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An Exemplar for Combining the Collection, Analysis, and Interpretations of Verbal and Nonverbal Data in Qualitative Research

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Abstract

Denham and Onwuegbuzie (2013) provided evidence that relatively few qualitative researchers include any mention of nonverbal communication in their empirical articles. Of those who do include this information, the vast majority of qualitative researchers devote as little as one sentence to nonverbal communication data in their published articles. However, this lack of reporting of nonverbal communication data likely stems from the scant guidance in this area given by authors of qualitative research textbooks. Thus, the purpose of the present article is to provide a framework for collecting, analyzing, and interpreting nonverbal communication behavior. This framework yields guidelines for students to collect, to analyze, to interpret, and to report nonverbal communication data. Underlying this framework is a 13-step nonverbal communication process that serves as a conceptual framework that we use in our qualitative research methodology courses to help students develop a *nonverbal communication way of thinking*. This 13-step nonverbal communication process occurs at the following three stages: the Conceptualization Stage, the Planning Stage, and the Implementation Phase. Rather than representing a linear process, the nonverbal communication methodological steps within each stage and across stages are interactive and recursive. After providing this framework, we present an exemplar for reporting nonverbal communication data.

Keywords: nonverbal communication; nonverbal behaviors; verbal data; qualitative research

Interviews—both individual interviews and focus group interviews—represent one of the most effective ways to collect data in qualitative research studies because they allow the researcher to capture the voices of participants, thereby obtaining insights into the routine and problematic experiences and the meaning attached to these experiences of individuals (e.g., biography, auto-biography, life history, oral history, auto-ethnography, case study) and groups (e.g., phenomenology, ethnography, grounded theory), which, under certain conditions (e.g., data saturation, theoretical saturation, informational redundancy), can achieve *Verstehen* or understanding. In other words, interviews provide qualitative researchers with opportunities for obtaining thick description (Geertz, 1973) and, hence, meaning making (Warren, 2002). Consequently, interviews represent the most common way of collecting data in qualitative research studies. Consistent with this assertion, Denham and Onwuegbuzie (2013), who examined all 401 articles published in *The Qualitative Report* between 1990 and 2012, documented that 71.1% of these empirical articles involved the collection of some form of interview data.

Many authors of qualitative research textbooks define an interview in a similar way, as involving a conversation between the interviewer and interviewee (i.e., research participant). For example, deMarrais (2004) defines an interview as "a process in which a researcher and participant engage in a conversation focused on questions related to research study" (p. 55). Similarly, Kvale and Brinkmann (2009) define an interview as an "inter-change of views between two persons conversing about a theme of mutual interest" (p. 2). Yet, such definitions do not fully capture the potential data that can be collected from interviews. In particular, these definitions do not take into account the fact that not only verbal data can be collected during interviews but also nonverbal data. Indeed, nonverbal communication accounts for 93% of how humans communicate with each other, with what humans say accounting for only 7% of how humans communicate with each other (Mehrabian, 1981). Thus, it is extremely surprising that most authors who write about the conduct of interviews only focus on verbal data and omit the rich information that can be gleaned from nonverbal communication data.

As an example, with respect to Creswell's (2007) extremely popular and groundbreaking qualitative research textbook that has been cited in more than 23,000 works, although it contains excellent information about conducting interviews, it does not contain a single mention of nonverbal communication. Nor do the excellent qualitative textbooks authored by Maxwell (2004) or Stake (2010) contain any mention of nonverbal communication. Table 1 presents the number of pages devoted to nonverbal communication in select leading qualitative research textbooks. Further, a perusal of numerous syllabi of qualitative research courses across the United States (see, for e.g., http://www.nova.edu/ssss/QR/syllabi.html) revealed virtually no mention of students being exposed to the topic of nonverbal communication.

Table 1. Number of Pages Devoted to Nonverbal Communication in Leading Qualitative Research Textbooks

Textbook	Current Number of Citations	Number of Pages Devoted to Nonverbal Communication
Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches* (2nd ed.). Thousand Oaks, CA: Sage.	25,550	0
Merriam, S. B. (2009). *Qualitative research: A guide to design and implementation*. San Francisco, CA: Jossey-Bass.	2,243	5 (1-2 sentences)
Maxwell, J. A. (2004). *Qualitative research design: An interactive approach* (2nd ed.). Thousand Oaks, CA: Sage.	8,065	0
Denzin, N. K., & Lincoln, Y. S. (2011). *Sage handbook of qualitative research* (4th ed.). Thousand Oaks, CA: Sage.	2,422	7 (1-2 sentences)
Stake, R. E. (2010). *Qualitative research: Studying how things work*. New York, NY: The Guilford Press.	367	0

With such little focus on nonverbal communication data, it should not be surprising then that relatively few qualitative researchers appear to incorporate the collection, analysis, *and* interpretation of nonverbal communication data into their qualitative research studies. Consistent with our assertion, Denham and Onwuegbuzie (2013), who examined the prevalence and use of nonverbal communication data throughout the phases of all qualitative research studies published in a reputable qualitative journal—namely *The Qualitative Report*—since its inception in 1990 (n = 299) to the mid-year point (i.e., June 30) of 2012—representing approximately 22 years, documented that only 24% (n = 72) of articles included any mention of nonverbal communication, with the vast majority of these authors providing extremely scant mention (e.g., one sentence). This low incidence of discussion of nonverbal communication occurred whether the design represented grounded theory, phenomenology, case study, ethnography, narrative research, or life history. As such, it is clear that verbal data are privileged over nonverbal communication data by many—if not most—qualitative researchers.

Yet, building on Greene, Caracelli, and Graham's (1989) typology, Denham and Onwuegbuzie (2013) conceptualized that

> nonverbal communication data could allow qualitative researchers to (a) *corroborate* speech narrative (i.e., triangulation); (b) *capture* underlying messages (i.e., complementarity); (c) *discover* nonverbal behaviors that contradict the verbal communication (i.e., initiation); (d) *broaden* the scope of the understanding (i.e.,

> expansion); and (e) *create new directions* based on additional insights (i.e., development). This conceptual framework indicates that qualitative researchers can use nonverbal communication data for one or more of five purposes relative to the verbal communication data collected, either a priori (e.g., looking for contradictions between the nonverbal and verbal data from the onset), a posteriori (i.e., determining how the nonverbal and verbal data relate to each other as the data analysis unfolds), or iteratively (i.e., combining a priori and a posteriori analyses). (pp. 674-675)

Indeed, based on their five-element framework, Denham and Onwuegbuzie (2013) recommended that at least five additional codes can be added to Saldaňa's (2012) 32 types of coding, including the following: *corroborate coding*, *capture coding*, *discover coding, broaden coding,* and *new directions coding.* Thus, as contended by Denham and Onwuegbuzie (2013), by collecting, analyzing, and interpreting nonverbal communication data, qualitative researchers can obtain thicker descriptions (cf. Geertz, 1973) and interpretations "via the process the researcher will take to make sense of both forms of data simultaneously that would not have been the case if the use of nonverbal communication data had not been incorporated into the study" (p. 7). Moreover, we contend that by not collecting, analyzing, and interpreting nonverbal communication data, the qualitative researcher increases the chances of not reaching saturation (cf. Flick, 1998; Lincoln & Guba, 1985; Morse, 1995; Strauss & Corbin, 1990), whether it be data saturation (i.e., occurring when information occurs so repeatedly that the qualitative researcher can expect it and whereby the collection of more data appears to have no additional interpretive value [Sandelowski, 2008; Saumure & Given, 2008]) or theoretical saturation (i.e., occurring when the qualitative researcher can assume that her/his emergent theory is sufficiently developed to fit any future data collected [Sandelowski, 2008]). Further, the non-use of nonverbal communication data could prevent the attainment of one or more of the following three levels of saturation identified by Nelson, Onwuegbuzie, Wines, and Frels (2013): *within-interview saturation* (i.e., referring to the degree to which data from any single focus group interview reached saturation), *across-interview saturation* (i.e., the degree that saturation occurred across all the interviews conducted on a single participant), or *across-participant saturation* (i.e., the degree that saturation occurred across all the interviews conducted on all the participants in the study).

Qualitative researchers have access to several typologies pertaining to nonverbal communication. In particular, Gorden's (1980) typology of nonverbal communication could be used. This typology comprises the following indicators: kinesics (i.e., behaviors characterized by body displacements and postures), proxemics (i.e., behaviors indicating special relationships of the interviewees/interviewers), chronemics (i.e., temporal speech markers such as silences and hesitations), and paralinguistics (i.e., behaviors associated with strength, tenor, or emotive color of the vocal expression). Another useful typology is Ekman's (1999) *Neurocultural Model of Facial Expression*. Ekman's (1999) model is based on his finding of 15 fundamental emotions that are associated with innate facial expressions. These emotions are tailored through learning what are called *display rules*, which represent norms that guide how emotion is expressed in various social contexts and that vary within

and among cultures (Bull, 2001). These 15 emotions are as follows: amusement, anger, contempt, contentment, disgust, embarrassment, excitement, fear, guilt, pride in achievement, relief, sadness/distress, satisfaction, sensory pleasure, and shame. According to Ekman (1999), these 15 emotions are unique from each other in the following seven ways: (a) distinctive universal signals; (b) distinctive physiology; (c) automatic appraisal, turned to: (d) distinctive universals in antecedent events; (e) distinctive appearance developmentally; (f) presence in other primates; (g) quick onset; (h) brief duration; (i) unbidden occurrence; (j) distinctive thoughts, memories, images; and (k) distinctive subjective experience.

Another useful typology is McNeill's (1992) *Classification Scheme of Five Gestures*. McNeill (1992) conceptualized the following types of gestures: iconics, metaphorics, beats, deictics, and emblems. According to McNeill (1992), the gesture type labeled as iconics pertains to gestures that simulate movements or portray movements or objects, such as clenching the fist and punching the air while stating, *the boy celebrated his accomplishment* when describing the actions of a boy who had just been notified that he has passed his mathematics examination. The orientation of the gesture associated with a word(s)/phrase(s) also provides useful nonverbal information. In our aforementioned example, an interviewee could describe the level of excitement displayed by the boy in several ways—for instance, by emphasizing via the tightness of the clenched fist, the vigor with which the air is punched, the length of time the gesture is utilized, and so forth. As noted by Onwuegbuzie, Dickinson, Leech, and Zoran (2010), additional meaning can be communicated via gestures that indicate the storyteller's frame of reference. Using the air-punching scenario, for example, the interviewee could illustrate the action of the boy using an emic (i.e., insider's) view (i.e., taking on the role of the boy by using the whole body) or an etic (i.e., outsider's) view (i.e., as an observer of the event by using only a part of the body such as the fist). Consequently, as contended by McNeill (1992), iconic nonverbal gestures are especially useful for extracting meaning inasmuch as they "cannot help but expose the relevant dimensions of the speaker's thought . . . .[and] . . . they are the closest look at the ideas of another person that we, the observers can get" (pp. 132–133).

Similar to iconic gestures, metaphoric gestures primarily are visual in nature. However, unlike iconic gestures, they characterize abstract ideas, thoughts, perceptions, or concepts, and, unlike iconic gestures, metaphoric gestures typically do not involve using the whole or large portions of the body. For example, the phrase (i.e., idiom), "her heart was broken," could be portrayed by an interviewee by clenching her/his heart metaphorically to indicate the *broken heart*.

Like metaphoric gestures, beats refer to abstract ideas that differentiate words or phrases from other words/phrases. McNeill (1992) explained that a beat can function metapragmatically by depicting the word/phrase it accompanies as being important not only in terms of its semantic content in terms of its discourse-pragmatic content. Examples of beats include repetitive side-to-side or up-and-down movements of a finger, hand, and/or head.

Deictics represent an abstract level of pointing—specifically, a pointing to ideas and concepts depicted in a metaphorical space. These gestures help interviewees to keep track of thoughts

expressed and stories told during the course of the interview. For instance, in a focus group interview, an interviewee might use gestures (e.g., rapid circling of a hand) to direct the conversation back to an earlier idea expressed. Abstract pointing also might be used to indicate that the focus group participant is ending his speech and turning it over to another focus group member or the interviewer (McCafferty, 1998).

Finally, emblems represent the traditional notion of gestures that have specific cultural meaning. An example of an emblem is the nodding of the head up and down in Western countries and the moving of the eyes up and down in Kenya to indicate agreement with a response.

Yet another nonverbal behavior typology is Krauss, Chen, and Chawla's (1996) *Typology of Nonverbal Behaviors*. Krauss et al. (1996) conceptualized nonverbal communication as lying on a continuum of lexicalization anchored by adapters and symbolic gestures. Adapters, which lie at the low lexicalization end of the continuum, refer to nonverbal communication behaviors that tend not to represent meaningful gestures including movement of an object such as clothing or jewelry. In contrast, symbolic gestures reside at the high lexicalization end of the continuum such as hand gestures (e.g., thumbs up) and facial expressions that represent conventional and popularized meanings associated with a specific cultural group (cf. Ricci Bitti & Poggi, 1991). Lying between these two ends of the lexicalization continuum (i.e., adapters and symbolic gestures) are conversational gestures, which are nonverbal behaviors that accompany speech which appear to be connected to the speech that they accompany, and which manifest themselves in the following three ways: (a) unlike symbolic gestures, they do not occur in the absence of speech; (b) unlike adapters, they are related, at least to some degree, to the semantic content of the speech that they accompany; and (c) they are temporally coordinated with speech.

Although, as can be seen, several typologies exist for assessing nonverbal communication data, these typologies typically are not presented in qualitative research textbooks. Thus, qualitative researchers have very little guidance—at least from qualitative research textbooks, articles, and other works—for collecting, analyzing, and interpreting nonverbal communication data. Yet, these data are extremely qualitative in nature because they necessitate an in-depth understanding of human behavior and challenge qualitative researchers to investigate the *why* and *how* of these nonverbal communication behaviors and not just the what, when, where. Further, techniques that are used by qualitative researchers for improving the quality of data and inferences made that stem from verbal data—such as member checking (cf. Manning, 1997)—are applicable for improving the quality of data and inferences made that stem from nonverbal communication data.

To this end, the purpose of the remainder of this article is to provide a framework for collecting, analyzing, and interpreting nonverbal communication behavior. This framework yields guidelines for students to collect, to analyze, to interpret, and to report nonverbal communication data. After providing this framework, we present an exemplar for reporting nonverbal communication data.

Conceptual Framework

Building on Leech and Onwuegbuzie's (2013) 13-step process for qualitative research, we have developed a 13-step process for collecting, analyzing, interpreting, and reporting nonverbal communication data alongside the collection, analysis, interpretation, and reporting of verbal data. This 13-step nonverbal communication process serves as a conceptual framework that we use in our qualitative research methodology courses to help students develop a *nonverbal communication way of thinking*. The 13-step nonverbal communication process occurs at the following three stages: (a) the *Conceptualization Stage* (i.e., determine the goal of using nonverbal communication data, determine objective for using nonverbal communication data, explore the rationale for mixing verbal and nonverbal communication data, explore the purpose for mixing verbal and nonverbal communication data, and determine research question[s] that can be answered via the use of nonverbal communication data); (b) the *Planning Stage* (i.e., select the nonverbal communication sampling framework and nonverbal communication design); and (c) the *Implementation Phase* (i.e., collect nonverbal communication data, analyze nonverbal communication data, legitimate nonverbal communication data, interpret nonverbal communication data in the context of the verbal data and any other data analyzed, report the nonverbal communication data interpretations alongside the verbal data and any other data interpretations, and reformulate the nonverbal communication research question[s]). Rather than representing a linear process, the nonverbal communication methodological steps within each stage and across stages are interactive and recursive. This 13-step qualitative research process is illustrated in Figure 1. Each of these steps will be discussed in the following sections.

