [Hellenic Period]; cf. Carley, 1993) through nonverbal communication analysis (cf. Onwuegbuzie, 2017). By qualitative data analysis *approach*, we are referring to qualitative data analyses that represent whole systems of analysis that either originated from or are linked to specific research designs, such as constant comparison analysis (Glaser, 1965) that is associated with grounded theory (Glaser & Strauss, 1967); and domain analysis, taxonomic analysis, componential analysis, and theme analysis that stemmed from ethnographic research (Spradley, 1979).

Table 1 *Most Common Qualitative Analysis*

Type of Analysis	Short Description of Analysis
Constant Comparison Analysis	Systematically reducing data to codes, then developing themes from the codes.
Classical content analysis	Counting the number of codes.
Word count	Counting the total number of words used or the number of times a particular word is used.

Keywords-in-context	Identifying keywords and utilizing the surrounding words to understand the underlying meaning of the keyword.
Domain analysis	Utilizing the relationships between symbols and referents to identify domains.
Taxonomic analysis	Creating a system of classification that inventories the domains into a flowchart or diagram to help the researcher understand the relationships among the domains.
Componential analysis	Using matrices and/or tables to discover the differences among the subcomponents of domains.
Conversation analysis	Utilizing the behavior of speakers to describe people's methods for producing orderly social interaction.
Discourse analysis	Selecting representative or unique segments of language use, such as several lines of an interview transcript, and then examining the selected lines in detail for rhetorical organization, variability, accountability, and positioning.
Secondary data analysis	Analyzing non-naturalistic data or artifacts that were derived from previous studies.
Membership categorization analysis	Utilizing the role that interpretations play in making descriptions and the consequences of selecting a particular category (e.g., baby, sister, brother, mother, father = family).
Semiotics	Using talk and text as systems of signs under the assumption that no meaning can be attached to a single term.
Manifest content analysis	Describing observed (i.e., manifest) aspects of communication via objective, systematic, and empirical means (Berelson, 1952).
Latent content analysis	Uncovering underlying meaning of text.
Qualitative comparative analysis	Systematically analyzing similarities and differences across cases, typically being used as a theory-building approach, allowing the analyst to make connections among previously built categories, as well as to test and to develop the categories further.
Narrative analysis	Considering the potential of stories to give meaning to individual's lives, and treating data as stories, enabling researchers to take account of research participants' own evaluations.
Text mining	Analyzing naturally occurring text in order to discover and capture semantic information.
Micro-interlocutor analysis	Analyzing information stemming from one or more focus groups about which participant(s) responds to each question, the order that each participant responds, the characteristics of the response, the nonverbal communication used, and the like.
Framework analysis	Analyzing inductively to provide systematic and visible stages to the analysis process, allowing for the inclusion of a priori as well as a posteriori concepts, and

	comprising the following five key stages: (a) familiarizing, (b) identifying a thematic framework, (c) indexing, (d) charting, and (e) mapping and interpreting.
Grounded visualization	Examining spatially a combination of referenced data and ethnographic data, in close relationship to each other, and integrating geographic information systems-based cartographic representations with qualitative forms of analysis and evidence, thereby yielding an inductive and critically reflexive scale-sensitive analysis that combines grounded theory and visualization.
Interpretative phenomenological analysis	Analyzing in detail how one or more persons, in a given context, make sense of a given phenomenon—often representing experiences of personal significance (e.g., major life event).
Schema analysis	Searching for cultural schemata (i.e., scripts) in texts, which include identifying semantic relationships between elements of component schemas.
Ethnographic decision models	Building a model of the decision process for a behavior of interest, resulting in a display of data, via decision trees, decision tables, or sets of rules that take the form of <i>if-then</i> statements.

Adapted from “Qualitative data analysis: A compendium of techniques and a framework for selection for school psychology research and beyond,” by N. L. Leech and A. J. Onwuegbuzie, 2008, *School Psychology Quarterly*, 23, p. 601. Copyright 2008 by American Psychological Association.

The analysis of qualitative data arguably represents one of the most difficult steps—if not the most difficult step—of the qualitative research process because, as surmised by Denzin and Lincoln (2000), it encompasses “a complex process involving highly technical languages and systems of discourse” (p. 637), being characterized by a “systematic search for meaning” (Hatch, 2002, p. 148) and the quest for *verstehen* (i.e., understanding; Dilthey, 1961; Martin, 2000; Outhwaite, 1975). Thus, it is essential that qualitative researchers are aware that they have an array of analytical approaches from which to choose in any given qualitative research study. However, disturbingly, it appears that the vast majority of qualitative researchers are cognizant of only a few qualitative data analysis approaches. Indeed, Leech (2004) documented that more than 80% of school of education faculty at a large university cited constant comparison analysis (Glaser, 1965) as being the only approach of which they were aware.

The lack of knowledge of numerous qualitative data analysis approaches likely stems from two major sources. First, many instructors of qualitative research courses do not appear to disseminate information about an array of qualitative data analysis approaches (Leech & Onwuegbuzie, 2007). Second, as observed by Leech and Onwuegbuzie (2007), the most popularized qualitative research textbooks contain at most only one chapter on data analysis. For example, in the latest (i.e., fifth) edition of the *Sage Handbook of Qualitative Research* (Denzin & Lincoln, 2017), one of the leading textbooks used in qualitative research courses in the United States, of the 42 chapters it contains, only one chapter deals explicitly with qualitative data analysis approaches (i.e., Chapter 30). Further, with few exceptions (e.g., Bernard, Wutich, & Ryan, 2017; Spradley, 1979), the textbooks that focus on qualitative data analysis approaches emphasize one data analysis approach (e.g., discourse analysis; Gee, 2014). For example, despite the fact that, as noted by Potter (2004), there are *multiple* types of discourse analysis (e.g., linguistics, cognitive psychology, classroom interaction,

poststructuralism and literary theory: continental discourse analysis; meta-theoretical emphasis on anti-realism and constructionism), Gee's (2014) textbook—although an outstanding textbook—does not outline *multiple* discourse analysis approaches but just focuses on one discourse analysis approach that is centered on seven building tasks of language (i.e., significance, activities, identities, relationships, politics, connections, and sign systems and knowledge).

Thus, what is needed are more works that demonstrate the diversity and flexibility of qualitative data analysis approaches in an attempt to promote a more comprehensive and rigorous analysis by examining the same data from multiple analytical perspectives. Moreover, despite the call of Leech and Onwuegbuzie (2007) a decade ago for qualitative researchers to analyze a given set of qualitative data in multiple ways, this practice has been largely ignored. Yet, it appears appropriate for a qualitative researcher to conduct multiple qualitative data analyses for “grand tour” (i.e., central) research questions (Creswell & Poth, 2018, p. 141) that are very broad, especially when these research questions address *wicked problems*, which refer to “problems involving multiple interacting systems, replete with social and institutional uncertainties, for which there is no certainty about their nature and solutions, and for which time is running out to find solutions” (Mertens et al., 2016, p. 225). As noted by Mertens et al. (2016), “additional concepts related to researching wicked problems include the need for researchers to address power inequities, violations of human rights and impediments to social justice, and strategizing for action in the form of policies and behaviors” (p. 225). It has even more intuitive appeal to conduct multiple analyses for qualitative inquiries that address a series of specific sub-questions, such as issue sub-questions that address the major concerns and complexities to be understood (e.g., “What does it mean to qualitative researchers to conduct multiple data analyses?”) and topical sub-questions that elicit information that is needed to describe the case (e.g., “What do nurses do?”). For example, in a large case study of select U.K. citizens' perceptions of the *Brexit* (i.e., a portmanteau word that combines *British* and *exit*, which represents the potential withdrawal of the U.K. from the European Union)—clearly a wicked problem—*constant comparison analysis* may be used systematically to reduce focus group interview data to codes and, subsequently to extract themes from these codes; *qualitative comparative analysis* may be used systematically to analyze similarities and differences across the participants of the themes that emerged from the constant comparison analysis; and discourse analysis could be used to examine how each participant employs language to construct his or her reality on the context of Brexit. Support for our contention of the utility of conducting multiple qualitative analyses is the fact that, as presented earlier, Spradley's (1979) ethnographic analysis comprises the following four qualitative data analysis approaches: domain analysis, taxonomic analysis, componential analysis, and theme analysis.

