Mapping Saldaňa's Coding Methods onto the Literature Review Process

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Abstract

Onwuegbuzie and Frels (2014) provided a step-by-step guide illustrating how discourse analysis can be used to analyze literature. However, more works of this type are needed to address the way that counselor researchers conduct literature reviews. Therefore, we present a typology for coding and analyzing information extracted for literature reviews based on Saldaňa's (2012) coding methods. We present stages for conducting these analyses using an actual body of published works and illustrate how to use a computer-assisted qualitative data analysis software program, namely, QDA Miner. Finally, we delineate how using this systematic approach promotes counselor identity and addresses the call for ethical, transparent research and evidence-based practices.

1. Introduction

The promotion of evidence-based practice and outcome research has moved to the foreground in the ongoing dialogue of the counseling profession. Evidenced-based practice is dependent upon rigorous and transparent methodology outlined in the manifestoes of professional organizations such as the American Counseling Association's (2014) Code of Ethics, the American Evaluation Association's (2004) Guiding Principles, and the Council for Accreditation of Counseling and Related Education Program's (2016) Standards. Research builds upon and expands the knowledge of a practice or topic and, without fail, is based upon prior research. Yet, conducting the literature review represents the most difficult component of the research process and is seldom discussed within the scope of methodology and ethical reporting standards. Regardless of research methodology (i.e., quantitative, qualitative, mixed methods), at some point, the research is linked to prior literature. Interestingly, when considering how long the practice of literature reviewing has been part of scholarship, it is surprising that reporting standards do not better affirm the importance of a systematic process for delineating and building upon prior research.

The American Psychological Association (APA) *Publication Manual* (2010) situates the concept of literature review as a "critical evaluation(s) of material that has already been published" (p. 10) and reveals that authors of literature reviews organize, integrate, and evaluate the state of research. To this end, when the goal of the literature review is to inform primary research, then the literature reviewer should conduct a series of literature reviews, as needed, throughout the conduct of the primary research (Onwuegbuzie & Frels, 2014). Indeed, as outlined by Onwuegbuzie and Frels (2016), the review of the literature can inform any or all of the 12 components of a primary research report: problem statement, literature review, theoretical/conceptual framework research question(s), hypotheses, participants, instruments, procedures, analyses, interpretation of the findings, directions for future research, and implications for the field. Simply put, a difficulty for many literature reviewers is to recognize that the literature review process does not end at the onset of the primary study. That is, the literature review typically should take place throughout the research process—before, during, and after the primary research study (Onwuegbuzie & Frels, 2016). As such, with very few exceptions (e.g., grounded theory research (Glaser & Strauss, 1967), wherein some proponents argue against an initial literature review before data collection), the literature review can be the most intense and time-consuming component of the research process, especially when the extant literature for the underlying topic is extensive.

A second difficulty of the literature review process stems from the fact that it is not a linear process (Onwuegbuzie & Frels, 2016). Even though the literature review typically precedes the primary research study in most instances, it is very common for research to oscillate between the primary research study and the extant information. This non-linearity adds complexity to the literature review process.

A third difficulty is that literature reviews cannot be value neutral (Onwuegbuzie & Frels,

2012). Indeed, in *every* case, literature reviewers make a series of decisions such as what sources are used to inform the literature review, what literature is included and excluded, what literature is emphasized or criticized, and so on. As such, any given literature review can be framed in numerous ways that reflect the value system of the literature reviewer.

With the valuable resources available via the Internet, a common misconception is that literature reviewers fail to recognize that salient information on a topic reaches beyond published works (Onwuegbuzie & Frels, 2016). Valuable information that informs literature reviews often can be gleaned from *unpublished* works. One example of such unpublished works is *grey literature* (or *gray literature*). Grey literature includes the following: reports (e.g., pre-prints, preliminary progress and advanced reports, technical reports from government agencies or scientific research groups, statistical reports, memoranda, market research reports, state-of-the art reports, working papers from research groups or committees white paper), conference proceedings, technical reports, technical specifications and standards, bibliographies, non-commercial translations, technical and commercial documentation, and official documents that have not published commercially such as government reports and documents (Alberani, Pietrangeli, & Mazza, 1990). As noted by Augur (1989), grey literature often is generated by organizations such as associations, county councils, churches, federations, institutes, laboratories, libraries, museums, private publishers, research facilities, societies, trade unions, universities, and other educational establishments. As such, for any given topic of interest, the literature review process can be extended greatly by reviewing grey literature. For example, in the field of counseling, preliminary research findings and cutting-edge findings are presented at the annual conferences for the Association of Counselor Education and Supervision, the American Counseling Association, and other established venues.

Because the literature review should represent more than a *summary* of the extant literature, a fifth difficulty of conducting a literature review is that researchers often fail actually to synthesize multiple sources. Unfortunately, many authors of research methodology textbooks fail to provide researchers in training the means to conduct an integrative review of literature (Onwuegbuzie & Frels, 2012). In addition to summarizing each work (i.e., body of information; e.g., research article, book, conference paper), a reviewer should evaluate each work before deciding whether to include the work in the literature review section of the final empirical report, or any other section of the report for that matter. More specifically, literature reviewers should interpret the collection of previous research findings through summarizing, analyzing, evaluating, and synthesizing (Onwuegbuzie & Frels, 2016). These four objectives—which, as a set, make the literature review complex—should be fulfilled in order to conduct a comprehensive literature review.