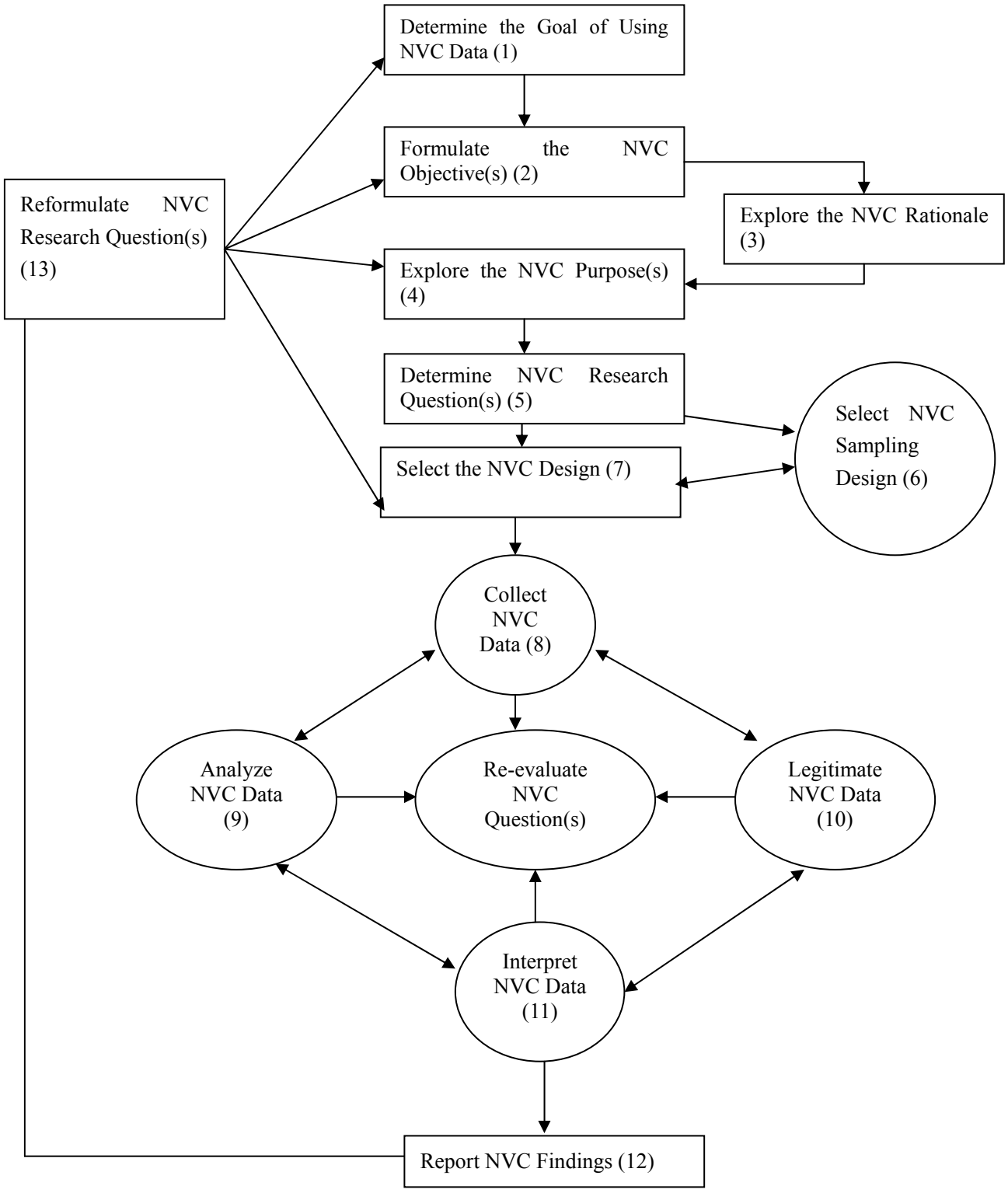


Figure 1. Qualitative methodological framework guiding the collection, analysis, interpretation, and reporting of nonverbal communication (NVC) data

Adapted from "The qualitative research process," by Nancy L. Leech and Anthony J. Onwuegbuzie, 2013. Copyright 2013 by Nancy L. Leech and Anthony J. Onwuegbuzie.

Step 1: Determine the Goal of Using Nonverbal Communication Data

Identifying interview philosophy. Determining the goal of using nonverbal communication data involves making three sets of decisions. First and foremost, the qualitative researcher should determine the philosophical assumptions and stances underlying the planned interview. We use Roulston's (2010) typology for conceptions of qualitative interviews. Roulston's typology comprises the following six conceptions: neo-positivist, romantic, constructionist, postmodern, decolonizing, and transformative. According to Roulston (2010), a major theoretical assumption of the neo-positivist conception of interviewing is that by taking a neutral role in the interview process, using open and non-leading questions, and not expressing her/his own experiences and perceptions about the research topic, the interviewer can minimize or even avoid influencing the interviewee's responses (i.e., the interviewee's voice). Another central assumption is that neo-positivist interviewers are able to access the interviewee's authentic self. Thus, adopting a neo-positivist conception of interviewing does not prevent the qualitative researcher from collecting, analyzing, and interpreting nonverbal communication data. However, qualitative researchers adopting this philosophical stance are more likely to focus on counting incidences of nonverbal communication data and comparing and contrasting these counts to the verbal data—although this use of nonverbal communication data likely is not as rich as how qualitative researchers representing other stances might use nonverbal communication data. Notwithstanding, using nonverbal communication data in a post-positivist way likely would put the qualitative researcher in a better position for meaning making.

In contrast, the romantic conception of the interview "generate[s] the kind of conversation that is intimate and self-revealing" that "lead[s] the interviewer to establish rapport and empathic connection with the interviewee in order to produce intimate conversation between the IR [interviewer] and IE [interviewee] in which the IR plays an active role" (Roulston, 2010, p. 217). A major theoretical assumption of the romantic conception is that through the development of rapport, the interviewer can obtain an accurate understanding of the interviewee's experiences and perspectives about the research topic. Moreover, like the neo-positivist conception of interviewing, romantic interviewers are able to access the interviewee's authentic self. The qualitative researcher who adopts a romantic conception of the interview is likely to be comfortable with the fact that an intimate and self-revealing conversation likely would directly affect participants' nonverbal behaviors. Nevertheless, at the very least, nonverbal communication data (e.g., proxemics) can be used as a validation that the conversation is indeed intimate and self-revealing.

The constructionist conception of interviewing is based on the theoretical assumption that knowledge is co-constructed by both the interviewer and interviewee "to generate situated meanings and possible ways of talking about research topics" (Roulston, 2010, p. 218). Further, unlike neo-positivist and romantic conceptions of interviewing, in constructionist interviews, interviewers should not be able to access the interviewee's authentic self. Qualitative researchers adopting a constructionist conception of interviewing could use nonverbal communication data to enhance their co-construction of knowledge.

The postmodern conception of the interview is based on the premise that "representations of findings are always partial, arbitrary, and situated, rather than unitary, final, and holistic" (Roulston, 2010, p. 220). This conception involves the interviewer not attempting to obtain a comprehensive account of the underlying experience, perception, or the like, but rather attempting "to open up spaces for new ways of thinking, being, and doing" (Roulston, 2010, p. 220). As is the case for the constructionist conception, in postmodern interviews, interviewers should not be able to access the interviewee's authentic self. Rather, the interview data represent situated performances of selves that are co-constructed by interviewer and interviewee. As is the case for constructionist conception of interviewing, qualitative researchers adopting a postmodern conception of interviewing could use nonverbal communication data to enhance their co-construction of knowledge.

The goal of the decolonizing conception of interviewing is to "contribute to restorative justice for indigenous communities" (Roulston, 2010, p. 214). Another goal is to contribute to "the agendas of decolonization, transformation, mobilization and healing of indigenous peoples" (Roulston, 2010, p. 214). In these interviews, the interviewee and interviewer co-generate the type of conversation that is valued by a particular indigenous community. According to Roulston (2010), the interviewer takes into account her/his knowledge of the indigenous community's customs, practices, beliefs, and the like in designing the interview. The interview data are presented in respectful ways by the researcher for the good of the community studied and in ways that are accessible to the community members. Qualitative researchers adopting a decolonizing conception of interviewing, at the very least, could use nonverbal communication data as a legitimation check for ensuring that they are presenting verbal data in respectful ways.

Finally, the goal of the transformative conception of interviewing is "to challenge and change the understandings" of the interviewees (Roulston, 2010, p. 220). Transformative interviewers aim to promote emancipatory and social justice. In particular, the interviewer's intent is to transform the interviewer's life by "opening up new subjective possibilities" (Roulston, 2010, p. 220). During these interviews, the interviewer and interviewee "develop 'transformed' or 'enlightened' understandings as an outcome of dialogical interaction" (Roulston, 2010, p. 220); and in which the relationship between the interviewer and interviewee is "less asymmetrical, with 'transformative dialog' enacted in the interview interaction" (Roulston, 2010, p. 221). Among other elements, nonverbal communication data could be used as a legitimation check for assessing the extent to which the interviewees display their transformation. Thus, as can be seem regardless of the conception of interview adopted, qualitative researchers can enhance meaning making by collecting, analyzing, and interpreting nonverbal communication data in the context of the verbal data.

Identifying the study goal. The second set of decisions to be made regarding the goal of incorporating nonverbal communication data involves identifying the study goal. Newman, Ridenour, Newman, and DeMarco's (2003) typology can be used to identify this goal. These authors identified nine types of goals: (a) predict; (b) add to the knowledge base; (c) have a personal, social, institutional, and/or organizational impact; (d) measure change; (e) understand complex phenomena; (f) test new ideas; (g) generate new ideas; (h) inform

constituencies; and (g) examine the past. These goals are not only applicable to verbal data but also to nonverbal communication data. In fact, combining verbal and nonverbal communication data likely would place qualitative researchers in a better position to meet each of these nine goals.

Identifying the generalization goal. Onwuegbuzie, Slate, Leech, and Collins (2009) have identified five major types of generalizations that researchers can make, as follows: (a) *external (statistical) generalizations* (i.e., making generalizations, inferences, or predictions on data obtained from a representative statistical (i.e., optimally random) sample to the *population* from which the sample was selected), (b) *internal (statistical) generalizations* (i.e., making generalizations, inferences, or predictions on data obtained from one or more representative or elite participants [e.g., key informants, politically important cases, sub-sample members]), (c) *analytic generalizations* (i.e., "applied to wider theory on the basis of how selected cases 'fit' with general constructs" [Curtis, Gesler, Smith, & Washburn, 2000, p. 1002]), (d) *case-to-case transfer* (i.e., making generalizations or inferences from one case to another [i.e., similar] case [Firestone, 1993; Kennedy, 1979; Miles & Huberman, 1994]), and (e) *naturalistic generalizations* (i.e., the readers of the article make generalizations entirely, or at least partly, from their personal or vicarious experiences [Stake, 2005], such that meanings arise from personal experience, and are modified and reified by repeated encounter [Stake, 1980; Stake & Trumbull, 1982]). In qualitative research, the most common type of generalization used are analytic generalizations, followed by case-to-case transfer and internal statistical generalizations. As noted earlier, collecting, analyzing, and interpreting nonverbal communication data alongside verbal data leads to thicker descriptions and interpretations, which, in turn, increases the ability for the qualitative researcher to reach saturation and, hence, to facilitate all three forms of generalizations. Also, reporting nonverbal communication data allows readers better to assess the extent to which they can make naturalistic generalizations because they can compare the nonverbal behaviors of the interviewees to what they expect their nonverbal behaviors would have been.

Step 2: Determine the Objective of Using Nonverbal Communication Data

As described by Johnson and Christensen (2010), there are at least five objective(s) for using nonverbal communication data, as follows: (a) exploration (i.e., using nonverbal communication data to understand better an idea, issue, and the like, which then leads to hunches, hypotheses, inferences, or generalizations); (b) description (i.e., using nonverbal communication data to identify and to describe the antecedents, correlates, and/or the nature of the phenomena); (c) explanation (i.e., using nonverbal communication data to develop or to expand a theory in order to understand better the phenomena); (d) prediction (i.e., using nonverbal communication data to help the researcher forecast future events via the use of prior knowledge); and (e) influence (i.e., using nonverbal communication data to manipulate a variable or to construct for the purpose of producing an outcome).

Steps 3 and 4: Explore the Rationale and Purpose for Using Nonverbal Communication Data

As noted and explained previously, there are five rationales for incorporating nonverbal data,

as follows: triangulation, complimentarity, development, initiation, and expansion. The purpose for incorporating nonverbal data that represent specific strategies used include the following: clarification, juxtaposition, discovery, confirmation, emphasis, illustration, elaboration, corroboration/verification, and effect.

Table 2 presents examples provided by Denham and Onwuegbuzie (2013) of the purpose for using nonverbal communication data in articles published in *The Qualitative Report* between 1990 and 2012.

Table 2. Purpose for Using Nonverbal Communication Data in Articles Published in The Qualitative Report: 1990-2012

Purpose	Example
Clarification	The **tone of her answers** and the fact that she chose **the time of this interview to glue the photos on the album -** I had booked all appointments with her three weeks in advance - was significant. I read this action as a portrayal of subversion and hostility against the interview and what I represented for her.
Juxtaposition	When you were in school, what was your sense of your own ethnicity? Aldo: To tell you the truth, I have never had any ideas (...) And there was something on TV and I was like "Senad, isn't that a Serbian name?" **(Laughs)** I mean**...(rolls his eyes)** Maja: (Smiles) My mom, it probably crossed her mind, well, my son, it is not. When I think about it now, I can only imagine what had crossed her mind, they are searching for my son in the war, and he can't even differentiate the names.
Discovery	When I revisited the tape of this part of our conversation, I heard definite **lack of enthusiasm** in Tammi's voice. Unfortunately, (or perhaps fortunately) I was oblivious to this at the time, and we proceeded with the activity.
Confirmation	The **pacing of some subjects' responses** also suggested examination of what they were saying in the moment. Kei Huik in particular spoke in exceptionally **well considered** phrases with **long pauses** in between his sentences.
Emphasis	Paula: "No, I don't want to" [Paula **starts shaking her head side to side** as a nonverbal sign for the word no. She continues shaking side to side and refuses to stop and look at Mrs. Cole.]
Illustration	He got married soon; his wife wore that (circles around his head to describe the headscarf).
Elaboration	You don't even want to be in the room when Plastic Surgery and ENT go over who gets to do facelifts **(Laughs)** I mean blood flows in the halls.
Complementarity	Interpreting the covert here-and-now behaviour, it became clear that diversity in the organization was filled with extreme levels of anxiety which were manifested in all kinds of defensive behaviours. When these data are added to the verbatim focus group information, the research results become extremely rich and add comprehensible colour to the empirical data.
Effect	Joan, the receptionist, "I just love Sophia. She's a good girl, isn't she? Aren't you Sophia? in a **sing-song, child-like voice.**
Corroboration/ Verification	John: I used to play basketball when I was still a student. I was in the school basketball team. But it is all different now. John then **dropped his head**, focusing on his affected limb. This body language indicated that he still had not accepted his disabilities.

Adapted from "Beyond words: Using nonverbal communication data in research to enhance thick description and interpretation," by M. A. Denham and Anthony J. Onwuegbuzie, in press. Copyright 2013 by Magdalena Denham.

Step 5: Determine the Nonverbal Communication Research Questions

Although in the vast majority of cases, questions surrounding nonverbal communication do not represent the primary research question, at the very least, they represent procedural questions, which are sub-questions that direct the integration of the verbal and nonverbal communication data. For example, the qualitative researcher might ask questions such as the following: (a) To what extent are the nonverbal communication data consistent with the verbal data? (b) To what extent are there contradictions between the nonverbal communication data and the verbal data? and (c) To what extent do the nonverbal communication data help to clarify the verbal data?

Step 6: Select the Nonverbal Communication Sampling Design

The nonverbal communication sampling design involves making a decision about the number of participants from which the researcher should collect nonverbal communication data (i.e., sample size). Further, it involves making a decision about how much nonverbal communication data should be collected from each participant of interest (i.e., sampling scheme). The sampling design is directly related to the type of generalization of interest to the researcher (cf. Step 1).