At this point, we would like to acknowledge the work of Wertz et al. (2011). Most notably, these authors provide a comparison of five major qualitative data analysis approaches (i.e., phenomenological psychology, constructivist grounded theory, discourse analysis, narrative research, and intuitive). Using narrative data and interview data from “Teresa,” a young opera singer who underwent a career-changing illness, Wertz et al. (2011) illustrate how to analyze these data using the five data analysis approaches and then probe the similarities and differences among these approaches—including their distinctive purposes and strengths, the positionality of the analyst, and their inherent scientific and ethical complexities. In addition, these authors present Teresa's responses to each analysis of her experience. Finally, Wertz et al. provide a narrative account from another research participant, “Gail,” that readers can use to practice these five qualitative data analysis approaches. We applaud these authors for such an innovative book. Indeed, more works of this nature are needed.

To this end, in this article, we bolster the argument for conducting multiple data analyses. In particular, we use data stemming from an interview to demonstrate how using five

qualitative data analysis approaches helped to enhance what we refer to as *analysis saturation*, thereby increasing *verstehen*. We define analysis saturation as occurring when the researcher can assume that her/his emergent theory is adequately developed to fit findings stemming from any future data analysis of the same data.

This article involved the collaboration of the following two co-authors: Anthony J. (Tony) Onwuegbuzie and Amber N. Sechelski (lead author). Tony Onwuegbuzie is a Professor in the Department of Educational Leadership at Sam Houston State University, where he teaches doctoral-level courses in qualitative research, quantitative research, and mixed research, including program evaluation. Further, he is a Distinguished Visiting Professor at the University of Johannesburg and Honorary Professor at the University of South Africa. Over the last 15 years, he has delivered more than 200 workshops on qualitative data analysis, in whole or in part (i.e., as part of a mixed methods research workshop) across six continents, including a workshop at the American Educational Research Association (AERA) conference. From the moment that he started teaching qualitative research courses in 2003 at the University of South Florida, he, alongside Dr. Nancy Leech (University of Denver, Colorado), at the time, a brand new faculty member (who, like Tony, had earned a methodological Ph.D., and had been trained to teach both qualitative and quantitative research), whom he had met randomly the year before at an AERA conference while she was a doctoral candidate, came to the realization that there was scant practical information on how to conduct multiple qualitative data analysis approaches. Moreover, they soon came to the conclusion that conducting multiple qualitative data analyses often increases the possibility of reaching *verstehen* compared to when conducting a single analysis. As a result, and spurred on by the Outstanding Paper Award that they had received for their first co-authored methodological paper that they presented at a subsequent AERA conference, Tony and Nancy decided to co-design their respective qualitative research courses around the notion of instilling in their students the importance of conducting multiple qualitative data analyses. As the years went by, Tony and Nancy continued developing their qualitative research courses under this ethos and, once fully developed, they decided to make their pedagogy public by co-authoring with doctoral students enrolled in Tony's qualitative research course an article that provided a detailed summary as to how Tony and Nancy taught their qualitative research courses (Onwuegbuzie et al., 2012). In this article, which was published in *The Qualitative Report*, the authors discuss the four major phases of the qualitative research course: (a) *Conceptual/Theoretical Phase* (i.e., wherein the instructors present an overview of the qualitative research process); (b) *Technical Phase* (i.e., wherein the instructors describe 18 qualitative analysis techniques from different traditions and different epistemologies, delineating when to use each type of analysis and how to conduct each of these analyses using computer-assisted qualitative data analysis software [CAQDAS]); (c) *Applied Phase* (i.e., wherein the instructors teach students how to collect, to analyze, and to interpret qualitative data, and how to write up qualitative research via a series of what the instructors call *qualitative notebooks*, in which students use CAQDAS to facilitate the analysis of data that they had collected during the course using several qualitative analytic techniques); and (d) *Emergent Scholar Phase* (i.e., wherein after the course ends, students are expected to present their qualitative inquiries at professional meetings and, hopefully, to author/co-author manuscripts that they submit to journals to be reviewed for possible publication [as the lead author of this manuscript has accomplished]); also, students who have previously taken this course are encouraged to team-teach future qualitative research courses with their professors.

During this period of teaching multiple-analysis-based qualitative research courses, Nancy and Tony co-wrote a trilogy of articles on qualitative data analysis that were published in *School Psychology Quarterly* (Leech & Onwuegbuzie, 2007, 2008, 2011). Also, they co-wrote an article that was published in *The Qualitative Report* on how to conduct multiple qualitative analyses on information extracted from literature reviews (Onwuegbuzie, Leech, &

Collins, 2012). Their *School Psychology Quarterly* articles led to them being invited to deliver a qualitative data analysis webinar in 2011 on behalf of Drs. Tom Richards and Lyn Richards, developers of QSR International, a computer-assisted qualitative data analysis software company based in Melbourne, Australia, with offices in the United Kingdom and the United States. This webinar, which was delivered worldwide, was entitled, “Looking at Your Data Through Multiple Lenses.”

Shortly after this webinar, Tony and his former doctoral student, Dr. Rebecca Weinbaum (Associate Dean of the College of Education and Human Development at Lamar University), introduced a research philosophy that they referred to as *critical dialectical pluralism* (Onwuegbuzie & Frels, 2013), which is based on the assumption that social injustices prevail at all levels of society. The broad goal of critical dialectical pluralists is to conduct research studies that advance and sustain egalitarian societies, to promote both universalistic theoretical knowledge and local practical knowledge, and to conduct inquiries that are culturally progressive. In particular, critical dialectical pluralist researchers avoid conducting research that promotes any kind of cultural deficit model. Rather, they incorporate the social and cultural capital that is present among marginalized, under-represented, and oppressed individuals and groups, such as their resiliency, often leading to resiliency-based research. According to Tony and Rebecca:

At its most basic level, critical dialectical pluralism takes a pluralist ontological stance (hence the word pluralism) and operates under the assumption that there are multiple important kinds of reality that include subjective, objective, and intersubjective realities. Critical dialectical pluralism relies on the dialectical, dialogical, and hermeneutical approach to understanding phenomena (hence the word *dialectical*). (p. 16) [emphasis in original]

As can be seen from this statement, the critical dialectical pluralist stance aligns itself extremely well with the concept of conducting multiple qualitative data analysis approaches. However, from Tony’s point of view, what remained was to provide evidence of the utility and effectiveness of conducting multiple qualitative data analysis approaches. Enter Amber N. Sechelski, the lead author of the current article and a doctoral candidate in the Higher Education Leadership Program at Sam Houston State University.

In 2016, Amber was enrolled in Tony’s qualitative research course as part of her cohort. During the course, she found that the notion of conducting multiple qualitative data analysis approaches had intuitive appeal. Moreover, because Amber realized the ways in which conducting multiple qualitative analyses with the same data enhanced her understanding of the participant’s perspective, she welcomed the opportunity to contribute to scholarly efforts that promote researchers’ awareness and use of multiple qualitative data analysis approaches. And after she submitted a qualitative notebook that was the best that Tony had received to date, Tony seized this opportunity to use some of her work to showcase the utility and effectiveness of conducting multiple qualitative data analysis approaches. And after co-presenting—with Amber as lead presenter—a paper on this topic at the AERA conference in 2017 that was extremely well received, we decided to increase the audience for our ideas by publishing our paper in a respected, high-quality qualitative research journal—as we have been extremely fortunate to have accomplished.

Heuristic Example

This instrumental case study was designed to enhance our general understanding of a topic (Stake, 2005)—a doctoral student’s experiences with mentoring. The study involved one

participant, who will subsequently be referred to by the pseudonym Taylor. Taylor, who was selected via convenience sampling (i.e., selecting one or more settings, groups, and/or individuals that are conveniently available and willing to participate in the study; Miles & Huberman, 1994; Onwuegbuzie & Collins, 2007), was a doctoral student enrolled in the Educational Leadership program of a public 4-year institution.