Further, and a sixth difficulty is that literature reviews involve much more than a *review of literature*, as its name falsely suggests (Onwuegbuzie, Leech, & Collins, 2011). In addition to reviewing printed and digital published and unpublished literature, reviewers should consider extracting knowledge to inform their literature reviews via such means as formally or informally interviewing (e.g., via face-to-face, email, Skype) experts in the topic area and reviewing visual data such as drawings, photographs, and videos (Onwuegbuzie & Frels,

2016). Reviewing information from these additional modes also increases the complexity of the literature review process.

A seventh difficulty of the literature review stems from the use of the literature review as a methodology (Onwuegbuzie & Frels, 2016) because, optimally, literature reviews provide a "coherent foundation for inquiry with tightly interconnected logics of justification, positioning, procedures, and rationales" (Greene, 2006, p. 94). Indeed, supporting this contention is the fact that, optimally, the literature review process involves the collection, analysis, and interpretation of both qualitative and quantitative data (i.e., information). For example, with respect to the analysis of information, optimally, the reviewer should be competent in conducting quantitative-based (e.g., meta-analysis; Glass, 1976), qualitative-based (e.g., meta-synthesis; Sandelowski & Barroso, 2003), and mixed research-based (e.g., meta-summary; Sandelowski & Barroso, 2003) syntheses.

These seven challenges make it surprising that the vast majority of graduate students do not receive any formal training on how to conduct and write literature reviews (Onwuegbuzie et al., 2011). Recently, several authors have attempted to make the literature review process more transparent by providing a step-by-step guide to conducting literature reviews (for a listing of these works, see Onwuegbuzie and Frels (2016)). However, although these works are very informative, virtually none of these textbooks provide explicit instructions as how to analyze and to interpret selected literature using existing data analytic techniques. However, there are two notable exceptions. Specifically, Onwuegbuzie, Leech, and Collins (2012) identified 17 qualitative data analysis techniques that are optimal for analyzing sources that inform a literature review. Further, Onwuegbuzie and Frels (2014) provided a step-by-step guide as to how discourse analysis can be used to analyze literature. However, many more works of this type are needed. Thus, the purpose of this article is to provide an extensive typology—mapping Saldaňa's coding methods—for analyzing information extracted for literature reviews.

2. Conceptual Framework

Saldaňa (2012), in his seminal book, identified 32 coding methods. These methods are summarized in Table 1. Saldaňa (2012) conceptualized these 32 coding methods as being representative of either the first cycle or second cycle, with one hybrid method lying in between them. According to Saldaňa (2012), *First Cycle* methods are coding strategies that occur during the initial coding of data, and which are sub-divided into the following seven subcategories (with their methods in parentheses): *Grammatical methods* (i.e., attribute coding, magnitude coding, subcoding, simultaneous coding); *Elemental methods* (i.e., structural coding, descriptive coding, in vivo coding, process coding, initial coding); *Affective methods* (i.e., emotion coding, values coding, versus coding, evaluation coding); *Literary and Language methods* (i.e., dramaturgical coding, motif coding, narrative coding, verbal exchange coding); *Exploratory methods* (i.e., holistic coding, provisional coding, hypothesis coding); and *Procedural methods* (i.e., protocol coding, outline of cultural materials coding, domain and taxonomic coding, causation coding). Conversely, the *Second Cycle* methods are coding strategies that "require such analytic skills as classifying, prioritizing, integrating,

synthesizing, abstracting, conceptualizing, and theory building" (p. 58), as follows: *Pattern coding*, *Focused coding*, *Axial coding*, *Theoretical coding*, *Elaborative coding*, and *Longitudinal coding*. Finally, *Theming the data,* which includes eclectic coding. lies in between the first and second cycles. Table 2 presents a summary of how each of Saldaňa's (2012) 32 coding methods can be applied to analyzing and interpreting information that inform literature reviews. In any case, the various attributes identified in the 32 coding methods reveal how a literature review might be framed to focus on any one or more areas when synthesizing prior research.

Table 1. A summary of Saldaňa's (2012) 32 coding methods

	Coding Method	Definition
1	Attribute Coding	Provide essential information about data for future reference
2	Axial Coding	Develop a category by grouping/sorting/reducing the number of codes generated from the first cycle of coding
3	Causation Coding	Analyze the causality by identifying causes, outcome, and links between them
4	Descriptive Coding	Describe the topic of data with descriptive nouns (i.e., topic coding)
5	Domain and Taxonomic Coding	Analyze the cultural knowledge participants use and organize them into categories and reorganize them through further analysis into a taxonomic tree diagram
6	Dramaturgical Coding	Apply dramaturgical terms to qualitative data to analyze interpersonal and intrapersonal participant experiences
7	Eclectic Coding	Combine two or more similar First Cycle of coding methods purposefully
8	Elaborative Coding	Develop codes to refine theoretical constructs emerged from previous research or investigations
9	Emotion Coding	Apply codes accompanying emotion(s) to explore the interpersonal and/or intrapersonal participants' experiences
10	Evaluation Coding	Apply non-quantitative codes (e.g., +/-) to qualitative data for the evaluative purpose
11	Focused Coding	Develop categories with significant or frequent codes that emerged from In Vivo, Process, and/or Initial Coding
12	Holistic Coding	Analyze the data corpus as a whole and identify the basic themes or issues in the data
13	Hypothesis Coding	Apply pre-established codes to qualitative data to examine a researcher-generated hypothesis
14	In Vivo Coding	Apply the words verbatim that participants use to examine the possible dimensions or ranges of categories