Step 7: Select the Nonverbal Communication Design

Selecting the nonverbal communication design involves choosing one or more typologies from the existing nonverbal communication typologies. These typologies include those that were mentioned previously: Ekman's (1999) Neurocultural Model of Facial Expression, McNeill's (1992) Classification Scheme of Five Gestures, and Krauss et al.'s (1996) Typology of Nonverbal Behaviors. A qualitative researcher can choose to use as many of these designs as desired.

Step 8: Collect Nonverbal Communication Data

At this stage, the qualitative researcher decides the instruments that will be used to collect the nonverbal communication data. For example, the researcher might collect nonverbal communication data via the use of audio- or video-recording. Other forms of data collection include using checklists, matrices, or Venn diagrams. For example, Figure 2, Figure 3, and Figure 4 provide examples of matrices. Figure 2 provides a matrix for assessing nonverbal communication using Krauss et al.'s (1996) typology of nonverbal behaviors and Ekman's (1999) expanded list of basic emotions. Figure 3 provides a matrix for assessing nonverbal communication using McNeil's (1992) classification of gesture and Ekman's (1999) expanded list of basic emotions. Figure 4 represents a matrix for assessing level of consensus in focus groups. In contrast, Figure 5 displays a Venn diagram showing an example for comparing the response patterns of the male (m) and female (f) focus group members for two interview questions.

Emotion	Adapters	Lexical Movements	Symbolic Gestures
Amusement			
Anger			
Contempt			
Contentment			
Disgust			
Embarrassment			
Excitement			
Fear			
Guilt			
Pride in achievement			
Relief			
Sadness/distress			
Satisfaction			
Sensory pleasure			
Shame			

Figure 2. Matrix for Assessing Nonverbal Communication Using Krauss, Chen, and Chawla's (1996) Typology of Nonverbal Behaviors and Ekman's (1999) Expanded List of Basic Emotions

Adapted from "Toward more rigor in focus group research in stress and coping and beyond: A new mixed research framework for collecting and analyzing focus group data," Anthony J. Onwuegbuzie, Wendy B. Dickinson, Nancy L. Leech, and Annmarie G. Zoran, 2010, *Toward a broader understanding of stress and coping: Mixed methods approaches*, p. 254. Copyright 2010 by Information Age Publishing.

Emotion	Iconics	Metaphorics	Beats	Deictics	Emblems[b]
Amusement					
Anger					
Contempt					
Contentment					
Disgust					
Embarrassment					
Excitement					
Fear					
Guilt					
Pride in achievement					
Relief					
Sadness/distress					
Satisfaction					
Sensory pleasure					
Shame					

[a] This matrix incorporates McNeil's (1992) classification of gesture and Ekman's (1999) expanded list of basic emotions.

[b] Emblem gestures can be subdivided into elements such as Finger Pointing, Head Nod, Head Shake, Shoulder Shrug, and so forth.

Figure 3. Matrix for Assessing Nonverbal Communication Using McNeil's (1992) Classification of Gesture and Ekman's (1999) Expanded List of Basic Emotions

Adapted from "Toward more rigor in focus group research in stress and coping and beyond: A new mixed research framework for collecting and analyzing focus group data," Anthony J. Onwuegbuzie, Wendy B. Dickinson, Nancy L. Leech, and Annmarie G. Zoran, 2010, *Toward a broader understanding of stress and coping: Mixed methods approaches*, p. 253. Copyright 2010 by Information Age Publishing.

Focus Group Question	Member 1	Member 2	Member 3	Member 4	Member 5	Member 6
1						
2						
3						
.....						

The following notations are entered in the cells:

A = Indicated agreement (i.e., verbal or nonverbal)

D = Indicated dissent (i.e., verbal or nonverbal)

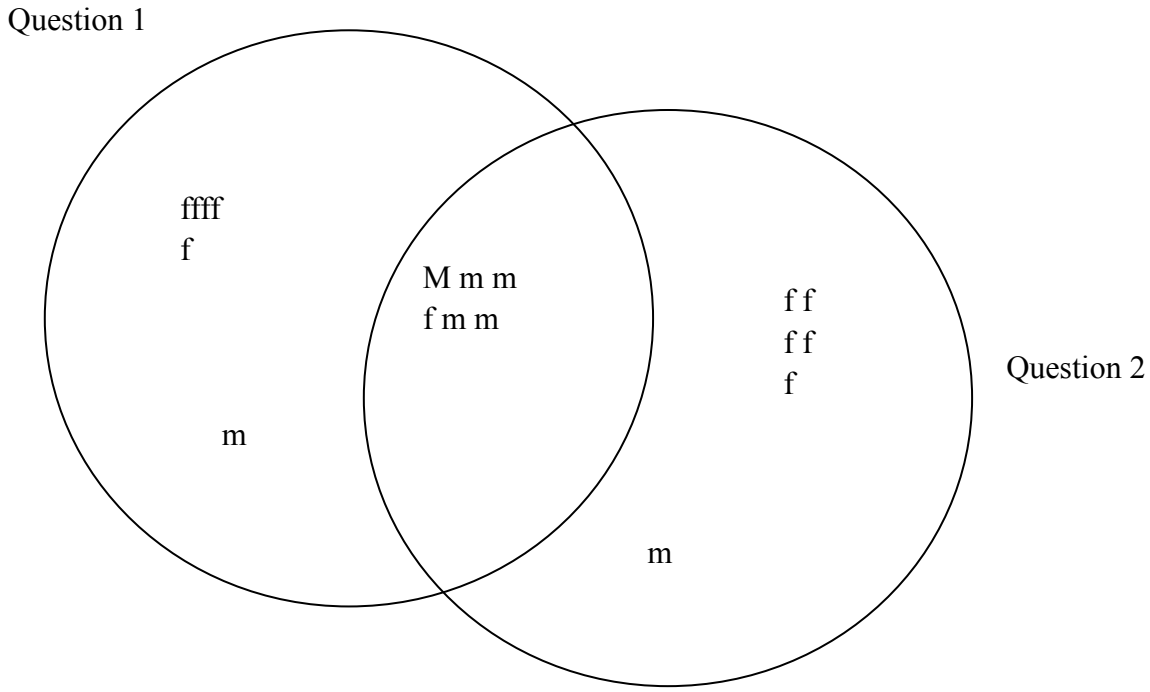
SE = Provided significant statement or example suggesting agreement

SD = Provided significant statement or example suggesting dissent

NR = Did not indicate agreement or dissent (i.e., non-response)

Figure 4. Matrix for assessing level of consensus in focus groups

Adapted from "Toward more rigor in focus group research: A new framework for collecting and analyzing focus group data," Anthony J. Onwuegbuzie, Wendy B. Dickinson, Nancy L. Leech, and Annmarie G. Zoran, 2009, *International Journal of Qualitative Methods*, p. 8. Copyright 2009 by Anthony J. Onwuegbuzie.



The focus group contains six males (m) and six females (f) . The capital letters denote the person who responded to the question first. Here, the same male responded to both questions first. Also, five of the males responded to both questions, as shown by the elements in the intersection, whereas only one female responded to both questions. From this Venn Diagram representation, the researcher might conclude that males were denominating the discussion pertaining to the first two questions. This diagram can be extended to monitor the response patterns for more than two questions. Also, a Venn Diagram can be used to monitor other demographic information

Figure 5. Venn Diagram comparing the response patterns of the male (m) and female (f) focus group members for the first two questions

Adapted from "Toward more rigor in focus group research: A new framework for collecting and analyzing focus group data," Anthony J. Onwuegbuzie, Wendy B. Dickinson, Nancy L. Leech, and Annmarie G. Zoran, 2009, *International Journal of Qualitative Methods*, p. 12.

Step 9: Analyze Nonverbal Communication Data

Qualitative coding. With respect to coding, as mentioned earlier, Denham and Onwuegbuzie (2013) has conceptualized that at least five types of coding be used for nonverbal communication coding: (a) *corroborate coding* (i.e., applying codes whenever nonverbal communication data converge with or are consistent with verbal data [e.g., an interviewee stating that a certain experience made him angry and, while talking, his fist is clenched, and his lips are tensed and thinned, his lower eyelids are tensed and straightened, the eyebrows are pulled down and together that cause wrinkles in the glabella, and the upper eyelid is raised, causing a glaring look]); (b) *capture coding* (i.e., applying codes whenever nonverbal communication data elaborate, enhance, depict, and/or clarify the results stemming from verbal data); (c) *discover coding* (i.e., applying codes whenever nonverbal communication data contradict the verbal data that might lead to a re-framing of the research question[s], issue subquestion[s] [addressing the major concerns and complexities to be resolved], topic subquestion[s] [arising from a need for information for the description of the participant], or procedural questions [that direct the integration of the verbal and nonverbal communication data]); (d) *broaden coding* (i.e., applying codes whenever nonverbal communication data broaden the scope of the understanding emanating from the verbal data); and (e) *new directions coding* (i.e., applying codes whenever nonverbal communication data provide additional insights to those gleaned from the verbal data).

Qualitative data analysis approaches. As noted by Denham and Onwuegbuzie (2013), in using the phrase *qualitative data analysis approaches*, we distinguish the word *approaches* from the words *techniques* and *strategies.* By *approaches*, we are referring to data analyses that represent whole qualitative data analysis systems—most of which 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 originated from ethnographic research (Spradley, 1979). After conducting an exhaustive review of the literature, Onwuegbuzie and Denham (in press) identified 34 qualitative data analysis approaches that they believe represent the realm of formal qualitative data analysis approaches. As noted by Denham and Onwuegbuzie (2013), incorporation of the analysis of nonverbal data potentially can complement any of these 34 qualitative data analysis approaches. However, there are some qualitative analyses that can particularly lend themselves to analyzing nonverbal communication data. These analyses include conversation analysis (i.e., using the behavior of speakers to describe people's methods for producing orderly social interaction), latent content analysis (i.e., uncovering the underlying meaning of text), interpretive phenomenological analysis (i.e., analyzing in detail how one or more individuals, in a given context, make sense of a given phenomenon—often representing experiences of personal significance [e.g., major life event]), and dialogical narrative analysis (i.e., assessing the communicative act situated within an exact historical realization and based on the assumption that every individual dialogic interaction represents an interaction between two specific ideological horizons of which the individuals are representatives). An example of the use of conversation analysis to analyze nonverbal communication data now follows.

Conversation analysis. Conversation analysis was developed in the 1960s by Harvey Sacks, Emmanuel Schegloff, and Gail Jefferson (Sacks, Schegloff, & Jefferson, 1974; Schegloff, 1968, 1972). This qualitative data analysis approach represents an analytical technique for describing people's methods for producing orderly social interaction when engaged in a formal conversation (e.g., educational settings, hospitals, courtrooms). The goal of conversation analysis is to focus on what participants do in conversation, such that the behavior of speakers provides the major source of data (Heritage, 1984). Conversation analysis is especially concerned with several components of talk, including the following: (a) turn-taking and repair, (b) adjacency pairs, (c) preliminaries, (d) formulations, and (e) accounts. Turn-taking and repair refer to how a speaker connects a turn to a previous turn (e.g., "OK," "Uh-Huh"), what the turn accomplishes with respect to the interaction (e.g., a question, an endorsement), and how the turn relates to a subsequent turn (e.g., via a question, directive, request). A *transition relevance place* (Sacks et al., 1974) marks the moment in a conversation when a transition from one speaker to another speaker can take place. This transition prevents chaos and makes turn-taking context free. When turn-taking violations prevail (e.g., more than one person speaking simultaneously), *repair mechanisms* occur (e.g., one speaker suddenly stops speaking before a typically possible completion point of a turn). Thus, turn-taking provides speakers with a motivation to listen, to understand the utterances, and to display understanding. Adjacency pairs refer to sequentially paired actions that depict the generation of a reciprocal response. These actions normatively occur adjacent to each other and stem from different speakers. Preliminaries are used to assess the situation before performing some action, providing a way for the speaker to ask a question indirectly in an attempt to decide whether the question should be asked directly. Formulations represent a summary of what another speaker has stated. Finally, accounts represent the ways in which people explain actions such as apologies, requests, excuses, disclaimers, and denials (Silverman, 2001). As posited by Denham and Onwuegbuzie (2013), the collection, analysis, and interpretation of nonverbal communication data explicitly can enhance the analysis and interpretation of turn-taking and repair, adjacency pairs, preliminaries, formulations, and accounts, as well as other behaviors of speakers. For instance, a researcher can examine turn-taking and repair more deeply by paying attention to kinesics, proxemics, chronemics, and paralinguistics (Denham & Onwuegbuzie, 2013). More specifically, body movements (i.e., kinesics), silences and hesitations (i.e., chronemics), and tone and pitch of voice (i.e., paralinguistics) can be used to assess further how the speakers involved in a conversation repair turn-taking violations.

Qualitative data analysis techniques. By *techniques*, we are referring to data analyses that represent *part* of a system. An example of data analysis techniques that can be used to analyze nonverbal data is the class of analyses conceptualized by Miles and Huberman (1994). Indeed, Miles and Huberman (1994) described 19 within-case analyses (see Table 3) and 18 cross-case analyses (see Table 4). Each of these 37 qualitative data analysis techniques can be used to analyze some aspect of nonverbal communication data. For instance, the following within-case analyses can be conducted: (a) activity records, wherein a specific recurring nonverbal behavior is displayed that is limited narrowly in time and space; (b) role-ordered matrix, in which the participant's roles (e.g., school teacher, lawyer, husband,

wife) are mapped by sorting data in rows and columns that have been collected from or about a set of data that reflect nonverbal behaviors; and (c) conceptually clustered matrix, wherein a text table with rows and columns are arranged to cluster nonverbal and verbal behaviors that are related theoretically, thematically, or empirically. Further, the following cross-case analyses can be conducted: (a) partially ordered meta-matrix, wherein nonverbal communication data are displayed for each of several cases simultaneously; (b) case-ordered descriptive meta-matrix; in which nonverbal communication data are contained from all participants but the participants are ordered by the nonverbal behavior of interest; (c) two-variable case-ordered meta-matrix, wherein nonverbal communication data are displayed from all participants but the participants are ordered by two nonverbal behaviors of interest that are represented by the rows and columns; and (d) case-ordered effects matrix, in which participants are sorted by degrees of the major cause of interest, and shows the diverse effects on nonverbal behaviors for each participant.