The lead author used a social constructionist lens. This lens involves attaining understanding through reconstructions and vicarious experiences of people or groups, under the belief that (social) meaning making occurs not independently within the individual, but in conjunction with other people—that is, via co-construction among people (Berger & Luckmann, 1966). The lead author interviewed Taylor via a semi-structured, face-to-face interview. The interview schedule consisted of the following six open-ended questions: (a) What is your understanding of the word mentor?, (b) How important is mentoring to you and why?, (c) What are/were your expectations of a mentor during your first year as a doctoral student?, (d) What are your positive and negative mentoring experiences as a first-year doctoral student so far?, (e) How do you think mentoring can prepare a first-year doctoral student to persist to graduation?, and (f) What are some characteristics of a great mentor that you have experienced as a first-year doctoral student? Because Taylor and the lead author were both doctoral students, the lead author took an emic perspective in her role as a complete-member-researcher (Adler & Adler, 1987). As noted by Currall and Towler (2003), “emic refers to how those data are interpreted by an ‘insider’ to the system or organization” (p. 522). In other words, an emic viewpoint is the viewpoint of the group member, the insider. To expand her perspective and to minimize the bias produced by her own experiences as a doctoral student, the lead author employed the techniques of both member-checking (Manning, 1997) and debriefing the researcher (Onwuegbuzie, Leech, & Collins, 2008). Member checking involves giving the transcript of the interview to the interviewee to review for accuracy, adequacy, and, above all, authenticity (Manning, 1997), whereas debriefing the researcher involves the interviewer being interviewed formally by a peer debriefer at one or more phases of the study (Chenail, 2011; Onwuegbuzie et al., 2008). In the current study, the debriefing occurred one time, 1 week prior to the interview data being analyzed.

Data Analysis Approaches

By being cognizant of multiple qualitative data analysis approaches, the interpretive researcher will be in a position to analyze a given set of data in multiple ways. Indeed, using the typology of Greene, Caracelli, and Graham (1989), as illustrated in Figure 1, for any given data, the use of one or more additional qualitative data analysis approaches would give the researcher scope for *triangulation* (i.e., compare findings from one qualitative data analysis approach with the results from one or more other qualitative data analysis approaches), *complementarity* (i.e., seek elaboration, illustration, enhancement, and clarification of the findings from one qualitative data analysis approach with results from one or more other qualitative data analysis approaches), *initiation* (i.e., discover paradoxes and contradictions that emerge when findings from two or more qualitative data analysis approaches are compared that might lead to additional meaning making), *development* (i.e., use the results from one qualitative data analysis approach to help inform findings stemming from one or more other qualitative data analysis approaches), and/or *expansion* (i.e., expand the breadth and range of findings by using multiple qualitative data analysis approaches for different data or analysis phases).

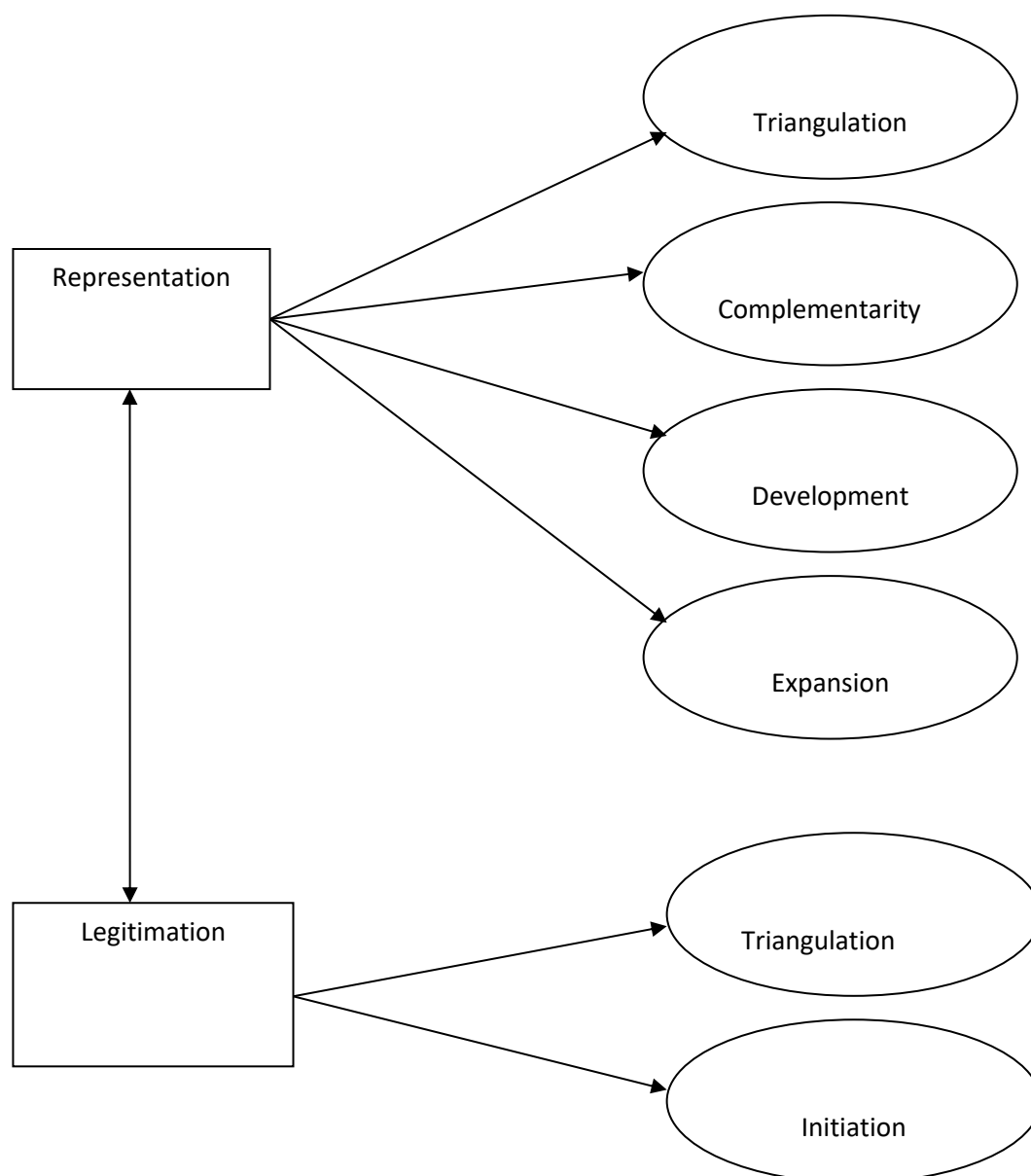


Figure 1. Typology of reasons for using multiple qualitative data analysis approaches. Adapted from Leech, N. L., & Onwuegbuzie, A. J., (2007). An array of qualitative data analysis tools: A call for qualitative data analysis triangulation. *School Psychology Quarterly*, 22, 557-584. Copyright 2007 by the American Psychological Association.

With these rationales for conducting multiple analysis approaches in mind, five different qualitative data analysis approaches were used in this instrumental case study. These analyses, respectively, were word count analysis, keywords-in-context analysis, classical content analysis, constant comparison analysis, and discourse analysis. These five analyses were selected for four major reasons. First, as presented by Leech and Onwuegbuzie (2008; cf. Table 1, p. 590), all five qualitative data analysis approaches are particularly relevant for analyzing interview data. Second, they all represented qualitative data analyses with a tradition that was among the longest. Indeed, using the work of Onwuegbuzie and Denham (2014), these five analyses were within the 10 oldest formalized qualitative data analysis approaches, with word count analysis (oldest approach) being traced back to 323 B.C.E. (Hellenic Period), discourse

analysis (fourth oldest) being traced back to 1924 and coined in 1952, classical content analysis (fifth oldest) being developed in 1931, keywords-in-context (ninth oldest) being coined in 1960, and constant comparison analysis (10th oldest) being developed in 1965. Third, these five analyses represented a diverse set of qualitative data analyses—thereby allowing the researcher to adopt a wide lens during the analytical process—with one analysis (i.e., word count analysis) involving strong use of a quantitative analysis technique, one analysis (i.e., classical content analysis) involving strong use of both a quantitative technique and a qualitative technique, and three analyses (i.e., keywords-in-context, constant comparison analysis, discourse analysis) involving strong use of a qualitative analysis technique. Fourth, and most importantly, all five analyses particularly served to address the overarching research question.

A description of each of these five analyses now follows. However, because the emphasis of this article is upon data analysis, readers are referred to Appendix A for additional information regarding methods.