15	Initial Coding	Apply provisional and tentative codes in the First Cycle of coding
16	Longitudinal Coding	Organize collected qualitative data across time; Categorize data into matrices for further analysis and interpretation
17	Magnitude Coding	Apply supplemental or sub-codes to quantitize or qualitize the phenomenon's intensity, frequency, direction, presence, or evaluative content
18	Motif Coding	Apply original index codes utilized to classify the elements of folk talks, myths, and legends; This method can be utilized for story-based data such as journals or diaries
19	Narrative Coding	Develop codes representing participant narratives from a literary perspective (e.g., storied, structured forms)
20	Outline of Cultural Materials Coding (OCM)	It was created as a specialized index for anthropologists and archeologists; Provide coding for the categories of social life
21	Pattern Coding	Develop meta-codes that identify similarly coded data by grouping them and generate major themes; Appropriate for Second Cycle coding
22	Process Coding	Apply codes by using -ing words to indicate actions
23	Protocol Coding	Apply codes or categories in a previously developed system to qualitative data (e.g., ALCOH = alcoholism or drinking)
24	Provisional Coding	Utilize the preset codes emerged from preliminary investigations or literature review and anticipated to be modified, revised, or deleted during the data analysis
25	Simultaneous Coding	Apply two or more different codes to a single qualitative datum in the different dimensions
26	Structural Coding	Categorize the data corpus into segments by similarities, differences, relationships by using conceptual phrases
27	Subcoding	Develop sub-categories in the hierarchies and taxonomies added to the primary codes
28	Theoretical Coding	Develop the central category that covers all other codes and categories by integrating and synthesizing them
29	Values Coding	Apply codes consisting of three elements, *value, attitude,* and *belief* to examine a participant's perspectives or worldviews
30	Verbal Exchange Coding	Interpret data through the researcher's experience and reflection to explore cultural practices; Extensive written reflection is preferred to traditional margined coding methods
31	Versus Coding	Identify phenomena in a dichotomy terms and exhibit itself as X VS. Y
32	Theme, Theming the Data	Identify codes in the form of sentences capturing the essence and essentials of participant meanings

Table 2. A summary of Saldaňa's (2012) 32 coding methods mapped onto the literature review process

	Coding Methods	How to Apply to Literature Review
1	Attribute Coding	Apply Attribute Codes to log information about the literature (e.g., empirical/theoretical paper, qualitative/quantitative research/ academic disciplines). By utilizing Attribute Codes, previous studies can be sorted out by year, methodology (quantitative or qualitative), or journals. For example, a reviewer can identify the gap between years in terms of the number of conducted studies by organizing literature by Attribute Codes.
2	Axial Coding	Like Focused Coding, Axial Coding involves determining which codes stemming from the literature are dominant or less dominant to organize them systematically or thematically (e.g., crossing out, getting rid of redundant codes). Also, Axial Coding can be utilized to specify the dimension of categories generated by Focused Coding of the literature. Axial Codes can be utilized to identify different dimensions of constructs.
3	Causation Coding	Causation Coding can be utilized to analyze causality among variables, mediate variables, and outcomes in empirical reports. Causation Coding can be employed for both within- and between-literature analysis. Causation Codes can be created into a causation model.
4	Descriptive Coding	Descriptive Coding is applied with descriptive nouns, after the reviewer generates Descriptive Codes. Also, Descriptive Codes can be utilized for visual data. After generating descriptive codes, a reviewer can determine the frequency of Descriptive Codes by utilizing tools such as Word Cloud, a graphical representation of content analysis software programs (e.g., WordStat) or computer-assisted qualitative data analysis software programs (e.g., QDA Miner, NVivo, MaxQDA, ATLAS-ti) that facilitate the counting of words or codes. Examining Descriptive Codes might help a reviewer to identify "key words" to explore the topic.
5	Domain and Taxonomic Coding	Domain and Taxonomic Coding can be employed to analyze and to synthesize research findings by distinguishing relationships or patterns among terms used in the literature and by organizing them into a taxonomy.
6	Dramaturgical Coding	Dramaturgical coding involves items such as objectives, conflicts or obstacles, strategies to deal with conflicts or obstacles, strategies, attitude, emotions, and subtexts. Dramaturgical coding can be utilized to analyze text or talk data that inform a literature review and might be useful to understanding power relationship among constituencies.
7	Eclectic Coding	Eclectic Coding can be employed to generating themes. For example, codes previously generated through various coding methods such as Initial Coding can be selected and synthesized into themes or categories.
8	Elaborative Coding	Elaborative Coding can be applied at the stage of reflecting or evaluating