Table 3. Miles and Huberman's (1994) Within-Case Displays

Type of Display	Description
Partially ordered:	
Poem	Composition in verse
Context chart	Networks that map in graphic form the interrelationships among groups and roles that underlie the context of individual behavior
Checklist matrix	Way of analyzing/displaying one major concept, variable, or domain that includes several unordered components
Time-ordered:	
Event listing	Matrix or flowchart that organizes a series of concrete events by chronological time periods and sorts them into multiple categories
Critical incident chart	Maps a few critical events
Event-state network	Maps general states that are not as time-limited as events, and might represent moderators or mediators that link specific events of interest
Activity record	Displays a specific recurring activity that is limited narrowly in time and space
Decision modeling flowchart	Maps thoughts, plans, and decisions made during a flow of activity that is bounded by specific conditions
Growth gradient	Network that maps events that are conceptualized as being linked to an

	underlying variable that changes over time
Time-ordered matrix	Maps when particular phenomena occurred
Role-ordered:	
Role-ordered matrix	Maps the participant's "roles" by sorting data in rows and columns that have been collected from or about a set of data that reflect their views, beliefs, expectations, and/or behaviors
Role-by-time matrix	Maps the participant's "roles," preserving chronological order
Conceptually Ordered:	
Conceptually clustered matrix	Text table with rows and columns arranged to cluster items that are related theoretically, thematically, or empirically
Thematic conceptual matrix	Reflects ordering of themes
Folk taxonomy	Typically representing a hierarchical tree diagram that displays how a person classifies important phenomena
Cognitive map	Displays the person's representation of concepts pertaining to a particular domain
Effects matrix	Displays data yielding one or more outcomes in a differentiated manner, focusing on the outcome/dependent variable
Case dynamics matrix	Displays a set of elements for change and traces the consequential processes and outcomes for the purpose of initial explanation
Causal network	Displays the most important independent and dependent variables and their inter-relationships

Table 4. Miles and Huberman's (1994) Cross-Case Displays

Type of Display	Description
Partially ordered:	
Partially ordered meta-matrices	Display descriptive data for each of several cases simultaneously
Case-ordered:	
Case-ordered descriptive meta-matrix	Contains descriptive data from all cases but the cases are ordered by the main variable of interest
Two-variable case-ordered matrix	Displays descriptive data from all cases but the cases are ordered by two main variables of interest that are represented by the rows and columns
Contrast table	Displays a few exemplary cases wherein the variable occurs in low or high form, and contrast several attributes of the basic variable
Scatterplot	Plot all cases on two or more axes to determine how close from each other the cases are
Case-ordered effects matrix	Sorts cases by degrees of the major cause of interest, and shows the diverse effects for each case
Case-ordered predictor-outcome matrix	Arranges cases with respect to a main outcome variable, and provides data for each case on the main antecedent variables
Predictor-outcome consequences matrix	Links a chain of predictors to some intermediate outcome, and then illustrates the consequence of that outcome
Time-ordered:	
Time-ordered meta-matrix	Table in which columns are organized sequentially by time period and the rows are not necessarily ordered
Time-ordered scatterplot	Display similar variables in cases over two or more time periods
Composite sequence analysis	Permit extraction of typical stories that several cases share, without eliminating meaningful sequences
Conceptually ordered:	

Content-analytic summary table	Which allows the researcher to focus on the content of a meta-matrix without reference to the underlying case
Substructing	Permits the identification of underlying dimensions
Decision tree modeling	Displays decisions and actions that are made across several cases
Variable-by-variable matrix	Table that displays two major variables in its rows and columns ordered by intensity with the cell entries representing the cases
Causal models	Network of variables with causal connections among them in order to provide a testable set of propositions or hunches about the complete network of variables and their interrelationships
Causal networks	Comparative analysis of all cases using variables deemed to be the most influential in explaining the outcome or criterion
Antecedents matrix	Display that is ordered by the outcome variable, and displays all of the variables that appear to change the outcome variable

Thus, as can be seen, qualitative researchers have numerous qualitative data analysis approaches, techniques, and coding strategies with which to analyze nonverbal communication data. Whenever possible, as recommended by Leech and Onwuegbuzie (2007), researchers should use multiple data analysis techniques.

Step 10: Legitimize Nonverbal Communication Data

Many of the strategies used to legitimate data in qualitative research are applicable for validating nonverbal communication data. Using the framework of Onwuegbuzie and Leech (2007), these strategies include the following: prolonged engagement (i.e., collecting nonverbal communication data for a sufficient period of time to obtain data saturation), persistent observation (i.e., identifying the nonverbal behaviors that are most relevant to the phenomena under investigation and focusing on them extensively), triangulation (i.e., obtaining multiple corroborating evidence via multiple nonverbal behaviors or by comparing verbal and nonverbal communication data), leaving an audit trail (i.e., maintaining extensive documentation of nonverbal behaviors observed), member checking/informant feedback (i.e., systematically obtaining feedback about the nonverbal communication data from the participants themselves), weighting the evidence (i.e., giving more weight to nonverbal communication data that provide stronger evidence than those that provide weaker evidence), checking for representativeness of sources of data (i.e., checking that for each participant, the nonverbal communication data observed are representative of the population of nonverbal behaviors), checking for researcher effects/clarifying researcher bias (i.e., minimizing the effects of the researcher on each participant's nonverbal behaviors and the effects of each participant's nonverbal behaviors on the researcher), making contrasts/comparisons (e.g.,

comparing and contrasting the nonverbal behaviors of participants representing different cultural groups), theoretical sampling (i.e., following where the nonverbal communication data lead and not leading the nonverbal communication data and, hence, sampling from theory), checking the meaning of negative cases (i.e., examining carefully participants who do not fit the emergent theory), using extreme cases (i.e., using extreme cases to verify whether nonverbal behaviors that are absent/present in them is present/absent in other participants), ruling out spurious relations (i.e., examining whether a relationship an antecedent variable and nonverbal behavior appears to represent a causal link), replicating a finding (i.e., examining whether a nonverbal behavior is observed repeatedly), referential adequacy (i.e., utilizing audio or video recordings to establish the adequacy of narratives), following up surprises (i.e., reflecting on any unexpected findings stemming from nonverbal communication data, considering how to revise the theory in light of the unexpected finding, looking for evidence to support the revised theory), structural relationships (i.e., comparing and contrasting for consistency different data sets that contain nonverbal communication data), peer debriefing (i.e., using a person who is not part of the study to evaluate the nonverbal communication data and the ensuing interpretations), rich and thick description (i.e., collecting nonverbal communication data that are detailed and complete enough to maximize the researcher's ability to find meaning), the *modus operandi* approach (i.e., searching for clues as to whether or not these threats to legitimation took place), assessing rival explanations (i.e., ruling out alternative hypotheses), confirmatory data analyses (i.e., using replication qualitative studies to assess the replicability of nonverbal communication data), and effect sizes (i.e., using numeric data [e.g., counting themes] to assess the legitimation of themes extracted from nonverbal communication data). Again, we suggest that qualitative researchers consider using as many of these strategies as possible.

Step 11: Interpret Nonverbal Communication Data

An effective way of assessing the process of meaning making is via what is known as *interviewing the (interpretive) researcher* (Onwuegbuzie, Leech, & Collins, 2008) or *interviewing the investigator* (Chenail, 2011)—but more simply known as debriefing interviews (Onwuegbuzie et al., 2008). In the context of the collection, analysis, and interpretation of nonverbal communication data, a debriefing interview involves the researcher being interviewed by someone else to (a) develop greater awareness of and appreciation for the challenge of meaning making from nonverbal communication data; (b) identify personal feelings that come to the fore during the collection, analysis, and/or interpretation of nonverbal communication data; (c) identify perceptions that might bias the researcher in his or her interpretation of nonverbal communication data; (d) appreciate the vulnerability of each research participant and the ethical responsibility of the researcher promoting and maintaining nonmaleficence, beneficence, justice, and fidelity; and (e) identify a priori assumptions about the research participants (cf. Chenail, 2011). Further, debriefing interviews help the researcher to appreciate what it feels like to be a participant in the research study, which, in turn, can yield potentially more ethical and culturally responsive use of nonverbal communication data. Onwuegbuzie et al. (2008) developed a debriefing protocol comprising interview questions designed to promote reflexivity. As conceptualized

by these authors, the goal of a debriefing interview is:

> to help interpretive researchers to identify and to reflect on the degree to which their biases potentially might have influenced the various facets of the research study (e.g., formulating the research question, implementing data collection, and conducting analytical procedures), might have changed over the course of the investigation in general and interview process in particular, and might have affected interpretations of findings (i.e., interview data) and implications stemming from the findings (e.g., formulating analytical generalizations). In addition, debriefing interviews provide an opportunity for the researcher to evaluate initial hunches. (p. 3)

The process of nonverbal communication-based debriefing involves the researcher being interviewed—either synchronously (i.e., real-time interview) or asynchronously (e.g., email)—on one or more occasions by a *disinterested peer* who is knowledgeable about the qualitative research process, who possesses good interviewing skills, who understands the research topic, and who has at least some experience collecting, analyzing, and interpreting nonverbal communication data. Optimally, debriefing interviews are recorded (i.e., audiotaped or videotaped) and face-to-face to facilitate the collection of nonverbal communication data exhibited by the researcher during her/his interview(s).

As a guide, Onwuegbuzie et al. (2008) developed an array of open-ended debriefing interview questions that the debriefer could ask the researcher. These questions were categorized into two types: (a) questions based on researcher bias; and (b) questions based on Guba and Lincoln's (1989) five authenticity criteria that stem directly from naturalistic/constructivist assumptions, namely: fairness (i.e., relating to the thoughts, perceptions, feelings, concerns, assertions, concerns, and experiences of all stakeholders being represented in the text), ontological authenticity (i.e., the extent to which the constructions of the research participants have evolved in a meaningful way as a result of participation in the study), educative authenticity (i.e., the extent to which the individual research participants' "understanding of and appreciation for [but not necessarily agreement of] the constructions of *others* outside their stakeholding group are enhanced" [Guba & Lincoln, 1989, p. 248, italics in original]), catalytic authenticity (i.e., the extent to which the new constructions and appreciations of the position of others that have evolved during the course of the study lead to some action(s) taken or decision(s) made by the participants), and tactical authenticity (i.e., the extent to which participants and stakeholders are empowered to act on the increased understanding that emerged as a result of the study). Of particular relevance are questions pertaining to the researcher's depth of knowledge of nonverbal communication and the researcher's interpretation of nonverbal communication data.

Step 12: Reporting Nonverbal Communication Findings

As stated in the seminal document developed by the Task Force on Reporting of Research Methods in American Educational Research Association (AERA) Publications and adopted by the AERA Council in 2006, authors should be mindful of reporting criteria as described in the document "Standards for Reporting on Empirical Social Science Research in AERA Publications" (AERA Task Force on Reporting of Research Methods in AERA Publications,

2006). In this document, guidelines are provided that apply to reports of education research grounded in the empirical traditions of the social sciences. These standards have applicability to reporting nonverbal communication data. The standards state two overarching principles:

> • First, reports of empirical research should be *warranted*; that is, adequate evidence should be provided to justify the results and conclusions.
>
> • Second, reports of empirical research should be *transparent;* that is, reporting should make explicit the logic of inquiry and activities that led from the development of the initial interest, topic, problem, or research question; through the definition, collection, and analysis of data or empirical evidence; to the articulated outcomes of the study. (AERA Task Force on Reporting of Research Methods in AERA Publications, 2006, p. 33)

According to the standards, "Reporting that takes these principles into account permits scholars to understand one another's work, prepares that work for public scrutiny, and enables others to use that work" (AERA, 2006, p. 33). Thus, when writing up findings stemming from nonverbal communication data, researchers should make every effort to ensure a report that is warranted and transparent.

Step 13: Reformulating Nonverbal Communication Research Questions

Once the research report has been written, the role of the research question does not end. Instead, this step leads to the reformulation of the research question(s), issue subquestion(s) (addressing the major concerns and complexities to be resolved), topic subquestion(s) (arising from a need for information for the description of the participant), or procedural questions (that direct the integration of the verbal and nonverbal communication data), which, in turn, might lead to a reformulation of the goal of using nonverbal communication data (i.e., Step 1), objective for using nonverbal communication data (i.e., Step 2), the rationale for mixing verbal and nonverbal communication data (i.e., Step 3), and/or the purpose for mixing verbal and nonverbal communication data (i.e., Step 4) in subsequent qualitative research studies. Alternatively, the goal, objective, rationale, and purpose for using nonverbal communication data might stay intact, in which case, the reformulation of the research question or its elements (e.g., subquestions) directly leads to a reformulation of the nonverbal communication design (i.e., Step 5). Thus, in subsequent studies, Steps 5-11 are repeated until all research goals, objectives, purposes, and questions are adequately addressed.

Qualitative Research Course

The aforementioned 13-step nonverbal communication process is delineated during the *Conceptual/Theoretical Phase*—namely, Phase I—of our qualitative research course. Phase I lasts for approximately the first 4 weeks of a 16-week semester course. In Phase II, the *Technical Phase*, which lasts approximately from Weeks 5-7, we spend time showing students how to analyze nonverbal communication data with the aid of computer-assisted qualitative data analysis software program, specifically, QDA Miner Version 4.0.3 (Provalis Research, 2011). In Phase III, the *Applied Phase*, students apply what they have learned in Phase I and Phase II. Specifically, students apply what they have learned regarding the

following four techniques: (a) how to collect verbal and nonverbal communication data, (b) how to analyze verbal and nonverbal communication data, (c) how to interpret verbal and nonverbal communication data, and (d) how to write up findings resulting from integrating verbal and nonverbal communication. Because this is the most complex phase of the course, we will turn our attention to it.

Phase III: Applied Phase

Collecting nonverbal communication data.

Observations. From the first day of class, we demonstrate to students the utility of collecting, analyzing, and interpreting both verbal and nonverbal communication data. In fact, on the first day of class, students are assigned to groups of four to six students either at random or purposively (e.g., maximum variation sampling). Each group then is asked to visit a social location of their choice (e.g., restaurant, bar), and each member of the group is asked to observe independently the same setting for the same 30-minute period of time. As soon as possible afterwards—and before the next class meeting—each student is required to transcribe her/his field notes. Each student also is asked to conduct a thematic analysis of her/his transcribed data and, in turn, write a report of the findings. Students then submit their transcriptions and reports to the instructors (e.g., via email, Blackboard Discussion Boards). During the next class session, students read the transcriptions and reports of all members of their group and then compare and contrast them with their own reports. Next, each group of students is required to conduct a cross-case analysis of the individual transcripts and set of emergent themes across group members for the purpose of identifying emergent meta-themes and/or conducting what meta-ethnographers refer to as reciprocal translation of the transcriptions into a co-constructed understanding of what all the group members observed.

During the next class, a representative of each group, in turn, presents her/his group's interpretive synthesis of the transcriptions, which always promotes rich discussion in class. With this assignment, students are given a unique opportunity to compare and to contrast their reports to ascertain how their observations—especially their nonverbal communication observations—in the same time and space compare to the observations of the other students in their group, as well as to compare and to contrast various ways that students report their findings. After their presentations, we explore the nonverbal communication observations that they could have observed but failed to do so, which gives the instructors the opportunity to emphasize the importance of using all five senses when making observations.

Interviews. We provide students with hands-on experience with conducting interviews. In so doing, we demonstrate how to conduct various types of interviews, including structured interviews, semi-structured interviews, and unstructured interviews. Also, we discuss the concept of postmodern interviews wherein the interviewer and interviewee co-construct knowledge (Fontana & Frey, 2005). Further, we outline how to construct appropriate questions for each of these three interview formats, as well as how to determine an appropriate number of interview questions to ask in the time allotted for the interview. Indeed, the students actually obtain practice in co-constructing interview questions live in class on a topic of their choice. In addition, we illustrate to students how to conduct member checking

interviews (cf. Manning, 1997). Another component of interviews we teach them is how to transcribe interview responses in such a way that the transcriptions include documentation of nonverbal communication data using transcription conventions (cf. Schegloff, n.d.). A major component of our exposing students to effective interview practices is to provide students with a template for collecting nonverbal data during interviews, as we outlined throughout our 13-step nonverbal communication process.

Once we have completed our presentation of the interview process, the students then conduct real interviews in class using the questions they had co-constructed in a previous class session. Specifically, the students form pairs and, in a private location of their choice within the building where the class is held, each student interviews her/his dyad member during class time for between 30 and 45 minutes. Each interview is audio-recorded and/or video-recorded (using multiple recording devices as a back-up) with the interviewee's written permission. After conducting the interview, each student is required to transcribe verbatim the interview schedule of her or his dyad member prior to the next class meeting. The following week, after the interview data have been transcribed, all students then conduct member checks with their dyad members. These member-checking interviews also are audio-recorded and/or video-recorded. The member-checking interview responses then are transcribed before the next class meeting.

The following week, each student selects a different dyad member for the purpose of conducting debriefing interviews. Within each dyad, each student becomes both an interviewer of her/his new dyad member and an interviewee who is interviewed by this same dyad member. In these debriefing interviews, the interviewer asks questions regarding the interviewee's experiences and reflections conducting the interview and member-checking interview the previous 2 weeks. Each interviewer selects questions from the list of questions constructed by Onwuegbuzie et al. (2008) that tap the interviewer's background/experience; perceptions of the participant(s); perceptions of nonverbal communication; interpretations of interview findings; perceptions of how the study might have impacted the researcher; perceptions of how the researcher might have impacted the participant(s); awareness of ethical or political issues that might have arisen before, during, or after the interview(s); and/or identification of unexpected issues or dilemmas that emerged during the interview(s). Each interviewer also can select questions developed by Onwuegbuzie et al. (2008) that are based on Guba and Lincoln's (1989) five authenticity criteria that were describe previously (i.e., fairness, ontological authenticity, educative authenticity, catalytic authenticity, and tactical authenticity). The debriefing interview responses are transcribed and added to the interview data and member checking data for subsequent combined analysis.