First, a word count analysis (Carley, 1993) was conducted. Word count involves determining the frequency of each meaningful word under the assumption that the more frequently a word is used, the more important the word is for the person (Carley, 1993). More specifically, Miles and Huberman (1994) posited three reasons for counting words: (a) to identify patterns more easily, (b) to verify a hypothesis, and (c) to maintain analytic integrity. In the present study, word count analysis was conducted on the interview transcript by uploading the transcript into WordStat Version 7.1.6 (Provalis Research, 2014c) and using the frequency option. For information as to how to conduct a word count analysis via WordStat, we refer you to pages 37-43 of the WordStat User's Guide (Provalis Research, 1989-2014).

WordStat Version 7.1.6 (Provalis Research, 2014c) also was used to perform a keywords-in-context (KWIC) analysis to assist the lead author in identifying connections (Leech & Onwuegbuzie, 2007) that could lead to potential themes of interest. Broadly speaking, the goal of KWIC is to identify how words are used by the participant in context with other words. KWIC is conducted under the assumption that people use words differently and, therefore, by examining how words are used in context of their speech, the meaning of these words will be understood better. Moreover, according to Fielding and Lee (1998), KWIC is an analysis of the culture of the use of the word. For information as to how to conduct a KWIC via WordStat, we refer you to pages 93-95 of the WordStat User's Guide (Provalis Research, 1989-2014).

Next, QDA Miner Version 4.1.33 (Provalis Research, 2014a) was used to perform a classical content analysis (Berelson, 1952). Content analysis involves determining how frequently codes are used to determine which concepts are the most cited throughout the data. In the present study, via the classical content analysis, the frequency of codes was determined, and then codes were organized into categories and major themes. For information about how to conduct a classical content analysis via QDA Miner, we refer you to pages 232-238 of the QDA Miner User's Guide (Provalis Research, n.d.).

QDA Miner Version 4.1.33 (Provalis Research, 2014a) also was used to conduct constant comparison analysis (Glaser, 1965). Conceptualized by Glaser (1965), the central objective of constant comparison analysis is to generate themes based upon the participants' responses. This analytical technique involves three stages, all of which focus upon coding (i.e., words and phrases constructed by researchers to organize information; Saldaña, 2016): (a) open coding, (b) axial coding, and (c) selective coding. Open coding involves organizing the raw data into meaningful categories and then assigning labels (i.e., codes; Glaser & Strauss, 1967) to these categories. During the axial coding stage, similar categories are formed by grouping codes, which then are combined and refined during the third stage—the selective coding stage—thereby connecting the codes into a meaningful narrative (i.e., social phenomenon;

Glaser & Strauss, 1967). As noted by Leech and Onwuegbuzie (2008), “Some researchers believe constant comparison analysis only can be used with grounded theory designs.... Yet, we contend that constant comparison analysis can and is commonly used with any narrative or textual data” (p. 594). Consistent with this assertion, Fram (2013) argued for the use of constant comparison analysis outside of grounded theory.

In the present inquiry, the lead author conducted constant comparison analysis outside of grounded theory by (a) reviewing the data previously organized into segments and coded for classical content analysis; (b) organizing codes into categories based upon similarity (Fram, 2013; Leech & Onwuegbuzie, 2007); and (c) identifying themes based upon interpretation of meaning, rather than on quantization of data (i.e., as in classical content analysis; Berelson, 1952). Categories for both analyses, with respect to the model introduced by Constan (1992) to document category formation, were (a) determined by the researcher *a posteriori*; (b) constructed and named by the researcher via investigative means through analysis of the transcript; and (c) verified by the researcher via a rational approach, which relies on logic and reasoning, wherein the categories indicate some sort of functional consistency or hierarchical or causal relationship.

Lastly, the data were analyzed via discourse analysis (Gee, 2014), which is used to examine how an individual employs language to construct his or her reality within seven different realms. According to Gee (2014), language can communicate an individual’s (a) allocation of *significance*; (b) recognition of *practices* or *activities*; (c) construction of *identities*; (d) estimation, either accurate or desired, of *relationships*; (e) perception of *politics*, which involves the degree to which an individual attributes socially acceptable or unacceptable characteristics to an entity; (f) identification of *connections*; and (g) evaluation of *sign systems and knowledge*, which involves the degree to which an individual values different ways of communicating and knowing. These seven uses of language, which Gee (2014) refers to as *building tasks*, were entered as codes within QDA Miner Lite Version 1.4.6 (Provalis Research, 2014b), and parts of the interview transcript that the lead author thought would “illuminate an important issue” (p. 144) were labeled with the appropriate code. With respect to this analysis and Constan’s (1992) model, categories were (a) determined by the literature *a priori*, (b) constructed and named via the literature, and (c) verified externally or substantiated by the literature. For an example, with screenshots, about how to conduct a discourse analysis via QDA Miner, we refer you to Onwuegbuzie and Frels (2014).

Results

The primary purpose of this article is to illustrate the understandings gained by analyzing qualitative data in more than one way; therefore, readers are referred to Appendix B for the complete and detailed results of each analysis. The collective results of the word count, KWIC, and classical content analyses illustrated that Taylor’s perceptions of his experiences with mentoring as a doctoral student seemed to center on the characteristics that he deemed important in a mentor: being trustworthy, acting as a guide, and communicating effectively. The results of constant comparison analysis further refined our interpretation of Taylor’s perceptions by revealing that they involved not only the characteristics of mentors but also the *skills* of mentors that he considered important. Lastly, the results of discourse analysis indicated that Taylor appeared to place a high value on mentoring in general and that he used language to clarify his identity as a doctoral student within the context of mentoring.

Emergent themes based upon the results of the word count analysis encompassed (a) sources of support (e.g., mentor or mentors, people); (b) roles of students (e.g., doctoral), mentors (e.g., guide), and the doctoral program itself; and (c) quality of support (e.g., good). However, the frequency with which a participant uses certain words might not be the best

method to unearth what is most important to him or her (Leech & Onwuegbuzie, 2007). For example, the word most frequently used by Taylor was *mentor*, but conducting the KWIC analysis clarified to us that Taylor used the word *mentor* in different ways in different contexts, most often to refer to his own mentors and to describe the characteristics of mentors. Interestingly, however, characteristics of mentors failed to emerge as a theme in the results of the previously conducted word count analysis. In addition, we interpreted the frequently used word *good* (i.e., “good teacher,” “good mentor,” and “good communicator”) to indicate that quality of support might be a potential theme, before learning through the KWIC analysis that the word *good* often served simply as the first half of Taylor’s descriptors of individuals whom he considered to be mentors.

The results of classical content analysis yielded further evidence that Taylor emphasized the characteristics, or the essence, of effective mentors: A mentor (a) is trustworthy, (b) serves as a guide, and (c) is a good communicator. These are insights into Taylor’s perspective that we would have missed by relying solely upon word count analysis, or even a word count analysis combined with an analysis of KWIC. Although *guide* and *good* were among the 10 words used most frequently by Taylor during the interview, neither *trustworthy* nor *communicator* appeared on the list. The phrase “good communicator” and the words “guide” and “trusted” happened to be present in a quotation that we selected to illustrate Taylor’s use of the word *mentor* in the context of describing the characteristics of mentors, but that coincidence was not nearly as helpful in determining Taylor’s perspective as were the results of the classical content analysis, which revealed that “trustworthy,” “guide,” and “good communicator” were the most frequent codes assigned.

The results of constant comparison analysis served to corroborate that, for Taylor, the characteristics of a mentor matter. However, the results of the analysis also indicated that the skills of a mentor matter *more*. Although Taylor continued to emphasize the characteristics of mentors, particularly trustworthiness, he seemed to hold the skills of a mentor in even higher esteem, specifically their ability to communicate effectively. In contrast to the results of classical content analysis, in which “good communicator” was the third most frequent code assigned, the results of constant comparison analysis appeared to verify that mentors who communicate effectively are of primary importance to Taylor.

Lastly, the results of discourse analysis (Gee, 2014) indicated that Taylor allocated tremendous significance to the general role that mentoring had played in his success, an aspect of Taylor’s perspective concerning mentoring that was not revealed by the results of previous analyses. Another element of Taylor’s perspective that was not previously revealed in the results of other analyses was the curious contrast between his self-described authentically informal relationship with his doctoral mentor and a desire for formal relationships with mentors in general. The results of discourse analysis also illustrated that Taylor used language to clarify his identity as a doctoral student by contrasting his own perceived level of knowledge with the level of knowledge of an ideal mentor, which is a characteristic of mentors that we would not have recognized as particularly meaningful for Taylor based on the results of classical content analysis (i.e., “knowledgeable” ranked eighth in frequency) or the other analyses.