		the literature review process or product in order to refine theoretical constructs or themes.
9	Emotion Coding	Similarly to In Vivo codes, Emotion Codes can be utilized to analyze an author's feelings or mood about his/her research findings. For example, the emotion code, "surprising" can imply that the finding in the article was unexpected or new.
10	Evaluation Coding	Evaluation Codes can be generated to provide recommendations for further research and practice stemming from findings. By examining evaluation codes, a reviewer can identify the gap between previous and current studies and generate a research question(s).
11	Focused Coding	Focused Coding involves searching for the most frequent codes appearing in a body of works to develop the most prominent category or categories.
12	Holistic Coding	Holistic Codes can be utilized to grasp basic themes or issues as a whole. Holistic Codes can be generated by scanning Abstract or whole works and can be utilized to determine the relevancy of literature to the specific topic or searching criteria.
13	Hypothesis Coding	Hypothesis Codes can be applied to generate hypotheses in the current studies from between-literature analysis. A reviewer can analyze literature and find a relationship between two or more variables and generate Hypothesis Codes (e.g., Significant/Non-significant). By examining Generate Codes, hypotheses can be generated for the current study.
14	In Vivo Coding	In Vivo Codes can be applied to analyze the author's opinions usually found in the Discussion section by using words verbatim with "quotation marks." They can be interpreted to determine how authors reflect on their research findings.
15	Initial Coding	Initial Coding, referred as "Open Coding," can be employed when analyzing literature data with an open-ended approach and different coding methods if necessary. Open coding can be utilized both within- and across-literature data analysis.
16	Longitudinal Coding	Longitudinal Codes can be used to categorize previous articles and organize them across time. By utilizing longitudinal coding, a reviewer can identify how research paradigms or trends in the specific topic area have changed across time.
17	Magnitude Coding	Findings, especially from quantitative studies, can be summarized by using supplemental alphanumeric or symbolic codes indicating frequency, direction, presence, intensity, and so on. For example, information from qualitative and quantitative data can be coded by Magnitude Codes (e.g., 1 or 0, +/-, Positive/Neutral/Negative) for

		meta-analysis or meta-summary.
18	Motif Coding	Motif Coding involves repeated terms/words/phrases or characteristics throughout literature. Motif Coding can be patterned and analyzed possibly to determine the significant elements/events that can influence research findings.
19	Narrative Coding	Narrative Coding is especially relevant in qualitative research studies in general and narrative inquiries in particular. The form of coding involves developing codes that represent the participants' narratives from a literary perspective.
20	Outline of Cultural Materials Coding (OCM)	Outline of Cultural Materials Coding (OCM) is especially pertinent for literature representing the field of anthropology and archeology. OCM provides coding for ethnographic studies.
21	Pattern Coding	Pattern Coding can be employed to find patterns or relationships among previously generated codes by analyzing commonalities and grouping them by similarities.
22	Process Coding	Process codes, referred as "action codes" can be utilized to represent research procedures that authors employed in their studies, yielding a within-study literature analysis.
23	Protocol Coding	Protocol Coding involves using a priori codes or categories to code the literature.
24	Provisional Coding	Provisional Codes, referred to as "preset codes," can be applied to search words for the purpose of exploring information about a potential topic or determined topic.
25	Simultaneous Coding	When exploring a new topic, multiple codes can be applied to the same datum to add multi-dimensional perspectives.
26	Structural Coding	Structural Coding can be utilized to label literature so that a reviewer can access the literature review data quickly. For example, Structural Codes such as "theory" and "methods" or "Stage 1" or "Stage 2" representing research components or research stage can be used to sort out literature. Categorizing literature by Structural Codes will make a reviewer access literature easier at each stage of research process.
27	Subcoding	Researching findings can be summarized by using Subcodes in the taxonomy and hierarchy format if needed.
28	Theoretical Coding	Theoretical Coding can be utilized to integrate or to synthesize themes or categories by linking all categories and subcategories and reorganizing them. Theoretical Codes can be core themes or constructs for the literature review.
29	Values Coding	Values coding can be utilized to reflect an author's value system, comprising three elements: value, attitude, belief. These codes can be interpreted to evaluate the research findings, for example, by assessing

		the degree to which the author's value system impacted the research findings and interpretations, especially in the topic areas such as gender and ethnic studies.
30	Verbal Exchange Coding	Verbal Exchange Coding involves interpreting data through the researcher's experience and reflection to explore cultural practices of the researcher. Typically, this coding involves extensive written reflection.
31	Versus Coding	Versus coding can be applied to identify different patterns or perspectives by dichotomous groups, individuals, or concepts. They can be applied within- or across-literature. For example, when reviewing articles about the topic, "barriers to doctoral student completion," a Versus Code, "Professor vs. Student" can be generated because professors and students might have different perspectives in perceiving barriers to doctoral student completion.
32	Theme, Theming the Data	Theming the data involves selecting/deselecting codes to generate a theme. Theming the data can be utilized for between-literature analysis.

3. Heuristic Example Using Saldaňa's Coding Methods

Stage 1. In interpreting the body of knowledge about school-based mentoring (SBM), Frels (2010) conducted a comprehensive literature review—along the lines of Onwuegbuzie and Frels (2014). By comprehensive, it is not suggested that a literature review can be exhaustive toward a totality of literature on any given topic. Similar to that of a primary research study, the literature reviewer-as-researcher must bind the study and document some guiding criteria when doing so. As such, a literature review should be comprehensive inasmuch as it involves the use of rigorousness techniques to search and to collect information sources. Specifically, six search phases were conducted, which comprised five search phases wherein the mentoring literature was retrieved through various bibliographic searches and a sixth search phase representing an extension of the first five phases that involved interviewing experts from the field of mentoring and research methodology to identify additional literature. In each of the six search phases (see also, Frels & Onwuegbuzie, 2010), relevant articles were delineated using criteria that focused on her research questions. The six search phases yielded 47 salient articles.

Stage 2. After the 47 articles had been identified and extracted (Stage 1), the next stage involved storing and organizing this set of 47 sources. As recommended by Onwuegbuzie and Frels (2016), we stored and organized these sources using electronic means. Specifically, we imported all 47 works into QDA Miner 3.0.2 (Provalis Research, 2011), a qualitative data analysis software (CAQDAS) program. Although there are several CAQDAS programs available (e.g., ATLAS-ti 7.0, HyperRESEARCH 3.5, MAXQDA 11, NVivo10, Transana 2.42, Qualrus), QDA Miner was most useful because it allowed both a qualitative and quantitative data analyses of qualitative data. That is, QDA Miner allows analysts to conduct a mixed analysis, which at its most basic form, involves combining both quantitative and qualitative analytical techniques to some extent within the same framework (see, for e.g.,

Onwuegbuzie & Combs, 2010).

