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Abstract

Qualitative research is a rich and diverse discipline, yet novice qualitative researchers may struggle in discerning how to approach their qualitative data analysis among the plethora of possibilities. This paper presents a foundational model that facilitates a comprehensive yet manageable approach to qualitative data analysis, and it can be applied within an array of qualitative methodologies. Based on an exhaustive review of expert qualitative methodologists, along with our own experience of teaching qualitative research, this model synthesises commonly-used analytic strategies and methods that are likewise applicable to novice qualitative researchers. This foundational model consists of four iterative cycles: The Inspection Cycle, Coding Cycle, Categorisation Cycle, and Modelling Cycle, and memo-writing is inherent to the entire analysis process. Our goal is to offer a solid foundation from which novice qualitative researchers may begin familiarising themselves with the craft of qualitative research and continue discovering methods for making sense of qualitative data.

Keywords

Qualitative Data Analysis, Method, Teaching, Novice Qualitative Researchers

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Demystifying Qualitative Data Analysis for Novice Qualitative Researchers

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Qualitative research is a rich and diverse discipline, yet novice qualitative researchers may struggle in discerning how to approach their qualitative data analysis among the plethora of possibilities. This paper presents a foundational model that facilitates a comprehensive yet manageable approach to qualitative data analysis, and it can be applied within an array of qualitative methodologies. Based on an exhaustive review of expert qualitative methodologists, along with our own experience of teaching qualitative research, this model synthesises commonly-used analytic strategies and methods that are likewise applicable to novice qualitative researchers. This foundational model consists of four iterative cycles: The Inspection Cycle, Coding Cycle, Categorisation Cycle, and Modelling Cycle, and memo-writing is inherent to the entire analysis process. Our goal is to offer a solid foundation from which novice qualitative researchers may begin familiarising themselves with the craft of qualitative research and continue discovering methods for making sense of qualitative data. Keywords: Qualitative Data Analysis, Method, Teaching, Novice Qualitative Researchers

Qualitative data analysis possibilities are vast and varied, and choosing the right combination of research methodologies, data collection instruments, and analysis methods can be a daunting task, especially for newcomers to the world of qualitative research. While the liberty that qualitative researchers have keep the field rich and diverse, too much liberty can be frustrating for students and paralyse them if they do not know how to effectively move forward. The "craft" of qualitative research is best learned by doing, which also means making decisions, mistakes, and having the patience for understanding to clarify with time and practice. Alongside this, there is a notable rise in students' interest and demand for qualitative research, which highlights the need for more guidance on teaching qualitative data analysis methods to novices (Forrester & Koutsopoulou, 2008; Harper, 2012; Ponterotto, 2005). We have been teaching qualitative research to undergraduate psychology students for over five years, and we consistently see their confusion, frustration, and even fear about how to approach their data. The rich variety of qualitative analysis possibilities is a great strength of qualitative research, but "for novices, data analysis may be the most mysterious aspect of qualitative research" (Maxwell, 2013, p. 105).

In an effort to help novice qualitative researchers, we have elaborated a model that synthesises common features across qualitative analytic methods so as to provide a widely-applicable yet easy-to-follow guide. In class, we introduce and reflect on various methods of qualitative data analysis, so that students are aware of the breadth and depth of the field; if students find a certain analytic method more appropriate for their analysis, we encourage them to adopt it in their study. If students are unsure of how to choose one method over another, they can count on our qualitative data analysis model for a solid foundation to guide them through their first qualitative study. This model combines both inductive and deductive approaches to analysing qualitative data. We sought to adopt the powerful inductive strategies of grounded theory (Charmaz, 2006; Glaser & Strauss, 1967) within a relatively

more manageable approach by mixing inductive and deductive strategies, as previous experts have likewise done (such as Miles, Huberman, & Saldaña, 2014; Tracy, 2013). We also incorporate memo-writing throughout the analysis in order to foster the development of the reflexive and critical thinking skills that are so valuable to qualitative research (Levitt, Kannan, & Ippolito, 2013; Mitchell, Friesen, Friesen, & Rose, 2007). The purpose of this paper is to provide a detailed description of this foundational model so that other interested researchers, students, or teachers may adopt this qualitative data analysis method in their own work.

An Overview of Qualitative Data Analysis Methods

We understand qualitative data analysis methods as the explicit and systematic methods that qualitative researchers use to draw conclusions; these methods need to be "credible, dependable, and replicable in qualitative terms" (Miles, Huberman, & Saldaña, 2014, p. 5). In this section, we outline the main similarities and differences across qualitative data analysis methods, in order to provide a global overview of what typical qualitative analysis methods may entail.

Similarities Across Qualitative Data Analysis Methods

The majority of qualitative researchers value the importance of being simultaneously involved in both data collection and data analysis (Braun & Clarke, 2013; Charmaz, 2006; Creswell, 2007; Maxwell, 2013; Miles, Huberman, & Saldaña, 2014; Silverman, 2014). In the words of Miles, Huberman, and Saldaña (2014, p. 70), this simultaneous involvement permits a "healthy corrective for built-in blind spots," resulting in not only a richer analysis but a more compelling one, if the analyst uses the first waves of data collection to verify, shape, and further build their understanding of the dataset.