Examining the results of five different qualitative data analyses in an effort to reach analysis saturation and, therefore, augment our understanding of Taylor’s perspective regarding his experiences with mentoring, could be likened to constructing a large and complex jigsaw puzzle to which one has lost the box, as well as some of the pieces. Taylor’s most frequently used words could be viewed as border sections—easy to identify but hardly representative of the final picture—with the results of each subsequent analysis revealing more details about how the pieces might fit together to form an image in the frame with which we began. As with the incomplete puzzle, the best we could hope for was a “thoroughly partial

understanding” (Richardson & St. Pierre, 2005, p. 963) of Taylor’s perspective at a given time during his journey as a doctoral student; however, the use of multiple qualitative data analyses allowed to us to understand more than we might have, “to generate more meaning, thereby enhancing the quality of inferences” (Leech & Onwuegbuzie, 2007, p. 579). Figure 2 illustrates just one example of the ways in which our understanding of Taylor’s perspective expanded with each analysis.

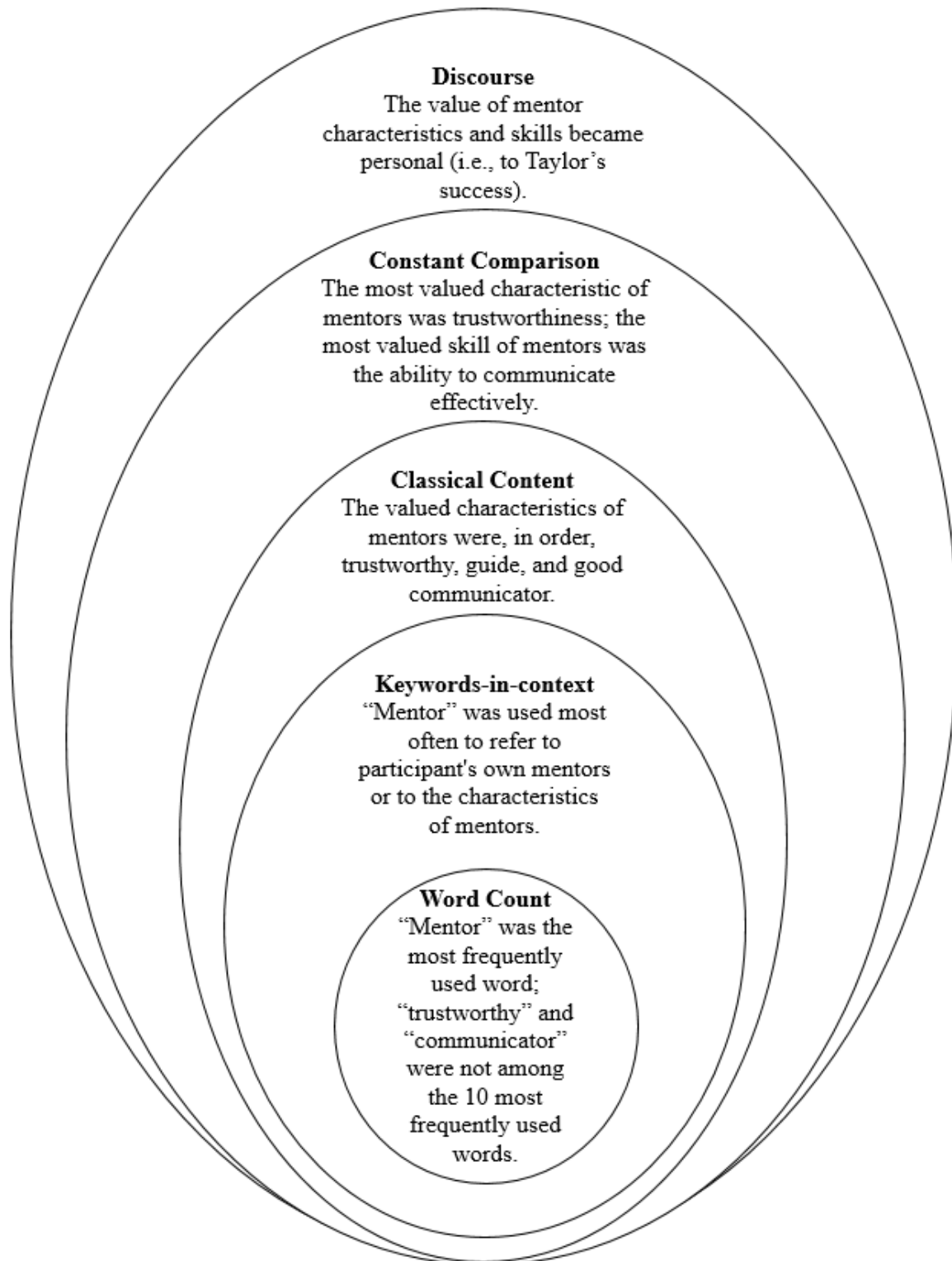


Figure 2. Increased understanding of participant’s perspective regarding mentor characteristics

Conclusions

As Miles and Huberman (1994) declared, “The strengths of qualitative data rest on the competence with which their analysis is carried out” (p. 10). We believe that by being aware of only one or even a few qualitative data analysis approaches, a qualitative researcher might *make the data fit the analysis* rather than select the most appropriate data analysis approach(es) given the underlying research elements such as the researcher’s positionality, research question, researcher’s lens, and sampling and design characteristics—thereby leading to a compromised data analysis that yields unnecessarily biased interpretations and meaning making. In contrast, by employing multiple qualitative data analysis approaches, a qualitative researcher is in a better position not only to conduct analyses that have integrity but also to conduct what we term as *emergent analyses*—analyses that emerge as findings emerge—as well as attaining analysis saturation. Thus, we believe that qualitative researchers likely would put themselves in a better position for meaning making and reaching *verstehen* if they adopt a constructivist approach to qualitative data analysis, operating under the assumption that phenomena do not exist independently of researchers’ construction of them (i.e., epistemology) and that there are multiple accounts (i.e., findings) of the same phenomenon that represent multiple realities (i.e., ontology). Thus, the epistemology and ontology of constructivism, alongside critical dialectical pluralism, is compatible with our notion of conducting multiple qualitative data analysis approaches.

Interestingly, in our exemplar, all five rationales for conducting multiple qualitative data analysis approaches (i.e., *triangulation, complementarity, initiation, development, expansion*) were realized. For example, with regard to triangulation, findings from both the classical content analysis and constant comparison analysis revealed that, for Taylor, the characteristics of a mentor matter. With respect to complementarity, the KWIC analysis clarified to us that Taylor used the word mentor in different ways in different contexts. In terms of initiation, the KWIC analysis contradicted the finding from the word count analysis of a characteristics of mentors theme. With respect to development, the results of classical content analysis further developed the findings from the word count and KWIC regarding the characteristics of effective mentors by revealing that a mentor is trustworthy, serves as a guide, and is a good communicator. Finally, with regard to expansion, findings from the discourse analysis expanded the findings from the other analyses by indicating that Taylor used language to clarify his identity as a doctoral student within the context of mentoring. These five purposes for conducting multiple qualitative data analysis approaches go beyond the qualitative data analysis triangulation—which represents only one of these five purposes—advocated by Leech and Onwuegbuzie (2007).

Moreover, as we demonstrated, using multiple qualitative data analysis approaches can help researchers address what Denzin and Lincoln (2011) referred to as the crisis of representation, namely, the difficulty in capturing lived experiences via text. In our example, each of the five analysis approaches led to value-added findings and interpretations, which, in turn, allowed us to capture the voice of Taylor more adequately than if we had used one or more fewer qualitative analysis approaches. Further, using multiple qualitative data analysis approaches can help researchers address what Denzin and Lincoln (2011) referred to as the crisis of legitimation, namely, the difficulty in assessing qualitative findings. Indeed, as can be seen from our example, each subsequent analysis helped to increase interpretive validity (i.e., the extent to which a researcher’s interpretation of an account represents an understanding of the perspective of the person[s] under study and the meanings attached to her/his/their words and actions; Maxwell, 1992) and theoretical validity (i.e., the extent to which a theoretical explanation developed from research findings fits the data, and thus, is trustworthy, credible, and defensible; Maxwell, 1992). Further, conducting multiple qualitative analysis approaches

helps to increase both the scope (i.e., via prolonged engagement with the data) and depth (i.e., via persistent observation of the data) of the data analysis process. Finally, Gilbert Ryle, the 20th-century philosopher, introduced the concept of *thick description*, which Geertz (1973) further developed. According to Geertz (1973), a thick description of a human behavior is a description that explains not only the behavior itself but also its context, in such a manner that the behavior becomes meaningful to a person with an etic (i.e., outsider) perspective. As exemplified in this article, using multiple qualitative data analysis approaches has the potential to enhance thick description.