Focus group interviews. In addition to providing students with individual interviewing skills, we teach students how to conduct focus group interviews. Using some of the frameworks described earlier (e.g., Ekman, 1999; Krauss et al., 1996; McNeill, 1992; Onwuegbuzie, Dickinson, et al., 2009, 2010), we illustrate how to collect, to analyze, and to interpret nonverbal communication data from focus group interviews. Then, we provide students the opportunity to apply what they learned about conducting focus groups by asking the students to co-construct questions together in class. Then, the students form groups of six to nine

(Krueger, 2000) or six to 10 participants (Langford, Schoenfeld, & Izzo, 2002; Morgan, 1997)—depending on the size of the class—and conduct a series of focus group interviews, with one student serving as moderator and one student serving as assistant moderator in each focus group. Each focus group is audio- or video-taped and is observed by the other students in the class, who then discuss and critique each other's focus group.

Analyzing and interpreting nonverbal communication data. In the previous section, we showed how we instill in our students the importance of collecting nonverbal communication data. With regard to the analyzing and interpreting nonverbal communication data, we require that our students write a series of what the instructors call *qualitative notebooks*, in which students use the latest version of QDA Miner (e.g., Provalis Research, 2011) or another computer-assisted qualitative data analysis software (CAQDAS) program to facilitate the analysis of verbal and nonverbal data that they had collected during the series of interviews (i.e., individual interview, member checking interview, and debriefing interview) using several qualitative analytic techniques. Specifically, using the frameworks of Leech and Onwuegbuzie (2007, 2008, 2011), students conduct and write-up findings that stem from the following analyses: word count, keywords-in-context, classical content analysis, constant comparison analysis, domain analysis, taxonomic analysis, componential analysis, and discourse analysis. Also, we encourage students to use a selection of Miles and Huberman's (1994) within-case and cross-case analyses. Each of these analyses then is written up formally in separate reports (i.e., qualitative notebooks) using American Psychological Association's (APA, 2010) style guide. Each qualitative notebook write-up contains the Method, Results, Discussion, and References sections of a research report, as well as tables, figures, and appendices (e.g., transcripts of the interviews and debriefing interviews, CAQDAS printouts).

We provide students with extensive feedback on their reports, using a detailed rubric developed by Onwuegbuzie (2013), which they can use to guide their subsequent write-ups. The rubric contains two components. The first components consists of a 5-point Likert-format scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree) that was designed to provide a score for the *content* of the qualitative notebook. This rubric contains 209 items that evaluate all components of the qualitative notebook (i.e., method, results, discussion, reference list, appendices) such that scores range from 209 to 1,045. In particular, this rubric contains several items that assess the degree to which the student has collected, analyzed, and interpreted nonverbal communication data. Sample nonverbal communication items are presented in Table 5.

Table 5. Sample Items Pertaining Nonverbal Communication Data from Content Section of Scoring Checklist for Qualitative Notebook

Sample Item	Item #	Section (Subsection)
It is made clear the extent to which proxemics data (e.g., physical distance between interviewer and interviewee) were collected during the each interview.	47	Method (Instruments)
It is made clear the extent to which chronemics data (i.e., use of pacing of speech and use of silence in conversation) were collected during the each interview.	48	Method (Instruments)
It is made clear the extent to which kinesics data (i.e., body movements or postures) were collected during the each interview.	49	Method (Instruments)
It is made clear the extent to which paralingusitics data (i.e., all variations in volume, pitch, and quality of voice) were collected during the each interview.	50	Method (Instruments)
Findings stemming from proxemics data were reported adequately.	139	Results
Findings stemming from chronemics data were reported adequately.	140	Results
Findings stemming from kinesics data were reported adequately.	141	Results
Findings stemming from paralinguistics data were reported adequately.	142	Results

The second component of the rubric, also comprising a 5-point Likert-format scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree), assesses the extent to which the qualitative notebook does not contain grammatical and typographical errors and is consistent with the guidelines of the *Publication Manual* of the APA (2010). This components contains 70 items, and the total scores range from 70 to 350. Scores from both components of the rubrics are converted into percentages. From these percentages, a final score is derived using the following weighting scheme: 60% for the content rubric and 40% for the writing style rubric. Thus, each qualitative notebook is scored on a 100-point scale. Further, we use the tracking feature of the Word processing software program to edit each student's qualitative notebook word by word and line by line. In addition, we use the

Comment feature of the Word processing software program to provide detailed feedback. Scoring each qualitative notebook assignment using this rubric takes between 2 and 3 hours per qualitative notebook. For the overwhelming majority of students, the quality of the write-ups increases as students write more qualitative notebook reports, until they reach maximum quality.

Exemplar

An exemplar of a qualitative notebook report is presented in Appendix A. This report was written by one of the authors of the present article when she was a doctoral student enrolled in the aforementioned qualitative research class. It can be seen from this exemplar that it write-up contains Method, Results, and Discussion sections. We would like to bring the reader's attention especially to the section entitled Nonverbal Communication, which is presented at the end of the Results section. This section contains more information about nonverbal communication data than do the overwhelming majority of the 299 qualitative empirical research articles that involved the use of interview(s), observations, focus group(s), dialogue, or any combination of these data collection techniques that was published in *The Qualitative Report* between 1990 and 2012.

Conclusions

As stated by Denham and Onwuegbuzie (2013):

> Indubitably, the non-use of nonverbal communication data in qualitative research studies and the qualitative phase(s) of mixed research studies, for the most part, represents an important error of omission. As such, a collective effort is needed to end this cycle of non-use—as has been the case for the vast majority of manuscripts submitted to *The Qualitative Report*—and, instead, create a culture of nonverbal communication data reporting that involves qualitative research and mixed research instructors, mentors, advisors, thesis/dissertation committee members and chairs/supervisors, authors, and journal editors. (p. 690)

In our class, we have attempted to take one step—however small—towards creating a culture of nonverbal communication data reporting among doctoral students at our institution. And by sharing and advancing our framework, we hope that it will provide ideas to other instructors of qualitative research courses, as well as chairs/supervisors, mentors, and others who play a role in helping students negotiate the dissertation process and beyond—namely, the path of emergent scholarship.

As documented by Denham and Onwuegbuzie (2013), the vast majority of authors of qualitative research articles (i.e., approximately 75%) do not provide any findings or interpretations stemming from the nonverbal behaviors exhibited by their study participants. This trend likely stems from the lack of emphasis on this very important form of data by textbook authors, journal editors, journal article reviewers, qualitative research instructors,

mentors, advisors, thesis/dissertation committee members and chairs/supervisors, and other gatekeepers of qualitative research methodologies. Indeed, the preliminary findings from Onwuegbuzie and Denham's (2013) qualitative investigation have revealed that a pervasive reason for the observed cycle of non-reporting of nonverbal communication data stems from the lack of exemplars of nonverbal communication data reporting that has served to establish a hidden curriculum to many qualitative researchers that the collection, analysis, interpretation, and eventual reporting of nonverbal communication data are not important. Yet, as seen from the exemplar of a qualitative notebook report presented in Appendix A, the collection, analysis, and interpretation of nonverbal communication data have great potential to increase verstehen. Onwuegbuzie and Denham (2013) also have documented that some qualitative researchers lack the confidence to incorporate findings stemming from nonverbal communication data into their empirical reports. As such, we urge authors of qualitative research textbooks and other qualitative methodological works (i.e., journal articles) not only to promote the collection, analysis, and interpretation of nonverbal communication data, but also to provide exemplars which illustrate that capturing the voice of participants adequately involves the capturing of *both* verbal and nonverbal data.

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Appendix A

Sample Qualitative Notebook Report

Experiences of a Doctoral Student: A Case Study

Obtaining a doctorate degree is by no means an easy process. In fact, depending on the field of study, attrition rates of doctoral students in the United States range between 30% to 50% (Bowen & Rudenstine, 1992; Lovitts, 2001) and the average time from baccalaureate to doctoral degree has risen to 19.4 years (Hoffer et al., 2001). However, the difficulty of earning this prestigious degree does not lie only within the tasks of learning the subject matter, composing papers, or publishing studies. For many graduate students, the true difficulty lies in the need to balance the numerous responsibilities they encounter in their daily lives (Maher, Ford, & Thompson, 2004). Women specifically cite delegating child-care responsibilities, managing life disruptions from divorce or death, and establishing financial security as top distractions from their academic pursuits (Maher et al., 2004). These obligations often lead female doctoral students to express serious concerns about stress, time pressures, emotional and psychological health, and lack of support systems (Moyer, Salovey, & Casey-Cannon, 1999).

Even with these concerns, more and more women are joining the ranks of doctoral candidates, with women earning nearly 45% of all the doctorates awarded in 2000 (Hoffer et al., 2001). In education, 65% of the doctorate degrees earned in 2000 were awarded to women (Hoffer et al., 2001). Because women are persisting in obtaining their doctoral degrees in spite of the challenges they face, it is not unreasonable to assume that there are positive results of pursuing a graduate degree. In fact, many students, both male and female, referenced personal development (e.g., increased confidence, self-fulfillment) and development of research skills (e.g., becoming more reflective and analytic, improving writing ability) as the reasons they continued their studies in the face of various challenges (Leonard, Becker, & Coate, 2005).

The purpose of the current research was to explore the experience of one female doctoral student. Topics for discussion included the challenges that this doctoral student faced, how she coped with these challenges, and what perceived benefits she received from participating in a doctorate program. The goal of this case study was to understand how this doctoral student perceived her reality in terms of her involvement in her graduate program.

1. Method

1.1 Participant

Data for this case study were gathered from the responses of one participant. The participant was recruited for the study via convenience sampling, which is a method of selecting participants based on both their availability and their desire to contribute (Onwuegbuzie & Leech, 2007). To assure the anonymity of the participant, she will be referred to throughout the manuscript by the pseudonym Ellie.

Ellie was a White female in her mid-thirties. She has been a full-time professor of

mathematics at a southeast Texas community college for 9 years. Prior to her current position, Ellie had already accumulated several years of teaching experience. She first taught as a graduate student at a university in southeast Texas while she pursued a doctorate degree in mathematics. Although she finished all of her coursework for her doctorate degree, difficult life circumstances prevented her from finishing a dissertation. At that time, Ellie began to teach at another Texas community college system. She taught there for 2 years before she relocated to her current institution. In total, Ellie had 13 years of teaching experience in higher education.

In terms of her personal life, Ellie was the mother of two daughters, aged 3 and 10. She had also recently gone through a divorce from her second husband. After her ex-husband had moved out of their home, Ellie's elderly grandmother moved in with Ellie and the young girls. Because her grandmother had difficulty hearing and moving around on her own, Ellie had to become the primary caretaker of her grandmother in conjunction with her responsibilities to her young daughters.

In addition to her employment and family responsibilities, Ellie also was a second-year doctoral student in the educational leadership program at a Tier–II public university in southeast Texas (U.S. News and World Report, 2012). At the time of the interview, Ellie and I were both taking a qualitative research methodology course. The function of this course was to familiarize the students with the methods and purpose of qualitative research in the field of education. One of the fundamental objectives of that course was for students to engage in an in-depth qualitative research study over the course of the semester in order to hone their skills. To accomplish this, each member of the class was assigned to interview another class member. These interviews were the basis for learning how to analyze qualitative information critically. I selected Ellie from the nine-member population of the qualitative research methodology course based on her proximity to me. This type of convenience sampling was suitable due to the fact that the rationale of this study was to interview and to gather data from an individual doctoral student. Because Ellie and I were members of the same doctoral cohort and shared a friendship, the interview and subsequent interactions were informal and collaborative. This relationship was beneficial in that a foundation of trust already was established prior to the interview process, leading to a pre-established level of rapport between Ellie and I (Spradley, 1979).

Because of Ellie and I's relationship and the co-constructed nature of the interview, I utilized both emic and etic perspectives (Creswell, 2007) in my research study. An emic perspective refers to the research participant's representation of their experiences, thinking and external influences and an etic perspective refers to the researcher's explanation of the phenomenon based on multiple emic sources (Creswell, 2007). In this case, Ellie's views were the central focus of the analysis, but my co-current experiences influenced my interpretation and explanation.

1.2 Instruments

A single, semi-structured, face-to-face interview was conducted to gather data from Ellie. I choose this method because it fit within Kvale's (1996) criteria for judging the quality of an

interview. By asking pre-formulated, open-ended questions, I hoped to get rich, long responses from Ellie that told her story (Kvale, 1996). The purpose of conducting the interview face-to-face was to allow me to clarify meanings, to verify interpretations, and to ask relevant follow-up questions while being able to note any nonverbal behavior (Kvale, 1996). Because the interview was informal and more social in nature, and because both Ellie and I were co-constructing the direction the interview took, I also kept the constructionist framework in mind, as described by Roulston (2010).

Four open-ended interview questions were co-constructed by all members of the qualitative research methodology class in order to assess the participant's experiences in the doctoral program. The interview questions were (a) What influenced your choice of this particular educational leadership doctoral program?; (b) What challenges, if any, have you experienced since beginning your doctoral program?; (c) What strategies, if any, have you used to address these challenges?; and (d) What benefits or rewards, if any, have you experienced as a result of being enrolled in your doctoral program? These questions represent various types of categories, including basic descriptive, experience/example, and comparison/contrast (Janesick, 2004). Because authenticity in formulating qualitative research is essential (Guba & Lincoln, 1989; Nolan, Hanson, Magnusson, & Andersson, 2003), I evaluated these questions in terms of Guba and Lincoln's (1989) authenticity criteria (i.e., fairness, ontological authenticity, educative authenticity, catalytic authenticity, and tactical authenticity) after being participating in a debriefing procedure following the initial interview. The results of this evaluation are illustrated in Table 1. Along with the follow-up questions (e.g., "How important would you say the cohort structure is to you?" and "Are there any particular challenges that you have in terms of mothering while participating in this program?") utilized in the semi-structured format, the interview questions helped to build a rich picture of Ellie's experiences.

Table 1. Application of Guba and Lincoln's (1989) Authenticity Criteria to the Current Research

Authenticity Criterion	Definition	Application to Study
Fairness	All viewpoints are represented even-handedly	Ellie's views were her own and were acknowledged and accepted by the interviewer.
Ontological authenticity	Participants understand their situation in more informed ways as a result of participation in the research	By discussing her experiences, Ellie was able to reflect upon them and gain insight into her situation.
Educative authenticity	Participants understand the situations of others in more informed ways as a result of participation in the research	Though focused on her own experiences, Ellie discussed and was able to reflect on the experiences of those in her cohort.
Catalytic authenticity	Participants have a greater insight into actions that they might take to change their situation as a result of participation in the research	By discussing her experiences, Ellie was able to reflect on her goals and what decision making processes would lead her to achieve these goals.
Tactical authenticity	Participants feel empowered and enabled to act as a result of participation in the research	Reflection on her experiences, especially her ability to overcome challenges, increased Ellie's motivation to succeed.

Note: Table adapted from Nolan et al., 2003.

1.3 Procedure

Data collection. The purpose of this interview was to gather data about Ellie's experience in her graduate program. To this end, I fully explained the intentions of the study and methods of data collections to Ellie before to the interview. No deception was used and no risks of harm were identified. Prior to beginning the interview, I obtained informed consent from Ellie as well as her permission to make an audio recording of our exchange and a manual log of my observations.

The interview itself was conducted in the evening in classroom on a Texas community college campus. The classroom was chosen due to its close location to Ellie's qualitative research methodology classroom, the high probability that it would remain vacant during the interview process, and because the room's basic setup was deemed non-distracting. As Ellie and I walked into the classroom, I noted that the room was windowless but still well lit due to the florescent ceiling lights. The walls were a light blue-gray in color, with no ornamentation except for a dry erase board at the front of the classroom and a bare bulletin board at the back of the room. The physical set-up of the room included several rows of long tables, placed to

serve as student desks, facing towards the front of the room. A computer stand and podium were stationed at the front of the room, presumably for instructor use during class. The room was quiet, and no unusual smells were noted.