Stage 3. Once we had uploaded all of the sources into QDA Miner, we had the option of coding all 47 works or one or more subsets of these works. Also, for each work, we had the option of coding the whole work or one or more segments of the work. For the purpose of this example, although we could have coded all 47 works, we chose to code the *Results and Discussion* sections of all the works that represented *qualitative research studies* among the set of works. Indeed, this strategy has intuitive appeal, especially when the quantitative research studies from the set of works have been subjected to a meta-analysis. Thus, our choice of subjecting only the qualitative research studies to Saldaňa's 32 codes represented a purposive sample—specifically, a criterion sample (Miles & Huberman, 1994). And criterion sampling—or any of the other 18 purposive sampling schemes identified by Onwuegbuzie and Collins (2007) (e.g., maximum variation sampling; i.e., selecting works to maximize the range of perspectives investigated in the extant literature)—can be used to obtain a set of works that then are subjected to coding via one or more of Saldaňa's 32 codes. In fact, Saldaňa's codes can be applied to a single work! In using Saldaňa's codes, what is most important is not how many works are coded but rather whether some form of saturation (cf. Morse, 1995) is reached—whether it be *data saturation* (i.e., occurring when the Saldaňa coding leads to information [e.g., codes, sub-themes, themes, meta-themes] that occurs so repeatedly that the literature reviewer can anticipate it and whereby the coding of more works appears to yield no additional interpretive worth; cf. Sandelowski, 2008, Saumure & Given, 2008) or *theoretical saturation* (i.e., occurring when the Saldaňa coding leads the literature reviewer to assume that her/his emergent theory that stems from the extant literature is adequately developed to fit any future works that are subjected to the same Saldaňa coding; cf. Sandelowski, 2008).

Of the 47 works, 23 of them represented primary research studies; of these 23 empirical works, seven represented qualitative research studies (i.e., Buell, 2004; Kilburg, 2007; Lucas, 2001; Ryan, Whittaker, & Pinckney, 2002; Shelmerdine & Louw, 2008; Spencer, 2006, 2007). Thus, these seven articles—constituting the *population* of published qualitative research studies on mentoring relationships at the elementary school level at the time that the comprehensive literature review was conducted—were separated from the remaining 40 works as one individual QDA Miner project. Interestingly, Guest, Bunce, and Johnson (2006) demonstrated empirically that qualitatively analyzing information from six cases can be "sufficient to enable development of meaningful themes and useful interpretations" (p. 78). Also, Creswell (2013) concluded that four to five cases are sufficient for a case study design. As such, our use of seven qualitative research studies appeared to be justified. It should be noted that although all seven works represented pdf files, QDA Miner could import numerous file formats such as Microsoft Word, Microsoft Excel, Microsoft Access, Paradox, dBase, SPSS, and numerous CAQDAS programs (e.g., NVivo, ATLAS-ti, Transana), and it can extract numeric and alphanumeric values.

Stage 4. For this new project of seven qualitative research articles, our next step was to set up the codes a priori using Saldaňa's 32 codes (see Table 1). Figure 1 shows a QDA Miner screenshot of a portion of these 32 codes.