Perhaps the most notable similarity across the majority of qualitative analysis methods is the identification of themes, patterns, processes, and/or profiles (Creswell, 2007; Coffey & Atkinson, 1996; Dey, 1993; Miles, Huberman, & Saldaña, 2014; Seidman, 2006). This is achieved by searching for patterns or regularities across the data, which is most typically done by comparing and contrasting the data segments and thus delineating the overarching themes, patterns, and/or processes (Flick, 2009). For example, in their seminal book, Glaser and Strauss (1967) present the constant comparative method of qualitative data analysis, which combines the explicit coding procedures of hypothesis-testing type approaches with the practices of theory-generating approaches. Although qualitative data analysis methods may vary in the exact tactics for identifying trends in the data, this feature is nearly always present.

To make sense of overarching patterns in a dataset, many qualitative researchers advocate creating thematic maps, matrices, and/or networks (i.e., figurative or tabular representation of analysis; Braun & Clarke, 2013; Corbin & Strauss, 2015; Dey, 1993; Flick, 2009; Maxwell, 2013; Miles, Huberman, & Saldaña, 2014; Wolcott, 1994). By displaying data in easily accessible maps or networks, the analyst not only organises all the information, but they can also examine the overall picture, discern how categories and concepts are related, and draw conclusions. Creating a conceptual framework from existing literature is another common feature across qualitative data analysis approaches (Maxwell, 2013; Miles, Huberman, & Saldaña, 2014). Such conceptual frameworks are constructed, rather than simply being found in an existing study, meaning that the researcher has to analyse and synthesise this previous information, thus laying the foundation for the data collection and analysis (Miles, Huberman, & Saldaña, 2014). The process of elaborating these different

kinds of displays inherently involves analysis and interpretation thus facilitating meaning-making.

One of the most widely used tactics across all qualitative research is the practice of coding. Codes are essentially short descriptive or inferential labels that are assigned to data segments in order to condense and categorize the dataset (Miles, Huberman, & Saldaña, 2014; Saldaña 2013). There are diverse coding methods put forth by various qualitative methodologists, and qualitative researchers often either choose the coding methods appropriate for their study or they follow the recommended coding methods of their given methodology. Although terminology may differ according to the different approaches, there are certainly some parallels: open coding in grounded theory, for example, is akin to identifying significant statements in phenomenology, which is likewise similar to categorical development in case study research (Creswell, 2007). A common "end point" of coding is theoretical saturation—reaching the point at which no new knowledge is generated (Braun & Clarke, 2013; Denzin & Lincoln, 2005; Flick, 2009). Once the data has sufficiently "saturated" the analyst's theoretical understanding, the researcher may proceed to map out the descriptions and relations of each category, draw (tentative) conclusions, and verify these conclusions to ensure they represent the data and provide meaningful interpretations for answering the research question(s).

Differences Across Qualitative Data Analysis Methods

The process of qualitative data analysis is in constant flux: no two methodologies are carried out in the exact same way, as each study and corpus of data are unique (Miles, Huberman, & Saldaña, 2014; Patton, 2002). The literature review, for example, is a part of nearly any research project, but when and how it is carried out can differ. For example, grounded theorists aim to generate a theory inductively, so the literature review is delayed until the researcher has developed a conceptual analysis of their data (Charmaz 2006; Corbin & Strauss, 2015; Glaser & Strauss, 1967; Strauss & Corbin, 1990). Other analytic methods, in contrast, integrate the literature review from the very beginning, often advising an iterative approach to reading the literature and analysing the data, so that the developing analysis can be informed by and contrasted to existing research (Braun & Clarke, 2013; Miles, Huberman, & Saldaña, 2014).

Along these lines, qualitative analysis methods can be distinguished by their focus on inductive or deductive analyses (Creswell, 2007; Given, 2008; Miles, Huberman, & Saldaña, 2014). Researchers can use deductive strategies to discern the extent to which their data supports or contends current theoretical or conceptual knowledge. Thus, deductive analyses are commonly used to "test" theories. Inductive strategies can be used to analyse data "from the ground up," and they are commonly used to "generate" theories. Many qualitative studies use some form of inductive analysis (Yin, 2011), but perhaps the most notable is the grounded theory approach to qualitative data analysis (Glaser & Strauss, 1967). In reality, both deductive and inductive strategies may be adequately combined to facilitate a foundational understanding of the topic (via a literature review, for example) whilst allowing new, unanticipated information to emerge from the dataset.