Ellie and I sat down directly across from one another at one of the long tables. Based on Ellie's responses to the aforementioned questions, I asked relevant follow-up questions in order to clarify and to expand upon emerging themes. This was the one and only interview conducted with Ellie for this research study. The interview lasted for 26 minutes.

Within 48 hours of the data collection, I had transcribed the interview and sent it to Ellie via a digital copy for member checking. Member checking involves having the participants read over the report in order to check the authenticity of the information provided (Manning, 1997). Ellie was then able to look over the digital copy of the transcript thoroughly before meeting with me face-to-face 2 weeks later to discuss any changes. At that meeting, Ellie took 15 minutes to make a final examination of the transcript. She requested no changes or omissions, stating that the transcript accurately captured her responses and intentions. Then, I thanked Ellie for her time and assured her that her privacy would be maintained throughout the research process.

Following the member checking session, I participated in a peer debriefing with another classmate (Lincoln & Guba, 1985; Onwuegbuzie, Leech, & Collins, 2008). This debriefing took place in the same location as the original interview and was recorded for audio. The purpose of this debriefing procedure was to allow me time and guidance to reflect upon the original interview in a reflexive manner. The questions for this debriefing were again co-constructed by the qualitative research methodology class as a whole and also reviewed in terms of Guba and Lincoln's (1989) authenticity criteria. The debriefing agent and I sat across from one another at another long table. Over the course of 15 minutes, my debriefing agent asked me four pre-established questions: (a) How comfortable were you interacting with your participant?, (b) What findings surprised you?, (c) To what degree were findings similar or dissimilar to your thoughts prior to conducting this interview?, and (d) In the future, how will you conduct interviews based on what you learned doing the interview? Due to the semi-structured nature of the debriefing, the agent asked me relevant follow-up questions (e.g., "Has this process influenced your opinion of qualitative research?" and "Are there other questions or themes you wished had been brought up?") based on my responses. After reviewing and reflecting upon my debriefing transcript, I was ready to begin the data analysis.

Research paradigm. Because this was an individual case study intended to focus solely on the experience of a single participant, I adopted a social constructionist viewpoint (Berger & Luckmann, 1967). This paradigm focuses on social processes, specifically how emphasis is co-constructed among people due to their understanding of language and its meaning. How a single participant interprets the situation is paramount, but this awareness is founded on the shared experience of all those involved. In this case, Ellie's experiences were influenced by our shared interpretations of the research experience. By utilizing social constructionism, I was able to direct all of my attention on Ellie and her responses, but still allow for the

synthesis our co-construction of the interview facilitated. Furthermore, social constructionism implies that there are multiple valid realities based on individual assessment of situations and also that generalizations are not desirable, as information is based on only one interpretation of reality (Onwuegbuzie, Johnson, & Collins, 2009). As Ellie's perspectives were unique to her, I was not able to make comment on how her experiences might have related to the experiences of other graduate students.

Research design. Because the purpose of this study was to learn about Ellie's individual experience in her doctorate program, I used an intrinsic case study design (Stake, 2005) for my research in order to study the unique point of view of a single individual. According to Stake (2005), the purpose of an intrinsic style of case study is to gain a better understanding of a particular case. Furthermore, Miles and Huberman (1994) stated that single case studies can be very "vivid and illuminating" (p. 26).

Verification. To confirm that the transcription of the interview was an accurate reflection of the participant's viewpoints, I sent the transcription to Ellie for member checking, which is when the participant reviews the data collection for accuracy. Ellie was able to view the transcription electronically prior to receiving a physical copy. This technique increased credibility of the findings because it verifies the sentiments that the participant wanted to convey (Manning, 1997).

2. Legitimation

Threats to external credibility. External credibility is concerned with whether research findings can be generalized to alternate people and settings (Onwuegbuzie & Leech, 2007). As referenced above, I adopted a social constructionist paradigm (Berger & Luckmann, 1967) and did not generalize findings. All data and findings only were applicable to the interviewed respondent. However, because I was the agent assigning meanings to the data, I did have to be concerned with interpretive validity of the data as well as how the data could influence the research community (i.e., catalytic validity).

Interpretive validity. Interpretative validity involves insuring that the researcher is faithfully reporting the voice of the participant. It is concerned with how accurately a researcher has interpreted participants' meanings, intentions, and perspectives throughout the study (Maxwell, 1992). In order to corroborate my interpretation of Ellie's voice and, thus, increase interpretive validity, my analysis was focused on direct quotations of Ellie's sentiments during the interview. Furthermore, going through a debriefing procedure (Onwuegbuzie et al., 2008) aided me in remaining reflexive during the research process.

Because I was a cohort member of Ellie's, I had a functional role as well as an observational role in the research setting. According to Adler and Adler's (1987) conceptualization, these dual roles indicate that my researcher role was one of an active member. This role contributed to Ellie's trust of and acceptance of me, as well as increased her ability to identify with me, and I with her. To maintain this role, I exercised self-reflexivity, role awareness, and a periodic withdrawal from the research setting (Adler & Adler, 1987).

Catalytic validity. Catalytic validity refers to how a given study empowers and liberates the

community being researched (Onwuegbuzie & Leech, 2007). Because Ellie's narrative is about doctoral students, those who work or research in this area might attempt to apply the findings here to their own situations. However, I have made sure to stress my social constructionist paradigm (Berger & Luckmann, 1967), indicating that these results might not be generalizable to a greater population because they are based solely on the unique perspective of one individual. Be that as it may, researchers may use Ellie's responses to validate previous research and to generate ideas for future research on the subject based on naturalistic generalization. Naturalistic generalization involves the readers making generalizations entirely, or at least in part, from their personal or vicarious experiences (Stake & Trumbull, 1982).

Threats to internal credibility. Internal credibility, in contrast, is concerned with the synthesis of perceptions and conclusions based on the data. In their 2007 article, Onwuegbuzie and Leech identified and discuss 14 threats to internal validity. Nine of these threats needed to be specifically addressed for my research. Each of these threats is discussed below.

Descriptive validity. According to Maxwell (1992), this type of validity refers to how well the documented interview reflects the actual interview itself. Basically, it is concerned with the transcription being an accurate portrayal of what was discussed. In order to increase descriptive validity and ensure the accuracy of the transcription, I recorded the interview, took notes, and utilized member checking to decrease any possible errors.

Observational bias. If a researcher collects an insufficient amount of data from the respondent, all analysis will be incomplete and lacking in depth (Onwuegbuzie, 2003). To combat this, interview questions were co-constructed by all the members the qualitative methodology class prior to the interview. These questions were created to be open-ended and non-threatening. Then, I asked relevant follow-up questions throughout the course of the interview in order to gain as much data and insight as possible into Ellie's experiences.

Researcher bias. Researcher bias is when a researcher's behaviors or expectations affect respondents in such a way that their natural responses are altered, especially in a way that aligns responses with a researcher's goals or assumptions (Onwuegbuzie, 2003). Due to the fact that the interview questions were co-constructed by the entire class, with Ellie and I included, bias was a concern. To mitigate these effects, another classmate debriefed me following the member checking step of the initial interview (Lincoln & Guba, 1985). I sat across the table from the debriefing agent and voice recording was permitted. This debriefing allowed for me to reflect meaningfully upon the interview process and to focus on the objectivity of data collection in order to reduce the impact of any a priori assumptions (Lincoln & Guba, 1985).

Confirmation bias. Similar to researcher bias, confirmation bias occurs when conclusions are exceedingly harmonious with any prior assumptions (Greenwald, Pratkanis, Leippe, & Baumgardner, 1986). In other words, confirmation bias occurs when a researcher, knowingly or unknowingly, uses data to confirm any previous inferences about the results instead of allowing the data alone to guide the analysis. To guard against this, I refrained from making

any type of hunch on possible themes before the interview, instead allowing themes to emerge from analysis of the transcript itself.

Reactivity. This threat is concerned with whether results are influenced by some type of threat that is presented to the participant (Onwuegbuzie & Leech, 2007). Because Ellie was assured of her anonymity throughout the process, there was no level of threat or retaliation for her responses. This lowered reactivity and allowed Ellie to respond to questions honestly.

Order bias. When the order of the questions asked makes a difference in the findings, order bias can become a concern (Onwuegbuzie & Leech, 2007). To combat this, after the initial questions were asked, each concept was revisited to allow Ellie to expand upon her responses. This permitted the conversation to flow more freely and for Ellie to respond in any order she wished.

Paralogical Legitimation. This type of legitimation refers to the finding of paradoxes in the research (Onwuegbuzie & Leech, 2007). Because the information was taken from one individual (i.e., Ellie), her own responses were unlikely to contradict with one another. If any of her statements needed clarification in terms of her earlier responses, follow-up questions were asked in order to limit potential paradoxes.

Voluptuous Legitimation. This type of legitimation concerns me, the researcher, and my level of interpretation of the data (Onwuegbuzie & Leech, 2007). In order to combat the potential problem of my interpretation of the data exceeding my knowledge and expertise, several measures were put in place. First, I am being continually trained in qualitative methodologies as a result of my doctoral program. Second, I received immense feedback on my progressive work and have adapted my analysis based on what I learned. Finally, I went through peer debriefing in order to reflect meaningfully upon the data so as to remain reflexive and analytic. The analysis I made in this research is reflective of my knowledge and ability in this area.

Addressing areas of legitimation completely is integral to the success of a research study. To illustrate better the threats to my study, please see Table 2. This table defines each threat and makes note of how I addressed each of them.

Table 2. An Examination of External and Internal Threats to Credibility in terms of the Current Research

Threat	Type of threat	Description of threat	Attempts to mitigate
Interpretive validity	External	Assesses the extent to which a researcher's interpretation of an account represents an understanding of the perspective of the group under study and the meaning attached to their words and actions	I focused my analysis on Ellie's responses and exercised self-reflexivity, role awareness, and periodic withdrawal from the study setting in order to faithfully report Ellie's story.
Catalytic validity	External	Assesses the degree to which a given research study empowers and liberates a research community	I made sure to call attention to the lack of generalizability of my results. However, I do encourage other researchers to use naturalistic observation in order to generate new ideas for research from this study.
Descriptive validity	Internal	Assesses the factual accuracy of the account as documented by the researcher	I recorded the interview, made a manual log of my observations, and utilized member checking.
Observational bias	Internal	Occurs when researchers have not obtained a sufficient amount of sampling behaviors to analysis from study participants	Interview questions were co-constructed by a qualitative methodology class to be open-ended and non-threatening. Follow-up questions allowed me to gain further data regarding Ellie's unique experiences.
Researcher bias	Internal	Occurs when a researcher has personal biases or pre-existing assumptions that can influence participants' behaviors as well as the methodology of the study	I went through a peer debriefing process following the interview that allowed me to remain reflexive about the data collection process and minimized any prior assumptions.
Confirmation bias	Internal	Occurs when	I refrained from

		interpretations and conclusions are overly congruent to pre-existing hypotheses	generating any inferences prior to data collection and instead allowed themes to emerge from data analysis only.
Reactivity	Internal	Assesses changes in participants' responses as a result of awareness of study participation	I assured Ellie of her anonymity, thereby lowering any chance of her receiving retaliation due to her responses. This permitted her to be honest in replies.
Order bias	Internal	Occurs when the order of the questions that are posed to participant influences the responses	I revisited each concept after the initial round of questions in order to allow Ellie to respond in any order she wished.
Paralogical legitimation	Internal	Occurs when there are paradoxes revealed from the data	I asked follow-up questions to clarify responses in order to avoid potential paradoxes.
Voluptuous legitimation	Internal	Assesses the extent to which the researchers' level of interpretation exceeds their knowledge base stemming from the data	I have received training in the field and am continually adapting my methods based on both the feedback from my doctoral program and the results of reflection due to peer debriefing.

Note. Descriptions of threats were adapted from Onwuegbuzie and Leech (2007).

3. Analysis

Two levels of analyses were used to obtain a comprehensive picture of the data, because using more than one type of analysis can increase "rigor and trustworthiness of the findings" (Leech & Onwuegbuzie, 2007, p. 575). Using the qualitative analysis software QDA Miner Version 4.0.3 (Provalis Research, 2011) and its counterpart WordStat Version 6.1.4 (Provalis Research, 2010), I examined the transcript for themes using constant comparison analysis and discourse analysis. QDA Miner is a (mixed methods-based) qualitative data analysis software package used for coding, annotating, retrieving and analyzing documents and images (Provalis Research, 2011).

The overarching goal of constant comparison analysis is to analyze text in order to generate themes from the responses of the participants (Glaser & Strauss, 1967). To conduct constant comparison analysis, one must perform three steps: (a) open coding, (b) axial coding, and (c) selective coding (Strauss & Corbin, 1998). The first step, open coding, consists of chunking the data in meaningful segments and labeling these segments with descriptive codes. These codes then are grouped into similar categories during the axial stage. The categories then are integrated and refined in order to create substantive theory of social phenomenon (Glaser & Strauss, 1967).

The creation of the categories necessary for constant comparison analysis is a rigorous process. According to Constas (1992), category development procedures must include the components of (a) origination, (b) verification, and (c) nomination. Origination of the categories can result from the research participants, programmatic language, the investigation, review of literature, or interpretations of the data (Constas, 1992). For this study, I distinguished the categories as they emerged from the investigation of the interview transcript. The second procedure, verification of the categories, involves explaining how the categories can be logically substantiated with existing research (Constas, 1992). I completed verification empirically by reviewing relevant literature for similarities and differences in findings. Many of the themes I found were consistent with those previously reported in similar research. Finally, the nomination component is concerned with the process of naming the categories in a neutral description (Constas, 1992). Because I named categories following the data analysis, as opposed to creating categories before analysis, I was able to allow Ellie's responses and language dictate the labels.

Discourse analysis requires the researcher to delve into the transcript data to look for representative phrases or unique language in order to examine them to understand better how people communicate on a daily basis (Potter & Wetherell, 1987). According to Gee (2005), there are seven tasks of language that can be explored through a discourse analysis. These tasks are (a) *significance*, which explores how pieces of language are being used to make certain items significant or not and in what ways that occurs; (b) *activities*, which involves determining what activities a piece of language is being used to enact; (c) *identities*, which involves determining what identities a pieces of language is being used to enact; (d) *relationships*, which explores how a pieces of language enacts relationships with others; (e) *politics*, which is concerned with what perspective on social goods a piece of language is communicating; (f) *connections*, which explores how a pieces of language connects or disconnects something; and (g) *sign systems and knowledge*, which is concerned with how a piece of language privileges or disprivileges specific sign systems, different ways of knowing and believing, or claims to knowledge and belief.

4. Results

4.1 Constant Comparison Analysis

A constant comparison analysis was performed on the data. This method involved reading

through the transcript and identifying any significant motifs communicated. These motifs were coded, counted for frequency, and examined for any idea patterns, or themes (Straus & Corbin, 1998). This analysis revealed 21 codes that then were organized into four major themes: (a) obligations and the need for balance, (b) challenges encountered due to the program (c) coping mechanisms employed to achieve balance, and (d) benefits received from program. The organization of these codes into themes can viewed in Table 3.

Table 3. Themes and Codes Identified Through Constant Comparison Analysis

Themes	Codes	Coding Frequency
Obligations	Family	10
	Employment	10
	Personal health	13
	Program	17
	Home	2
Challenges	Time management	7
	Mathematics background	7
	Reading	7
	Writing	2
Coping	Proximity	5
	Prioritizing	6
	Lists	2
	Multitasking	4
	Cohort	6
	Sacrifice	3
Benefits	Fulfillment	3
	Personal knowledge	5
	Self realization	4
	Confidence	2
	Reading/writing skill	9
	Future opportunities	4

Note. Coding frequencies were determined by using QDA Miner and WordStat, a qualitative software package. Generation of codes and themes was performed by the researcher.