Stage 5. Once we established the a priori codes, our next task was to code each source (i.e., *n* = 7; within-case analysis). We undertook this by reading the Results and Discussion sections of each qualitative research article as many times as was needed and identified words, phrases, sentences, or paragraphs that indicated one or more of Saldaňa's 32 codes. Figure 1 also illustrates a priori coding on one page of one article using several of Saldaňa's codes.
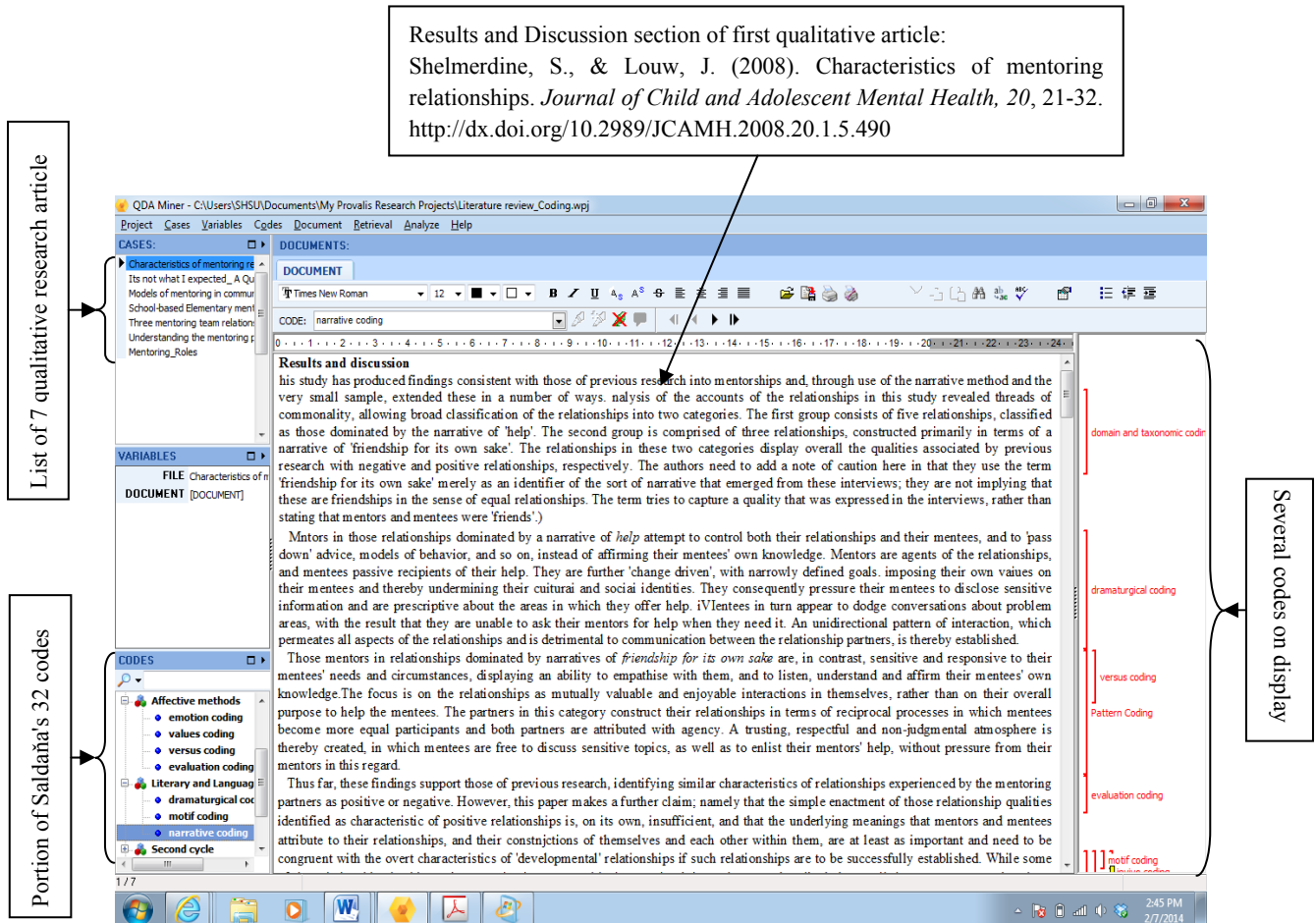

Figure 1. Screenshot showing a priori codes represented by Saldaňa's 32 codes

Stage 6. Our next step was to conduct a cross-case analysis. In this particular example, a cross-case analysis involves comparing and contrasting the coding of Saldaňa's 32 codes across the seven mentoring-based qualitative research studies. Each qualitative research article represented a case—yielding seven cases (i.e., representing what Stake (2005) referred to a *collective case study* and what Yin (2014) referred to as a *multiple case study*). Our first analysis approach was classical content analysis (Berelson, 1952), which we used to determine the frequencies of each of Saldaňa's 32 (a priori) codes. Our classical content analysis revealed that 11 of Saldaňa's 32 codes were utilized across the seven articles (see Table 3). An examination of Table 1 helps to explain why not all of Saldaňa's codes were relevant. As previously noted, only the *Results and Discussion* sections of each qualitative

research article were coded. Yet, several of Saldaňa's codes could be pertinent for other components of empirical articles. For example, *process coding* involves process codes that can be used to represent research procedures that authors employed in their studies. Thus, process coding is much more likely to be used in the *Method* section of empirical research articles than in the *Results and Discussion* sections. Interestingly, the two most frequent coding methods were *dramaturgical coding* and *narrative coding* (see Table 3), which both fell under the subcategory *Literary and Language methods*.

Table 3. Screenshot Showing Results From The Classical Content Analysis of Saldaňa's 32 Codes

Next, using Miles and Huberman's (1994) book as a framework (see also Miles, Huberman, & Saldaňa, 2014), we created cross-case displays to inform the cross-case analysis: partially ordered displays, case-ordered displays, and conceptually ordered displays. Of particular note was the correspondence analysis, which is a multivariate analysis and graphical technique that allows us to conduct a cross-case analysis (i.e., a form of case-ordered display) of Saldaňa's codes. A correspondence analysis is an exploratory multivariate technique that involves factoring categorical (i.e., nominal level) variables and graphing them (i.e., mapping them) in a property space that displays their associations in two or more dimensions. The QDA Miner 4.0.3 software program (Provalis Research, 2011) generated the correspondence analysis based on the established codes of each case.