In closing, some interpretivists might argue that our call for conducting multiple qualitative data analysis approaches represents a paradigm shift. However, rather than representing a paradigm shift, we contend that our approach represents a promotion of a multiple methodological way of thinking when conducting qualitative analyses in an attempt to “expand our ways of understanding how we come to know about our inner lives and social worlds” (Holstein & Gubrium, 2004, p. 157), thereby coming closer to *verstehen*. However, we recognize that our alternative way of analyzing qualitative data adds a layer of complexity to the qualitative data analysis process; yet, we believe that this is offset by the fact that this multiple methodological, constructivist, and emergent way of analyzing data encourages the researchers to get more out of their data. Furthermore, conducting multiple qualitative data analysis approaches helps to transform the analysis process by enabling analysts to think in a multiple methodological way, with the analysis process being viewed to a greater extent as a dynamic, iterative, interactive, synergistic, integrative, and holistic meaning-making process that involves the (further) deconstruction of the participant’s voice.

We recognize that conducting multiple qualitative data analysis approaches brings to the fore its own set of analytical challenges. In particular, adopting this multiple methodological way of analyzing qualitative data has implications for teaching and learning qualitative research. Moreover, it necessitates the delineation of frameworks, models, exemplars, and the like for teaching students how to conduct multiple qualitative data analysis approaches such as Onwuegbuzie et al.’s (2012) model. However, we hope that this article represents a step towards capturing the voice in an even more trustworthy, expansive, and, above all, meaningful manner. At the very least, we hope that the idea that we have presented heretofore motivates discourse among interpretive researchers—discourse that may be subjected to multiple analyses!

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Appendix A

Additional Methods

Method

Instruments

The interview was recorded on two different devices (computer and mobile phone), an action that served to capture not only linguistics data but also chronemic (e.g., pacing) and paralinguistic (e.g., tone, volume) data as defined by Gorden (1975). Then, the interview was transcribed from the recordings, and the lead author referred to memory and handwritten notes to insert kinesic (e.g., body movement) data, also defined by Gorden (1975), into the transcript. The lead author also relied upon memory for proxemic (e.g., space between interviewer and interviewee; Gorden, 1975) data. Touch was not involved in the interview, so no haptics data were collected. Optics data also were not collected because Taylor and the lead author sat beside one another for the duration of the interview: The inclination that interviewers and interviewees have to watch one another's eyes increases as the distance between the individuals increases (Gorden, 1975).

Conducting an interview is of most benefit when the researcher seeks to obtain in-depth information from the perspective of the participant (e.g., his or her beliefs; Gorden, 1975). According to Kajornboon (2005), a semi-structured interview is an appropriate choice for the researcher who has constructed an interview protocol but desires the freedom within the interview to deviate from the protocol (e.g., vary the question order, ask additional questions). Having this freedom allowed adherence to Roulston's (2010) constructionist conception of the qualitative interview, in which the interviewer and interviewee co-construct data by engaging in conversation: "In interview talk, this means that in any sequence of utterances, speakers show how they have oriented to and made sense of other speakers' prior talk" (p. 219).

Because the interview was semi-structured, the lead author also was able to ask additional questions (e.g., clarifying), as recommended by Kvale (1996), to increase the quality of the interview. For example, because Taylor referred to a mentor as a guide, she asked a clarification question (Janesick, 2004): "Could you tell me more about what you mean by guide?" A few experience/example questions (Janesick, 2004) also were asked, one of which was "So, could you give me some examples as to maybe how someone would need something

different, other than what you need [from a mentor]?” In addition, as advised by Kvale (1996), probing questions were asked, such as “Can you tell me more about that?”

Among the five authenticity criteria set forth by Guba and Lincoln (2005)—fairness, ontological authenticity, educative authenticity, catalytic authenticity, and tactical authenticity—the interview questions addressed three. Regarding the criterion of fairness, or the degree to which the participant’s views were adequately represented (Guba & Lincoln, 2005), Taylor’s responses to all questions were recorded, transcribed, and member-checked for accuracy and adequacy. The content of all questions also addressed Guba’s and Lincoln’s (2005) concept of ontological authenticity, or the extent to which the participant’s degree of awareness increased (i.e., they were designed to give Taylor the opportunity to contemplate his experiences with mentoring). The fifth question in the interview protocol, as well as the experience/example (Janesick, 2004) question described previously, both caused Taylor to reflect upon his own experiences with mentoring in an effort to understand the perspectives of others, fulfilling Guba’s and Lincoln’s (2005) concept of educative authenticity. However, none of the interview questions related to a participant’s desire to act upon new understandings or a researcher’s willingness to empower the participant to act (catalytic authenticity and tactical authenticity, respectively; Guba & Lincoln, 2005).

The process of member checking (Manning, 1997) was limited, involving only Taylor’s accuracy and adequacy check of the transcript that the lead author had created; he suggested no changes. The single short debriefing interview (Onwuegbuzie, Leech, & Collins, 2008), which was conducted by another doctoral student approximately one month after the initial interview, also was semi-structured and consisted of six open-ended questions. All of the debriefing interview questions could be categorized as basic descriptive questions (Janesick, 2004): (a) To what degree do you think the setting impacted the dynamics of the interview?; (b) What is your opinion regarding the recording quality of the interview?; (c) At what point did an issue or situation arise that you were not expecting and how did you respond?; (d) Is there anything in particular that impacted you about the interview?; (e) Looking back to when you transcribed the interviews, what positive thoughts come to mind?; and (f) What else would you like to add or want for me to know?

Procedures

Data collection. The purpose of this interview was to collect data about Taylor’s experiences with mentoring as a doctoral student. He knew the nature of the questions and the interview procedures (i.e., the conversation would be recorded, transcribed, and analyzed) prior to participating and freely agreed to take part. The interview was conducted face-to-face privately in the classroom of a 4-year public institution; all of the questions in the interview protocol were asked, as well as clarifying and probing questions. The interview was recorded on both a laptop computer and a mobile phone, and nonverbal data were recorded by hand. The interview was transcribed 5 days later using both recording devices: The computer recording captured almost all of the dialogue, and the phone recording clarified any sections that the computer muffled.

Taylor and the lead author again met privately face-to-face, this time in a different, but similarly arranged, classroom in the institution, 2 days after the interview had been transcribed. A paper copy of the transcript was submitted to Taylor for the purpose of member-checking, or to review the document for accuracy and adequacy and to request any desired changes (Manning, 1997). Although Taylor communicated that there was no need for him to review the transcript, the lead author encouraged him to read it anyway. After taking approximately 10 minutes to review the document, Taylor conveyed his approval and requested no changes. Prior to data analysis, which was conducted during the next 2 months using QDA Miner Version

4.1.33 (Provalis Research, 2014a), WordStat Version 7.1.6 (Provalis Research, 2014c), and QDA Miner Lite Version 1.4.6 (Provalis Research, 2014b), the names in the transcript were removed and replaced with the first initials of the lead author and of the participant. Also, the lead author participated in a single debriefing interview 1 week prior to analyzing the data, which allowed her to examine any effects that her biases might have had on the interview process and to consider how such biases might affect her interpretation of the data (Onwuegbuzie et al., 2008).