Based solely on coding frequency, Ellie placed the most emphasis on the codes *program obligations* (17 mentions) and her *personal health and well-being obligations* (13 mentions). The code *financial benefits* was the least emphasized, with only one mention. Overall, the theme of obligation pervaded the entire interview, with less emphasis being placed upon the theme of benefits. Figure 1 displays the frequency for all codes.

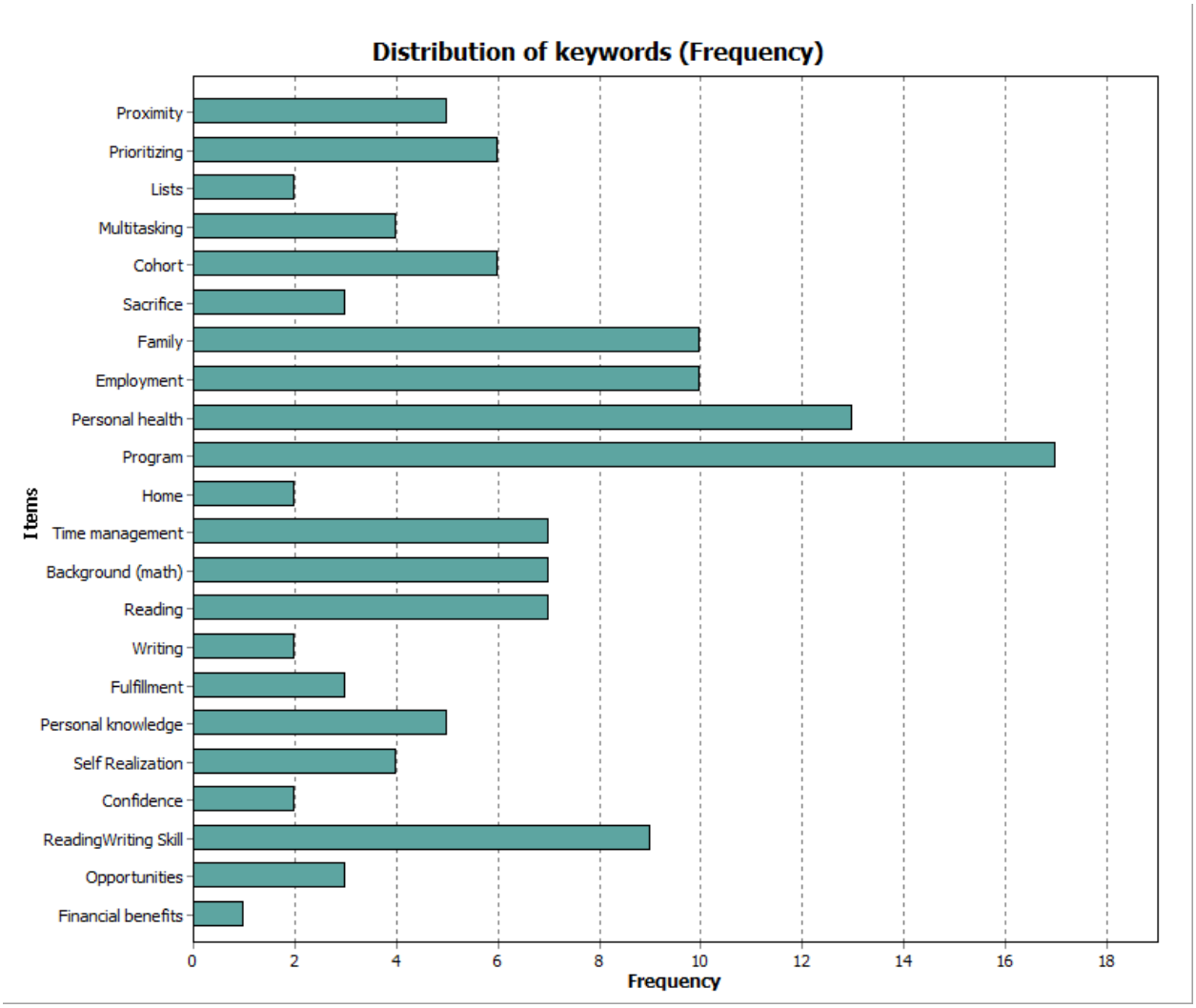

Figure 1. Frequency of each code used in the constant comparison analysis. Created using QDA Miner Version 4.0.3 (Provalis, 2011). Generation of codes was performed by the researcher.

However, just noting the frequency of these codes does not fully translate Ellie's experience. Constant comparison analysis involves examining the codes for themes, and then appraising these themes in depth to determine their importance. Exploring the codes more, it became apparent that they were all strongly interrelated. For example, when Ellie discussed her obligations as a mother, this concept was related to the codes of *family obligations*, *time management*, *list-making*, *prioritizing*, and *sacrifice*. Figure 2 illustrates how many codes then overlapped to produce themes.

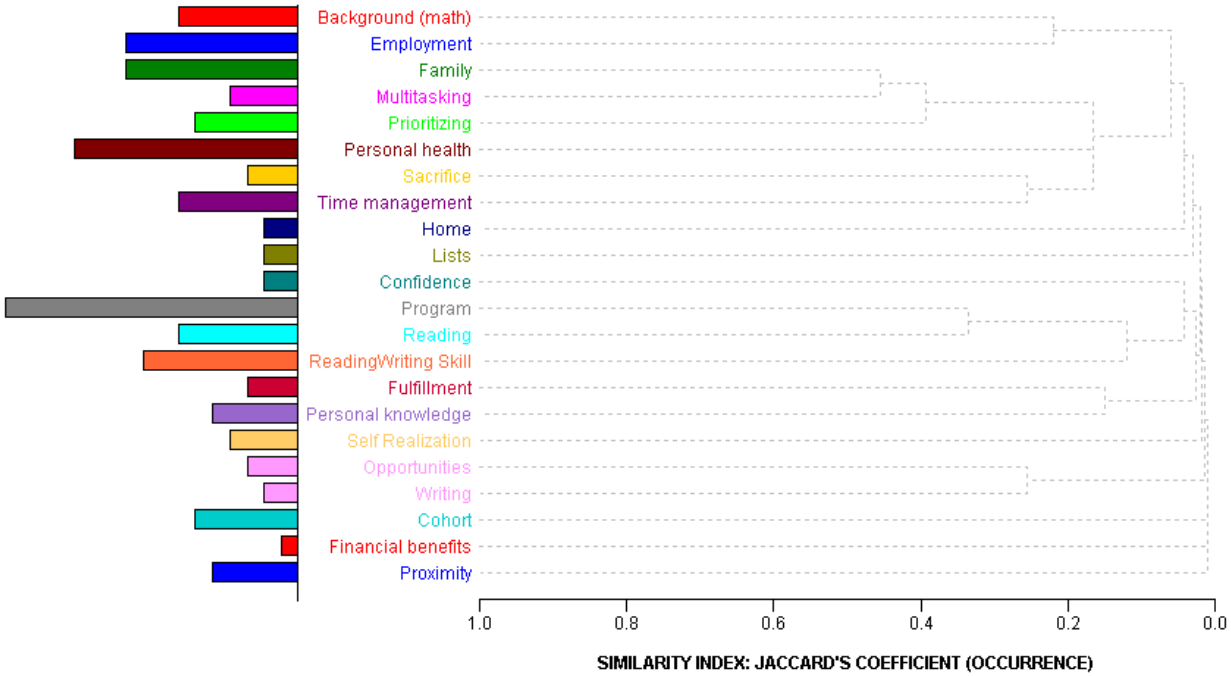

Figure 2. Dendogram displaying similarity and overlap of codes during constant comparison analysis. Created using WordStat Version 6.1.4 (Provalis, 2010). Generation of codes was performed by the researcher

The first theme, obligations and the need for balance, consisted of information detailing Ellie's highly busy life and the demands she felt on a daily basis. As a full-time professor, single mother, family caretaker, and homeowner, Ellie's obligation codes of *employment*, *family,* and *home obligations* were significant. This is in addition to the obligation codes of *personal health and well-being obligations*, such as maintaining her health by rest, exercise, renewal, and opportunities for growth. One of the ways she wanted to grow was by advancing her career with a doctoral degree in educational leadership.

Knowing that her personal and professional obligations were numerous, Ellie began to research programs that would allow her the flexibility she would need to be successful. However, many program offerings by area institutions required too much time in terms of commuting to be realistic for her situation. In order to fulfill her goal of an advanced degree, Ellie had to use the strategy of *proximity,* a coping code, to find a program that would best fit into her full lifestyle. This coping mechanism led Ellie to her current program.

Once she began her studies, however, Ellie experienced several challenges when she entered the program. These challenges became a major theme throughout the rest of the interview. Ellie found it difficult to keep up with the levels of *reading* and *writing* demanded by the program, especially due to her *mathematical background*. She explained:

> I never took an education class, had no idea what an education class consisted of. So jumping into this program with an open mind, I had no expectations, so the first class, one of the first classes we had was a writing class. Well, I have said, being mathematical minded, didn't think of myself as a writer much at all…

Ellie believed that she was initially at a disadvantage in the program due to her background in mathematics. She mentioned having a very "black or white" perspective and that the educational field was making her looking at ideas in "shades of gray." She further explained that the material read in the program and the writing style of the program was very different from that in mathematics.

Because of her preliminary difficulty with her *reading* and *writing* skills in terms of the demands of the program, Ellie also faced the challenge of *time management*. This became especially apparent when she discussed attempting to find the time to complete assignments within her already hectic schedule:

> Another strategy that I have used uh, trying to do family stuff during, in the morning…Getting the kids shuffled off, going to work 2 days a week, um my dean has been wonderful enough to give me three online classes and only one face to face class (.) each semester that I've been in the program…So I haven't had to be at the campus to teach as much during the program. But the online classes tend to require just as much, if not more of your time, but the flexibility is there that I can give it my time after the kids go to bed. So I do teach face to face 2 days a week, come home, shuffle the oldest to activities, cook, do the bedtime, bath time routine, get kids to bed, and usually by 9 o'clock I'm cleaning up emails and answering online student questions. Ten thirty, 11 o'clock at night rolls around and I finally get to focus on what I want to do with studies and intermittently answer Skype questions with online students. And then all of a sudden it will be 2, 3, 4 o'clock in the morning and I'll realize that I have been asleep for an hour or so, on the couch, book in hand, highlighter forced down to the page, bleeding all over the page.

In hearing exactly how Ellie has to structure her day, her need for balance became striking. In order to achieve balance, Ellie has employed several coping strategies, which was another theme determined from the interview. I have already discussed the strategy of *proximity*, but she mentioned several other coping strategies that were allowing her to continue on in the program. Making *lists*, *multitasking*, and *prioritizing* were especially important to her. She summarized the need for these strategies in this quotation:

> Um, and I frequently add things to my list that are already accomplished and done, just so I can mark them off of my list and feel more productive. Uh, but that has been my biggest strategy is to what needs to be done now. What needs to be done tomorrow, and what can I put off to do until next week.

Many times, prioritizing what is best for her and her family leads Ellie to make *sacrifices*. She mentioned several times how she puts off sleep or showers in order to take care of work. Also, the absence of any mention of friends outside of her family and cohort indicate that Ellie might not have much time for recreational social interaction. This means that Ellie might be sacrificing social relationships in favor of her other obligations.

However, these motifs of *prioritizing*, *sacrifice*, and *obligations* do not seem to be unique to Ellie's experience in the program, but might just be a facet of who she is. Through the course

of the interview, I discovered that Ellie had sacrificed her initial dream of becoming an orthopedic surgeon in order to maintain a marriage. She then had to sacrifice finishing a previous doctoral program in mathematics so that she would be able to raise her first daughter in the wake of a divorce.

Ellie's final coping mechanism came about due to the program itself. She credited her *cohort* support system as one of the benefits of the program, as well as one of the reasons she had been able to continue in the program despite the challenges she faced:

> The thing that I've enjoyed most about the program has probably been the camaraderie of the cohort. I have met friends, made friends, met people, totally different walks of life. Um, got to know them, not only on a student-cohort type relationship, but also personal relationships with some, and to know that they are going through the st- *[sic]* same struggles, if you will, that I am facing, it makes me feel not so alone.

Although many of Ellie's remarks were centered on her difficulties in the program, the last themes were very positive in connotation. She credited the program for improving her *writing* and *reading skills*, as well as for establishing a path to *confidence*, *personal knowledge*, *self-realization*, *opportunities*, and *achieving fulfillment*. Although she acknowledged the difficulty of the program, she also embraced it:

> I am moving one step closer to doing something that I want to do for myself. I know that this time in my life will be extremely difficult. Ah, if it were easy, everyone on the earth would be doing it.

This awareness and acceptance of the challenges of this stage of her life are two of Ellie's greatest advantages in overcoming any hardships she experiences. As her past experiences have indicated, she is willing to make sacrifices in order to make the best decision for her and for her family. With the addition of the cohort support structure and her desire to achieve fulfillment, Ellie seemed confident in her ability to complete the program.

4.2 Discourse Analysis

Following the constant comparison analysis, I conducted a discourse analysis on the data to determine how Ellie used her language to construe each of Gee's (2005) seven tasks of language. Although similar themes emerged from the discourse analysis as from the constant comparison analysis, the emphasis was different. These differences of interpretation based in the tasks added more to my understanding of Ellie's unique experiences during her doctoral program (Onwuegbuzie & Leech, 2007). Results stemming from each of Gee's (2005) building task are presented below.

Significance. According to Gee (2005), significance describes how the participant uses language to make items significant. Ellie placed a great deal of emphasis on the challenges that she had faced, both in the program and in her life as a whole. Her language emphasized how she had recognized challenges, had approached challenges head on, and had accepted the challenges as part of her daily life, as exemplified by the following extract:

> I am moving one step closer to doing something that I want to do for myself. I know that this time in my life will be extremely difficult. Ah, if it were easy, everyone on the earth would be doing it. It's not. I know that I will be paying the price…

Ellie goes on to emphasize which of the challengers are most significant to her. These included accepting the reality of challenges, finding a support system, accepting sacrifice as a part of life, and dealing with lack of control over stress factors. Table 4 details some of the language Ellie employed to convey items that were significant to her.

Table 4. Examples of Language that Convey Significance as Revealed by Discourse Analysis

Behavior or Word Phrase	Significance
It has been my experience that this semester the reading is overwhelming to the point of breaking. [emphasized] Me. [emphasized] Down. [emphasized]	Challenges are extremely stressful and have impact on overall health [emphasis stresses this factor]
However on the first night of class this semester, we were informed that we would be alternating days and so instead of having both classes back to back on Tuesdays, one week we'll have the first class and the following week we'll just have the second class…It's been different, we were not asked for our input, however, again with an open mind.	Control over situation may not always be an option
Had dreams of doing med school, so obviously took all the pre-med courses. Um, made poor choices in life at a young age. Chose to get married at age twenty. When I graduated with my undergrad, realized that I did not have the support to go to medical school, so I stayed put and finished a masters.	Hard choices and sacrifice are a part of life at every stage

Activities. Gee (2005) defined the tasks of activities as answering the question "What activities or activities is this piece of language being used to enact?" Ellie's responses strongly focused all of her energies on requirements for the program and prioritizing. Reading and writing took center stage, with delineation between how she had been using reading and writing skills prior to the program and how that had changed since beginning the program. She stated,

> Our first professor, in, uh, the professor for our first writing course, uh basically taught us how to dissect educational writing. I no longer read word for word, uh, to learn how to skim and scan your reading for the material that you need to pull out of

it.

In addition to reading and writing, Ellie spoke briefly about activities outside of the program, including running and attending social functions. Although the focus of the interview was on her experiences in the program, the mention of social activities and individual renewal were conspicuously absent from her narrative. There was a significant contrast in how much she referenced the program influencing her daily life and how little she mentioned factors outside of the program and her main obligations (e.g., work, children). The program seemed to be the defining factor of her reality. Table 5 illustrates how Ellie's language in reference to activities contributes to her daily life.