Figure 2 illustrates the seven qualitative research articles mapped, via correspondence analysis, onto the space that displays the Saldaňa's codes that were used to code one or more of these articles. This figure demonstrates how the articles related to each other in regard to these Saldaňa's codes. For example, it can be seen from Figure 2 that the qualitative research study conducted by Spencer (2006), which is located close to the origin, clusters around the following three subcategories of Affective methods: values coding, versus coding, and evaluation coding. In contrast, the qualitative research studies conducted by Lucas (2001) and Spencer (2007) cluster closer to the following two Literary and Language methods: dermaturgical coding and narrative coding. Further, the qualitative research studies by Buell (2004) and Kilburg (2007) are clustered around both the Affective methods and Literary and Language subcategories, as well as the Procedural method subcategory of domain and taxonomic coding.
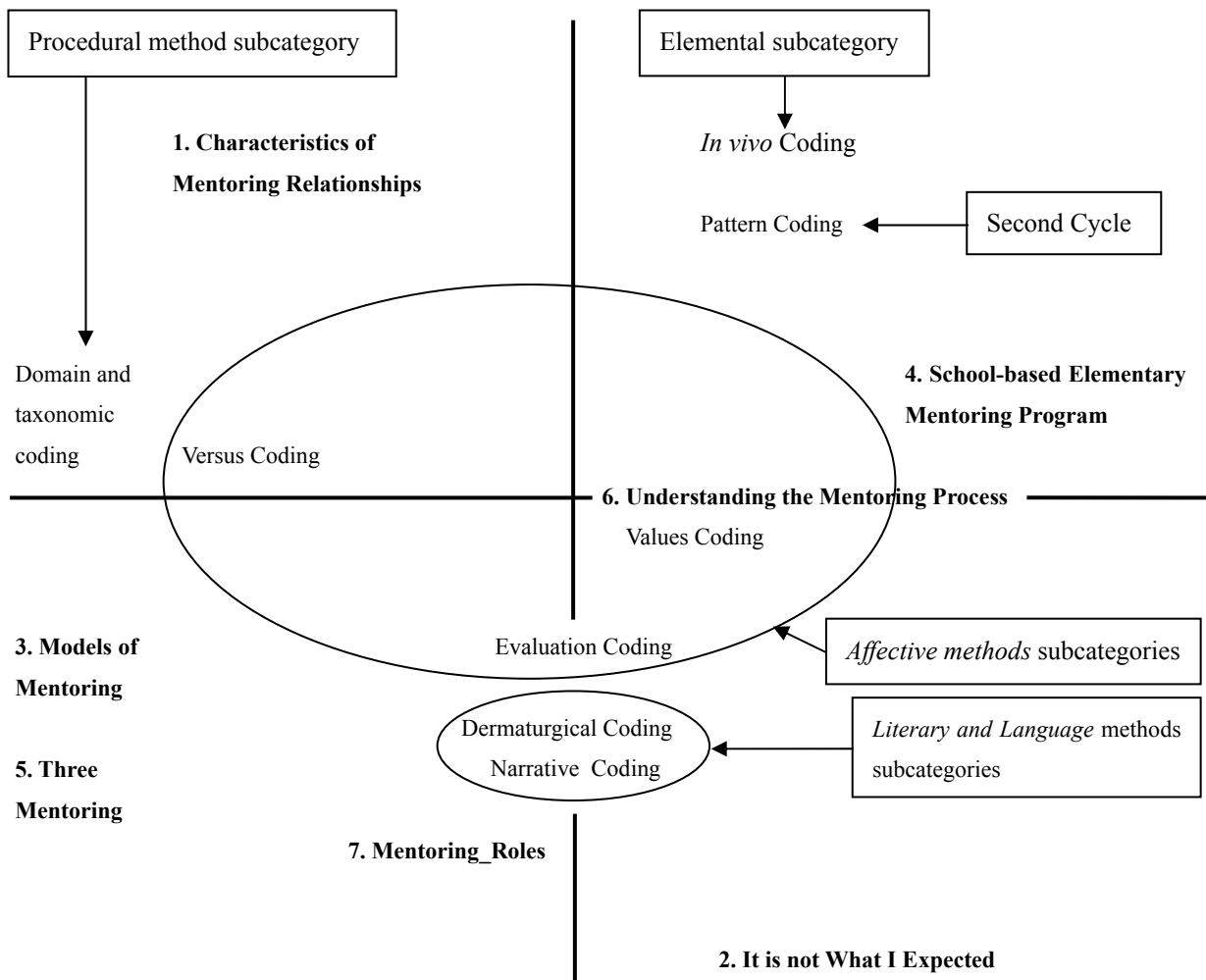

Figure 2. Correspondence analysis plot of the 11 Saldaňa codes. The seven articles are numbered and are presented using boldface text

Each of the 11 Saldaňa's codes was related to each other via a dendogram (not presented due to space restrictions). This figure, which confirmed the correspondence plot, revealed that when an article was coded via dermaturgical coding, it also tended to be coded via evaluation coding, narrative coding, and values coding—correlating Affective methods and Literary and Language methods. Another dendogram (also not presented) was used to display the seven qualitative research articles that we used during the literature review coding process. In particular, this figure paired the Shelmerdine and Louw (2008) and Kilburg (2007) articles, the Spencer (2007) and Lucas (2001) articles, and the Ryan et al. (2002) and Spencer (2006) articles.

For the present example, using Saldaňa's (2012) 32 coding methods to analyze the seven qualitative articles that formed a subset of the 47 articles identified by Frels (2010) led us to make several meta-inferences (i.e., inferences from qualitative and quantitative findings being integrated into either a coherent whole or two distinct sets of coherent wholes; Miles & Huberman, 1994) regarding this body of works. For example, our coding led us to the conclusion that the affective needs of mentees are central (see, for e.g., the central role that affective methods played in the correspondence plot in Figure 2)—which reiterates the importance of the mentoring *relationship*, consistent with Karcher's (2005) findings.