Research paradigm. The lead author believed, as Berger and Luckmann (1966) asserted, that reality is socially constructed. Consistent with this social constructionist worldview (Schwandt, 2000), this instrumental case study afforded the lead author a more complete understanding of a topic by learning about another individual's experiences, which were both similar to and different from her own. Although Taylor and she experienced their worlds as doctoral students independently, the meanings derived from these worlds—and, with regard to the data themselves, her meaning-making of Taylor's meaning-making—were co-constructed, as described by Berger and Luckmann (1966):

I also know, of course, that . . . others have a perspective on this common world that is not identical with mine. My “here” is their “there.” My “now” does not fully overlap with theirs. My projects differ from and may even conflict with theirs. All the same, I know that I live with them in a common world. Most importantly, I know that there is an ongoing correspondence between *my* meanings and *their* meanings in this world, that we share a common sense about its reality [emphasis in original]. (p. 23)

Research design. According to Stake (2005), a “case study is not a methodological choice but a choice of what is to be studied.... By whatever methods, we choose to study *the case*” (p. 443) [emphasis in original]. Stake (2005) also acknowledged that the researcher might pursue an interest in a phenomenon—a doctoral student's experiences with mentoring, in this instance—within the bounds of the case. Furthermore, in an instrumental case study, the case itself is not as important as the understanding gained from the case concerning the phenomenon of interest (Stake, 2005). Therefore, because the purpose of this study was to enhance the general understanding of the topic through an individual's experiences, a qualitative instrumental case study was appropriate.

Verification. The process of co-constructing meaning, as previously referenced, is weakened absent input from the participant beyond the interview: Manning (1997) asserted that “member checking is part of the collaborative process of negotiated outcomes” (p. 102). As described, Taylor had the opportunity to review a paper copy of the interview transcript for accuracy and adequacy, as well as the opportunity to request any desired changes. Although at first he rejected this opportunity, the lead author persuaded him to confirm that the transcript represented his words and actions accurately.

Legitimation

Threats to external credibility. Onwuegbuzie and Leech (2007) noted that external credibility relates to the generalizability of the findings of the researcher. In conducting a qualitative case study, however, the lead author was not concerned with making generalizations about a larger population. Even so, *interpretive validity*, *action validity*, and *catalytic validity* all represented threats to the external credibility of this study.

Interpretive validity. The most concerning external threat to credibility for this study involved interpretive validity, or how accurately the researcher renders the participant's perspective (Maxwell, 2002). As previously referenced, a social constructionist paradigm necessitates the co-construction of meaning; however, as noted by Maxwell (2002), the co-construction begins with the meanings assigned by the research participant, which reflect his or her emic perspective. Maxwell (2002) cautioned the researcher to remember that even participants' accounts are never completely infallible, so some degree of error in interpretation is inevitable. This threat posed a great risk to legitimation because the lead author shared Taylor's emic perspective in her role as a complete-member-researcher (Adler & Adler, 1987), thereby potentially increasing the chances that her own perspective and bias could conflate her interpretation of Taylor's account. As described previously, the lead author took care to expand her perspective and to minimize any bias introduced by her own experiences by engaging in member-checking (Manning, 1997) and debriefing the researcher (Onwuegbuzie et al., 2008).

Action validity. Another external threat to credibility for this study involved action validity, or the degree to which the researcher's findings prompt effective actions (Kvale, 1995). Kvale (1995) asserted that "knowledge is action rather than observation" (p. 32), but he also conceded that one cannot take action without observations and interpretations upon which to act. Therefore, if interpretive validity constituted an external threat to legitimation, then action validity also posed a threat: The effectiveness of any action taken in response to the results of this study might be dependent upon the accuracy of the original interpretations that motivated the response. Thus, engaging in member-checking (Manning, 1997) and debriefing the researcher (Onwuegbuzie et al., 2008) also might have strengthened action validity.

Catalytic validity. Catalytic validity, or the extent to which research participants are empowered and emboldened to act by virtue of what they experienced during the research process (Lather, 1986), comprised a third external threat to credibility for this study. As previously referenced, none of the questions in the interview protocol related to catalytic authenticity (Guba & Lincoln, 2005). In addition, only one interview was conducted, so any changes in Taylor's feelings or any actions he might have taken as a result of the research process remain unknown.

Threats to internal credibility. The internal credibility of a study involves how well others can trust the researcher's findings (Onwuegbuzie & Leech, 2007). In particular, given the lead author's social constructionist view, the internal credibility of this study depended in part upon how accurately she rendered "multiple constructed realities" (Lincoln & Guba, 1985, p. 295). Possible threats to the internal credibility of this study were *reactivity*, *descriptive validity*, *researcher bias*, *paralogical validity*, and *voluptuous validity*.

Reactivity. Reactivity involves the ways in which being aware of participating in a research study can unduly influence participants' words and behavior (Onwuegbuzie & Leech, 2007). The lead author's role as a complete-member-researcher (Adler & Adler, 1987) might have helped lessen Taylor's reactivity during the interview because they had informally discussed similar topics together in the past. In addition, Taylor's own knowledge of the procedures involved in an interview likely helped reduce the *novelty effect*, or the type of reactivity that occurs when participants are presented with an out-of-the-ordinary item, such as a recording device, to collect data (Onwuegbuzie & Leech, 2007).

Descriptive validity. Descriptive validity refers to how accurately the data were reported (Maxwell, 2002), or, in this case, the accuracy with which Taylor's words were

recorded and transcribed. Recording the interview on two different devices and using both recordings to transcribe the interview helped mitigate the threat to descriptive validity. This threat was also diminished by persuading Taylor to review the transcript for accuracy and adequacy and to request any desired changes (Manning, 1997).

Researcher bias. According to Onwuegbuzie and Leech (2007), researcher bias involves the threat posed by assumptions inherent in the researcher (e.g., based on prior knowledge) and occurs frequently when the researcher acts as an instrument in the data collection process. Researcher bias constituted a formidable threat to this study because the lead author possessed her own experiences and perspectives as a doctoral student. However, she attempted to guard against such bias through member-checking (Manning, 1997) and debriefing the researcher (Onwuegbuzie et al., 2008).

Paralogical validity. Lather (1993) noted that paralogical validity is “concerned with undecidables, limits, paradoxes, discontinuities, [and] complexities” (p. 686). When referring to Lyotardian paralogy, Lather (1993) emphasized remaining aware of differences in perspectives rather than focusing on what we think we already know. Thus, paradoxes can reveal realities that exist outside of our own. Because the lead author shared Taylor’s emic perspective in her role as a complete-member-researcher (Adler & Adler, 1987), she risked missing paradoxes and mistaking Taylor’s story for her own. Employing member-checking (Manning, 1997) and participating in debriefing (Onwuegbuzie et al., 2008) also helped guard against this threat.

Voluptuous validity. Voluptuous validity “brings ethics and epistemology together” (Lather, 1993, p. 686) and involves how well the researcher stays within the bounds of his or her knowledge of the data while attempting to supply an interpretation of the data (Onwuegbuzie & Leech, 2007). Paradoxically, the lead author’s status as a beginning qualitative researcher helped protect against this threat. She was aware of her limitations and relied upon the supervision and guidance of a renowned professor and research methodologist who provided abundant feedback.

Appendix B

Results

Word Count

WordStat Version 7.1.6 (Provalis Research, 2014c) was employed to determine the 10 words used most frequently by Taylor during the interview (excluding *um* and *uh*). The most frequently used word was *mentor*, and even more so when considering the variation *mentors*. Potential themes based upon the word count comprised (a) sources of support (e.g., mentor or mentors, people); (b) roles of students (e.g., doctoral), mentors (e.g., guide), and the doctoral program itself; and (c) quality of support (e.g., good).

The following passage illustrates Taylor’s use of the word *mentor* with respect to the potential theme of sources of support:

I do have two mentors that I use as it relates to this program. One is my academic mentor that helps me negotiate everything from how to deal with classes, to do that kind of stuff and just academic in general, and the other is the person I’ve asked to chair my dissertation. And they are serving as well as a mentor through

the process.

Another frequently used word—*doctoral*—hinted at the potential theme of roles of various entities: “doctoral mentor,” “doctoral program,” “doctoral program mentor,” and “doctoral student.” Last, the frequently used word *good* (i.e., “good teacher,” “good mentor,” and “good communicator”) indicated that quality of support represented a potential theme.

Keywords-in-Context

WordStat Version 7.1.6 (Provalis Research, 2014c) also was used to perform a keywords-in-context (KWIC) analysis to determine the words surrounding Taylor’s most frequent utterances. The KWIC analysis revealed that Taylor’s use of the word *mentor* most often referred to his own mentors. For example, Taylor had experienced different mentors in different contexts: “Honestly, it’s more as I went through, you know, [various experiences] I had mentors. I had mentors to help me with, looking at, kind of basically my personal life as well. I’ve had academic mentors.”