Table 5. Examples of Language that Convey Activities as Revealed by Discourse Analysis

Behavior or Word Phrase	Activity
Um, and I frequently add things to my list that are already accomplished and done, just so I can mark them off of my list and feel more productive.	Prioritizing by list making is a necessary activity in order to feel in control
It has made me put words down on paper. I know grammatically I write correct. Uh, usually correct English, correct verbage. That was never an issue, it was just getting the words down on the paper. I still don't like it, but I do it.	Writing has taken on a different format and importance since joining the program
Um, weekends I try to get in a long run. I have a half marathon coming up in five days. I had to count them on my fingers, that's horrible. So trying to get long runs in on the weekends and I've two or three short runs during the week…	Running provides a small break from obligations if it can be fit into the schedule

Identities. As I explored the transcript for language that would address what identity or identities were being enacted (Gee, 2005) by Ellie, I found that she maintained several distinct personas that she was constantly attempting to "juggle." Ellie identifies herself as a doctoral student, a mother, a professor of mathematics, a homeowner, a granddaughter, a runner, a mathematically minded person, and a cheerleader. Attempting to maintain and to give equal time to these identities had been difficult for Ellie. She explained, "I not only am juggling full-time work and being a single mom of two kids, but also fitting in time to do the reading and do the studying, uh, that has been my biggest challenge of this program."

These identities are why Ellie faced so many challenges in terms of time management. Each identity had its own obligations, which placed immense time pressure on Ellie. This pressure led to her need to prioritize and to sacrifice. The management of these multiple identities were directly correlated to the challenges that Ellie worked to overcome each day. Examples of how Ellie's language illustrates these identities can be found in Table 6.

Table 6. Examples of Language that Convey Identities as Revealed by Discourse Analysis

Behavior or Word Phrase	Identity
Well, I have said, being mathematical minded, didn't think of myself as a writer much at all…	Identity as a mathematically minded person has lead to identity challenges in program
I teach at Lone Star College – Tomball. I am a full time math instructor. This is my ninth year, at that loca- at XXX College. Prior to XXX College, I taught full time at YYY College for 2 years and also at University of ZZZ, 2 years a graduate student while I was working on my doctorate in math. Uh, so I teach.	Identity is defined by what one does
But the online classes tend to require just as much, if not more of your time, but the flexibility is there that I can give it my time after the kids go to bed. So I do teach face to face two days a week, come home, shuffle the oldest to activities, cook, do the bedtime, bathtime routine, get kids to bed, and usually by nine o'clock I'm cleaning up emails and answering online student questions.	Responsibilities from each identity often compete for attention

Relationships. Gee (2005) classified relationship tasks as those pieces of language that establish what sort of relationships that participant is seeking to enact with others. Ellie established three main relationships during our discourse: her relationship with her cohort, her relationship with herself, and the relationship with each of her daughters. Because each daughter was a different age and at different maturity level, there were some differences in how Ellie had been able to relate to them since beginning the program:

> The 10 -year old understands the sacrifice that's being made by the family. Uh, the 3-year old, not so much. The 10-year old is very helpful at home; yet she also demands me time. Uh, the 3-year old is 3, obviously, she doesn't, uh, doesn't have the capacity to comprehend Mom has to study or Mom has to read, and she's learning how to sit in my lap and find other ways of self-soothing than mom has to play with me.

Ellie emphasized the difficulty she had experienced maintaining and developing her relationships with her daughters due to the time commitments of the program. In order to manage the stress caused by the program in this area of her life, Ellie relied on her relationship with the cohort. As previously mentioned in the section on constant comparison analysis, Ellie's relationship with her cohort was one of a support network because knowing

that others were managing the same difficulties "makes me feel not so alone." A further examination of Ellie's relationships can be found in Table 7.

Table 7. Examples of Language that Convey Relationships as Revealed by Discourse Analysis

Behavior or Word Phrase	Relationship
We all, as a cohort, stuck together, we got through it.	The cohort provides the support structure necessary for perseverance
Another strategy that I have used uh, trying to do family stuff during, in the morning, get kids shuffled off to my parents house.	Setting time aside to cultivate relationships is difficult
Ten thirty, eleven o'clock at night rolls around and I finally get to focus on what I [emphasized] want to do with studies	Little time is available for to pursue one's own interests. [Emphasis indicates a lack of personal choice]

Politics. Politics refers to the perspective on social goods that a piece of language conveys (Gee, 2005). Ellie, for her part, seemed to focus her attention on flexibility and measures of control in regards to politics, both in her work place and the program. In fact, the only reason that Ellie was able to join the program was due to the flexibility of the institution on class location:

> I looked at several different programs and upon speaking with someone at Sam, they told me, actually he told me, uh, they offered cohorts both at Sam and in The Woodlands and it depended on the semester and it was kind of a I guess luck, as to whether it would be here or there, and we found out that it would be offered at both places for our cohort. That was my deciding factor.

If not for the decision of the university to offer the program at both locations, Ellie would not have been able to pursue her degree. Because Ellie often had to be flexible in her life due to her commitments, she appreciated any flexibility offered by either her employer or her academic advisors in response to feedback. This also means that she disapproved of any action that did not take feedback or flexibility into account. Table 8 illustrates several of these examples.

Table 8. Examples of Language that Convey Politics as Revealed by Discourse Analysis

Behavior or Word Phrase	Politics
Going to work two days a week, um my dean has been wonderful enough to give me three online classes and only one face to face class each semester that I've been in the program. Last summer I taught my full load online. So I haven't had to be at the campus to teach as much during the program.	Flexibility in schedule from employer has been important and appreciated
However on the first night of class this semester, we were informed that we would be alternating days and so instead of having both classes back to back on Tuesdays, one week we'll have the first class and the following week we'll just have the second class. Uh, for the entire, um, five and a half hour block. It's been different, we were not asked for our input.	Frustration results from lack of input in a decision
To be honest with you, I want more money. So if that means teaching at a four-year university and probably being forced to do academic writing this is the right program for me. Or getting into the administ—administration aspect of the community college. Which that was my original intent and I'm not swaying from that yet, but I just want doors of opportunity opened.	Acceptance of requirements if it supports overall personal goal

Connections. According to Gee (2005), the task of connections has two main functions: (a) determining how a piece of language connects or disconnects things and (b) determining how a piece of language makes something relevant or irrelevant. As mentioned previously, Ellie's thoughts always were centered on her program. Thus, throughout the interview, she connected the program and its requirements to the challenges that she experienced. However, she was also able to connect the program to benefits and goals in her life.

> Dr. Snow *[pseudonym]* was wonderful with the writing class in building up and I'm at a loss of words...Confidence…Uh, she built up the confidence of I can write and uh was introduced to the wonderful APA and it's just gone from there.

Even though Ellie had earlier referenced writing as a challenge, here she connected an instructor and writing class to her budding confidence as a writer. Without the challenge of the writing course, Ellie may not have developed this skill. She went on to discuss how the program had "opened her mind" and allowed her to achieve "personal knowledge" about

herself. A further discussion of the connections Ellie has made in regards to the program can be found in Table 9.

Table 9. Examples of Language that Convey Connections as Revealed by Discourse Analysis

Behavior or Word Phrase	Connection
I have learned how to prioritize things in my life. Uh, not only what needs to be done around the house, what I definitely need to do on my job, and what I need personally to do for schoolwork. To make myself fill, feel fulfilled.	Fulfillment can be achieved through prioritizing responsibilities
I'm, I'm tired. Sleep-deprivation is, is inevitable in this program.	Personal health can be impacted by the program
I want to open opportunities; uh, open doors of opportunity. I love the classroom, my passion is teaching.	The program is integral in developing opportunities in a chosen field

Sign systems and knowledge. This final task answers the question "How does this piece of language privilege or disprivilege specific sign systems or claims to knowledge and believing or claims to knowledge and belief?" (Gee, 2005). Ellie demonstrated different types of systems knowledge with her language, even at one point differentiating her prior mathematical knowledge with the statistical knowledge that she had to learn for the program. She explained, "And then third semester was statistics, which I thought would be a cake walk. Not quite so much."

Ellie's language choices illustrated how attuned her life and knowledge was to the program. She had specific ways to communicate information about books and about choosing a graduate program. Lastly, she used her mathematical language to convey knowledge of the different areas of her profession. Examples of these pieces of language can be found in Table 10.

Table 10. Examples of Language that Sign Systems and Knowledge as Revealed by Discourse Analysis

Behavior or Word Phrase	Knowledge
I, now, if I were recommending a program or helping someone to choose why they should choose a certain program, I would tell them to strongly weigh the cohort versus not, no cohort aspect	Program Selection Knowledge
However, again with my list, not only do I have read Gee, I have read Gee chapter 1, read Gee chapter 2, so I can cross them off as I read them.	Program Academic Knowledge
Remedial students are a breed of their own. Um, its not the math that's difficult in those classes, it's the keeping everyone engaged and enthusiastic about being a in a math class. I am an overpaid cheerleader when I teach developmental courses	Professor of Mathematics Knowledge

5. Overall Impressions

After analyzing the 3,600-word document by constant comparison analysis and discourse analysis, several themes emerged. Although each of the themes received different emphasis in each type of analysis, the common threads of competing responsibilities, challenges, coping mechanisms, and benefits of the program appeared throughout the narrative. Ellie's story is one of resilience in the face of numerous difficulties.

6. Nonverbal Communication

Throughout the interview, Ellie's nonverbal behavior strongly correlated with the overall themes of the interview. Due to this, I added Gordon's (1980) four basic nonverbal modes of communication into my analysis: (a) proxemics, which is how one uses interpersonal space to communicate ideas; (b) chronemic, which is how silence and speech are utilized in conversation; (c) kinesic, which refers to body movement and postures; and (d) paralinguistic, which includes variations in volume, pitch, and quality of voice. As a woman who is pressed for time and has had to resort to being efficient in order to maintain her busy lifestyle, Ellie's responses were often short and pragmatic at the beginning of the interview. Each reply was quick and to the point. In fact, within our 30-minute allotted time frame, Ellie had finished responding to all of the preliminary questions in a mere 12 minutes. It was not until I began probing deeper into her responses and her background that I was able to gain a richer depiction of her experiences. As she elaborated on her previous replies, her emotional perspective seemed to change as indicated by alterations in her paralinguistic characteristics (Gordon, 1980). At the beginning of the interview, she seemed tired and spoke of her

obligations with weariness and distress (e.g., when she mentioned that she had learned how to live with minimal sleep and lack of showering), frustration and anger (e.g., when she discussed how the arrangement of her classes for the semester had been altered without input from the cohort), and, sometimes, sarcasm and contempt (e.g., when she discussed "loving" a particular book or assignment). Once we began probing deeper, she became more hopeful and excited while also demonstrating pride in achievement (e.g., talking about how the program will open "doors of opportunity" and how her completion of the program is a personal goal that she intends to achieve). The interpretation of these emotions (i.e., distress, anger, contempt, excitement, and pride in achievement) came not only from analysis of paralinguistic changes, but also from observation of innate facial expressions (Ekman, 1999).

In addition, Ellie's body language shifted through the course of the interview (Gordon, 1980). As we began our discourse, Ellie sat back in her chair, leaning away from me, her arms crossed in front of her. She kept strong eye contact, but never seemed defensive. Her initial posture could be characterized as very matter-of-fact. Again, though, as we progressed through the interview, she changed and exhibited more open body language by leaning forward and uncrossing her arms to rest them on the table. Occasionally, she used her hands to emphasize a point (e.g., her frustration with the amount of homework) or to count (e.g., how many days it was until her half-marathon), but this use of deictics (McNeill, 1992) was not consistent throughout the exchange.

For my part, I was genuinely interested in Ellie's responses, so I allowed my nonverbal behavior to showcase this interest. Physically, I leaned forward to hear her responses, maintained conversational eye contact, and indicated support through hand gestures and movements (e.g., mimicking clapping to convey sentiments of 'good job'). Tonally, I expressed my solidarity, support, and amazement with what Ellie had overcome to continue in this program.

7. Discussion

Ellie's experiences describe a world that is fraught with challenges. The pressures that she has faced are in line with those other doctoral students have reported, including demands from work, family, personal needs, and the graduate program itself (Moyer et al., 1999). The awareness of how this program pervaded and affected every area of Ellie's life is shaping the way that Ellie perceives her reality. Her days are structured around obligations, but all of these obligations are met in the fashion that benefits her success in the program. A word map generated from the constant comparison analysis codes illustrates how great a priority the program is in Ellie's life (see Figure 3).

Figure 3. Word map of codes created during constant comparison analysis using QDA Miner Version 4.0.3 (Provalis, 2011). Generation of codes was performed by the researcher

Besides her obligations, Ellie has felt out of her elements at times in the program, especially in terms of the level of reading and writing skills required. She has met these challenges by focusing on prioritizing work and making lists, as well as by developing her skills in these areas so as to be more efficient. Her responses demonstrate her increased levels of confidence in reading and writing as a benefit of her participation in the program.

Finally, the main support structure that Ellie mentions is the cohort aspect of her program. Due to her cohort, any loneliness or fear Ellie experienced is abated by the realization that the remainder of her cohort is going through the same trials. She references the camaraderie gained as one of most significant benefits of the program.

The benefits that Ellie has perceived, increased skill and personal growth, are echoed by the results documented by Leonard et al. (2005):

> The latter included frequent mention of 'increased confidence/self-confidence', 'self-fulfillment' and 'challenge'; 'new ways of thinking' and 'being reflective and analytic'; and 'knowing how to write'. It also included regular mention of 'trust in my abilities' and 'confidence in my own knowledge'; 'focus', 'self-discipline' and 'emotional growth (persistence, etc.)'; 'good contacts and networks' and 'lifelong friends'…and an altruistic sense of making a contribution and becoming a better, more critical professional (p. 141).

As a fellow doctoral student, I believe that I was able to identify both with the struggles and the rewards that Ellie mentioned. I too am a mother of a young child and understand the difficulty Ellie faces in raising children while in this program. Although these similarities aided me in engaging Ellie in the interview, it also limited my ability to ask follow-up questions. Because I had a previous relationship with Ellie and had many similarities with her, I became focused on these topics during our discussion. This could have resulted in biased results.

However, in order to reduce my researcher bias (Onwuegbuzie & Leech, 2007), I engaged in peer debriefing. This debriefing (Lincoln & Guba, 1985) allowed me to step outside of the interview (Creswell, 2007) and evaluate any preconceptions I might have had. Then, I was able to identify any biases I had (e.g., being empathetic to the struggles of mothers of young children), reflect upon how those biases could influence my interpretation of the data, and

then approach my analysis with a more neutral viewpoint. Also, the debriefing allowed me to grow as an interviewer because one of the questions focused on how my interviewing experience would affect later interview sessions. Due to the fact that I had very little interview experience coming into this study, reflection on what I would continue to do (e.g., establish a trust connection with the interviewee and show honest interest in responses) and what I would alter (e.g., be careful not to let my own experiences and expectations guide my questions) is very important to my development as a researcher.

The purpose of this research was to study how an individual graduate student experiences her doctoral program. From the data, a picture of the challenges, strategies, benefits, and goals of Ellie's unique situation was revealed. Although this research was limited to a single case, we do see similarities between Ellie's account of her challenges and benefits and those reported by other researchers, such as competing responsibilities due to identities and increased confidence (Leonard et al., 2005; Maher et al., 2004). Future researchers should confirm the strength of these similarities by interviewing more students in order to determine if they are demonstrated across cases. Also, Ellie could be interviewed again, perhaps several times over the course of her program, to identify which, if any, themes change or expand. These studies would broaden the understanding of the world that doctoral students face, and possibly offer up information on how better to adapt programs to the needs of their students in order to increase their levels of success. Examples of possible adaptations include increasing uses of cohort structure in order to create levels of support among students, offering flexibility of class meetings to allow for work and family commitments, and student development seminars on time management and writing development. Any of these adaptations could lead to lowering the amount of time it takes to complete a doctoral degree, thereby increasing the amount of graduates from doctoral study programs.

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