4. Conclusions

As demonstrated in the exemplar presented, the literature review process can be a transparent and meaningful analysis of multiple works. By using one or more of Saldana's coding areas and a systematic approach such as the one highlighted in our stages of analysis, counselor researchers and educators are attending to greater rigor and integrity when translating prior research for use. In addition to the many myths of the literature review (Onwuegbuzie & Frels, 2016), it is also likely that many literature reviews, which often serve as foundational background for a reader's understanding, fall short of multiple credibility standards of qualitative inquiry—especially those outlined by Guba and Lincoln (1989). These criteria can be mapped onto the literature review process: (a) *fairness* (i.e., the extent to which the value structures and constructed ideas are honored throughout the evaluation process); (b) *ontological authenticity* (i.e., the degree that the literature reviewer's level of awareness and application to diverse populations has been impacted); (c) *educative authenticity* (i.e., the degree that the literature reviewer is aware of but not necessarily in agreement with the constructions and values of other stakeholders; (d) *catalytic authenticity* (i.e., the degree that the literature reviewer's awareness of new constructions or thoughts regarding other stakeholders' positions evolves into decisions and actions); and (e) *tactical authenticity* (i.e., the degree that, as a result of engagement, the literature reviewer presents finding that lead to empowerment to act). Unless the literature review is subjected to some type of systematic analysis, it is much more susceptible to the human condition of confirmation bias, or the tendency to extract information that only endorses the author's opinion. Much like the discussion prompted by Skidmore and Thompson (2012) in their article: Propagation of misinformation about frequencies of RFTs/RCTs in education: A cautionary tale, the literature review is similarly at risk of misinformation.

5. Implications

The *Standards for Reporting on Empirical Social Science Research in AERA Publications* (AERA, 2006) provides some guidance for the counseling profession regarding reporting criteria in research. These standards provide pertinent guidelines to support the use of Saldana's coding for literature reviews: (a) First, reports should be *warranted;* that is, adequate evidence should be provided to justify the results and conclusions; and (b) Second, reports 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, 2006, p. 33). Using the Saldaňa coding process to analyze information for a literature review is consistent with AERA's (2006) principles for reports being *warranted and transparent.* To this end, literature reviews in the field of counseling would be treated much like secondary data—qualitative data that present some quantitative findings.

Specifically, Saldana's coding approach and subsequent displays help to address two salient characteristics for the counseling profession outlined in the *ACA Code of Ethics* (2014) *Reporting Results*: (a) accurate reporting and (b) attention to diverse populations. Section G.4. puts forth that counselors "plan, conduct, and report research accurately" and that they "describe the extent to which results are applicable for diverse populations" (p. 16). To this end, Levers et al. (2008) underscored the way in which qualitative research methodology—which we applied to the literature review—attends to diversity. They recognized the need for counselor educators to examine the postpositivist paradigm that has been much the part of training models in the field, as well as the need for the major counseling journal reviewers and editors to be proactive in publishing rigorous qualitative inquiry.

Regardless of whether a literature review supports a quantitative, qualitative, or mixed research tradition, the literature review is a translation process that should be respected by consumers of research. In fact, counselor practitioners depend upon the sound, relevant information extracted from research to attend to professional development for working with diverse populations.

Another implication pertains to counselor educators, who might recognize and apply Saldana's values coding (i.e., the three elements of *value, attitude,* and *belief* to examine a participant's perspectives or worldviews) to address what Manis (2014) described as critical consciousness in counselor education. This concept promotes advocacy competence, social justice advocacy, and cultural competence across multiple courses for the practice of social justice within counselor education and supervision programs. By applying Saldana's coding techniques to examine literature in coursework, students might better recognize the values and belief systems that are inherent in empirical research and other works. As noted by Limberg et al. (2014), counselor educators might address and develop counselor identity as researchers. Certainly, the use of a systematic approach using Saldana's coding methods will distinguish counselors as leaders in research, as wells as leaders in teaching and supervision.

The attributes of (a) research as responsibility and (b) development of the researcher (Limberg et al., 2014) can be facilitated by the use of one or more of Saldana's 32 coding methods in the literature review process.

6. Summary and Conclusions

When considering that most journal articles depend in some way upon the way that a writer interprets prior research, it is surprising that scant guidance prevails for counselor researchers and educators on how to analyze sources that inform a literature review. To this end, to build on Onwuegbuzie and Frels's (2014) use of discourse analysis for the literature review, we have provided a framework for using Saldaňa's (2012) 32 coding methods to analyze and to interpret information that stems from a literature review. Specifically, we outlined a 6-stage Saldaňa coding process, as follows:

1) Identifying and extracting relevant works from the extant literature to analyze and synthesize.

2) Storing and organizing these works—optimally using a CAQDAS program.

3) Determining what subsets of these works to code, as well as what components of each selected work (i.e., whole work vs. part of the work) to code.

4) Determining which of Saldaňa's 32 codes to use a priori.

5) Coding each work using the selected Saldaňa codes.

6) Conducting a cross-case analysis (cf. Miles & Huberman, 1994; Miles et al., 2014) of the inferences (e.g., categories, sub-themes, themes, meta-themes) that emerge from the Saldaňa coding process.

We contend that our 6-stage Saldaňa coding process allows both beginning researchers and more experienced researchers to map the qualitative coding process onto the literature review process, resulting in a more rigorous and focused review of the literature and, subsequently, a stronger foundation for a relevant, evidence-based rationale for presenting background on a topic via the literature review. However, what is most appealing about the 6-stage Saldaňa coding process is that not only is it useful for counselor researchers, but also researchers representing all other fields from the social, behavioral, and health sciences can benefit from using Saldaňa's coding process—a point recently echoed (i.e., during a qualitative research workshop conducted by the lead author at the University of South Africa [UNISA]) by Dr. Brigitte Smit (personal communication, March 10, 2016), a prolific Research Professor (Department of Educational Leadership and Management, College of Education, UNISA), who as an ATLAS-ti (another CAQDAS program) Consultant for Africa, trains numerous researchers how to use Saldaňa's codes to analyze works extracted from the literature review process.

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