KWIC analysis also revealed that the second most frequent context in which Taylor used the word *mentor* was in describing the characteristics of mentors, an example of which is exemplified in the following passage:

I mean, what I gave you was a, call it a baseline definition, if you will, of *mentor*. So, if you said, what is a *mentor*, the simplest, most basic definition is a guide and a trusted advisor. Now, if you said what characteristics does a good *mentor* have, I can start adding in the layers of complexity and start to do that. Yes, good communicator, good teacher, someone who is willing to invest in a mentee’s personal growth.

KWIC also revealed a surprising aspect of Taylor’s next most frequently used word, *doctoral*. As suspected, based upon the word count, the word *doctoral* most often referred to Taylor’s role as a doctoral student; however, the word also was used to distinguish his mentors in the doctoral program from other mentors in his life:

And, as of yet, I have not run across a single scenario with my *doctoral mentor* where I’ve had a negative experience or would anticipate one, And the only incident that came anywhere close to that, um, the response from this *doctoral program mentor* was essentially don’t worry about that, let me handle it....

Classical Content Analysis

QDA Miner Version 4.1.33 (Provalis Research, 2014a) was used to perform a classical content analysis (Berelson, 1952), in which the frequency of codes was determined. Then, the codes were organized into categories and assessed for themes. A total of 18 codes were identified; however, the frequencies of the occurrences of the codes helped clarify the major themes extracted from the codes, all surrounding the essence of a *mentor*. In Taylor’s experience, a *mentor* (a) is trustworthy, (b) serves as a guide, and (c) is a good communicator.

The importance to Taylor of a *mentor*’s trustworthiness, as well as his concept of *mentor* as guide, is illustrated in the following passage:

If I’m gonna let you guide me somewhere, even if it’s to the restroom, I want to be able trust you, you know. So, it’s as much a trust in a, in a personal sense to

me as it is in a professional sense. You may be the greatest guide there could possibly be for x, however if I can't trust you personally, or I can't trust you professionally? Then I don't want to, I'm not gonna be able to work with you.

The next passage exemplifies Taylor's assertion that a mentor is a good communicator:

Universally, they are outstanding listeners and great communicators. They have the ability to explain, to teach, to communicate very effectively on a lot of different levels and with a variety of tools. Sometimes it's just straightforward, you know... here's one, two, three are the steps in the process. Other times, it's through analogies, telling stories, or whatever it may be, but they're exceptional communicators. Two, they are, universally, what I would consider to be brilliant people, if not at the bottom line very, very smart. But also have that ability to break that knowledge down in a manner that it can be told.

Constant Comparison Analysis

Previous analysis of the 2,895-word document performed within QDA Miner Version 4.1.33 (Provalis Research, 2014a) for the original purpose of classical content analysis (Berelson, 1952) revealed 21 codes. Upon reorganizing the codes, the lead author identified four categories—mentor types, mentor characteristics, mentor skills, and mentoring process—from which she deduced two themes based upon her interpretation of the importance Taylor seemed to attribute to the codes in each category: *characteristics of a mentor matter* and *skills of a mentor matter* more.

Taylor seemed to emphasize the importance of the characteristics of a mentor, referring to all of the mentors he had known as “people that I see as incredibly valuable.” Taylor also referred to mentors within his doctoral program as individuals that students “can truly trust . . . [who] will allow [them] to persevere and persist all the way through to degree completion.” In addition, Taylor highlighted the importance of a mentor being a “positive influence” and “somebody who tells us . . . the truth about where we are and what we're doing.” As the following passage illustrates, Taylor further stressed the importance of the mentor characteristic of trustworthiness:

If I'm gonna let you guide me somewhere, even if it's to the restroom, I want to be able trust you, you know. So, it's as much a trust in a, in a personal sense to me as it is in a professional sense. You may be the greatest guide there could possibly be for x, however if I can't trust you personally, or I can't trust you professionally? Then I don't want to, I'm not gonna be able to work with you.

Although Taylor seemed to consider the characteristics of a mentor to be important, he spoke more forcefully regarding the skills of a mentor. He firmly believed that a mentor should have the ability to serve as a “guide” and an “advisor.” Taylor also named several abilities related to the communication skills of mentors:

Universally, they are outstanding listeners and great communicators. They have the ability to explain, to teach, to communicate very effectively on a lot of different levels and with a variety of tools. Sometimes it's just straightforward. . . . Other times, it's through analogies, telling stories, or whatever it may be, but they're exceptional communicators.

The following passage also illustrates Taylor's opinion that a mentor's communication skills are of primary importance:

A good teacher's got to recognize . . . you have [different] students in your class, and that teacher, she needs to be able to communicate effectively with all of them, therefore, you say the same thing but you say it four different ways. . . . And so a good mentor is able to . . . do that. For me personally, that's one of the characteristics that they all share.

Discourse Analysis

The lead author performed a discourse analysis using QDA Miner Lite Version 1.4.6 (Provalis Research, 2014b). During the process, she noted that much of Taylor's language exemplified three of the seven uses of language described by Gee (2014). Taylor used language to allocate significance, to construct his identity, and to indicate his authentic and desired relationships with others.

Significance. Taylor allocated tremendous significance to the general role that mentoring had played in his success. He believed that having mentors had made a difference in what he had been able to accomplish in his life:

Mentoring is very important to me for a variety of reasons. I have...had mentors since I was a child. And in various elements and aspects and phases of my life, both personal and professional mentors, and . . . it has allowed me to do more and go further than I would have been able to do on my own.

Conversely, Taylor allocated little significance to the importance of the student mentor assigned to him within his doctoral program:

One of the things that this doctoral program did was set us up with someone in a previous cohort, and basically said . . . they're here, they're available to mentor you. Other than an exchange of information I've never reached out to that person. . . . Maybe . . .not needing whatever I felt . . . they were able to bring. I just haven't done that.

Identities. In several instances Taylor used language to clarify his own identity by comparing and contrasting his perceptions of himself with his perceptions of others. First, Taylor asserted one of his strengths by contrasting his perceived level of knowledge with the level of knowledge of an ideal mentor:

I don't know everything, and I see one of my strengths as being that I am aware of my limitations. And, to find people that know more than me . . . that have done what I want to do and can help guide me, be it through a process, through a journey, whatever it may be. . . . That's the way I use the term guide.

Next, Taylor drew distinctions among the personalities of various members of his cohort while also acknowledging that they all have a need that Taylor also shares: "[Members of the cohort] are all unique little snowflakes in our own fashion, yet each of us needs some form of guidance, some form of support, and . . . again, that person that we can truly trust. . . ." Last, Taylor expanded upon the differences among cohort members to emphasize his own identity as a

doctoral student in the context of being mentored:

[I] don't necessarily need a lot of cheerleading or support Other people may very much require more emotional support [than] that. I don't have a lot emotionally invested in this or in the process itself. I separate it out from work, if you will. Whereas to other people this is very much an emotional process . . .

Relationships. Taylor seemed to send mixed messages with the language that he used to convey his authentic and desired relationships with mentors. One passage illustrates an authentically informal relationship with his doctoral mentor:

As of yet, I have not run across a single scenario with my doctoral mentor where I've had a negative experience or would anticipate one. And the only incident that came anywhere close to that . . . the response from this doctoral program mentor was essentially don't worry about that, let me handle it.... We'll, we'll come up with something, OK? Not sure what it's gonna look like just yet but we'll go, we'll figure something out.

Yet another passage illustrates Taylor's desire for formal relationships with mentors in general:

I typically tend to have more formalized relationships with mentors, OK? With parameters of what we do, when we're going to meet. . . . And it's so they are structured more along the line of, of formal meetings. . . . I'm here to address something specifically. I will have given you an agenda, so to speak, or said here's my issue or here's my problem. You'll know what it is in advance, had time to work on it and think about it and can . . . help take me through that process or work with it.

Appendix C

References for Heuristic Example

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Article Citation

Sechelski, A. N., & Onwuegbuzie, A. J. (2019). A call for enhancing saturation at the qualitative data analysis stage via the use of multiple qualitative data analysis approaches. *The Qualitative Report*, 24(4), 795-821. Retrieved from <https://nsuworks.nova.edu/tqr/vol24/iss4/11>