The process of writing memos may also differ across qualitative analysis methods. Memoing can encompass the researcher's process of making sense of the data through reflexive notes, analytic ideas, and documentation of the developing research. Thus, memos often form an integral part of the qualitative analysis process (Braun & Clarke, 2013; Given, 2008; Glaser & Strauss, 1967; Miles, Huberman, & Saldaña, 2014). Beyond this basis, the types and functions of memos may greatly vary. For example, researchers could use initial memoing during open coding to help conceptualize incidents, followed by theoretical

memoing to transfer between substantive codes and theoretical codes (Glaser, 2005). Alternatively, "stand-alone" memos can be used for different specific purposes, such as the research diary, team work memo, idea memo, code memo, theory and literature memo, and research questions memo (Friese, 2014). Instead of using memos for organizing a project, others suggest using purely analytic memos (Charmaz, 2006; Saldaña, 2013; Tracy, 2013). In some cases, memos are dedicated to the development of emergent categories (Charmaz, 2006), while in other cases, memos are used from the very beginning of data collection all the way through the verification of the conclusions (Miles, Huberman, & Saldaña, 2014). While memo-writing is inherent to most qualitative studies, each researcher can adapt different memoing strategies according to their methodology and research aims.

Perhaps the most notable difference across qualitative data analysis methods comes down to how the data are coded. Codes can be used to identify recurring patterns, organise the chunks of data that go together, and trigger deeper reflection on the data's meaning. The actual process of coding data, however, can be as varied as the data itself. Some qualitative methodologies provide clear coding guidelines, for which grounded theory is particularly distinguished (Corbin & Strauss, 2015; Glaser, 2005; Glaser & Strauss, 1967; Strauss, 1987; Strauss & Corbin, 1990), while other methodologies leave the coding methods much more open-ended, as in the example of thematic analysis (Braun & Clarke, 2013). Saldaña (2013) outlines up to 29 different coding methods in his cornerstone manual, many of which can be compatibly mixed and matched, so analysts may choose which ones will help them answer their research questions (Saldaña, 2013). Charmaz (2006) suggests coding line-by-line, in order to focus the researcher's attention on the data and keep an open mind to any emerging nuances. Gibbs (2007) advocates systematic comparison of codes to develop more interpretative, rather than descriptive, analyses. Miles and Huberman follow Saldaña's approach, whereby coding is divided into two main stages: First Cycle codes are those that are initially assigned to the data, while Second Cycle codes build on these initial codes and group them into meaningful categories, themes, or constructs (Miles, Huberman, & Saldaña, 2014). Ultimately, the coding methods may depend on the research questions and nature of the study, which is why this is one of the most variable points across qualitative data analysis.

Finally, qualitative data analysis methods can differ in their applicability to those who are new to qualitative research. Given the interpretative nature of qualitative analysis, certain methods are generally easier to grasp for novices while others are considerably more complex and thus better understood by more experienced qualitative researchers. Researchers today are making efforts to outline methods more suitable for novice qualitative researchers. Silverman (2014), for example, offers a thorough review of different qualitative analysis methods, including content analysis, grounded theory, and narrative analysis, along with exercises to help students apply the different principles. However, the rich breadth and openness of the approach can be paradoxically challenging for students—or "potential" researchers—who are simply seeking guidance on how to approach their qualitative research (Kalekin-Fishman, 2001). Wolcott (1994), on the other hand, gives advice for teaching qualitative analysis, although his practical advice focuses more on teaching ethnographic analyses to graduate students, thus providing more depth but less breadth in regard to qualitative data analysis across research areas. Dey (1993) puts forth a pragmatic guide for students—explaining the iterative spiral of qualitative data analysis through collecting, describing, classifying, and connecting data—and he focuses on applying this to qualitative data analysis software. Braun and Clarke (2013) have developed a practical guidebook that walks researchers through the processes of thematic analysis, interpretative phenomenological analysis, and pattern-based discourse analysis, as these are very common practices that are likewise relatively accessible to those who are new to qualitative research. They particularly focus on thematic analysis in guiding new researchers through their first try

at qualitative data analysis, although they do also outline other methods that require more advanced skills in order to give the reader a sense of the wider scope and diversity of qualitative analysis, including methods of discursive psychology, conversation analysis, and narrative analysis. Gibbs (2007) provides practical information for students on how to deal with textual data, and he provides an effective overview of basic analytic processes which are organised in five steps: data preparation, data extension, coding, comparing, and writing a report. Miles, Huberman, and Saldaña's (2014) approach involves three main stages—data condensation, data display, and conclusion drawing and verification—and the authors likewise take the time to point out the coding and analytic strategies that are better suited for novice researchers, such as In Vivo coding and Initial coding. Given the breadth of possible approaches to qualitative analysis for novices, we set out to provide guidelines that integrate the advice of multiple qualitative research experts into an easily understandable model.

Proposing a New Model for Qualitative Data Analysis

The qualitative data analysis model outlined here was developed to teach students how to carry out qualitative data analysis by following a series of iterative cycles that synthesize the main tactics found across qualitative approaches suitable for novice researchers. As a result, this model can provide a strong foundation for almost any qualitative research, but it is also reduced to the most essential points, thus making it relatively easier to grasp. Once students have actually experienced analysis, they can then "take a step back" and reflect on the analysis to meaningfully develop understanding; the next time they embark upon a qualitative research project, they will already have a clearer idea of what to expect and how to go about their analysis. Our goal is to give students more confidence and knowledge and thus be able to make better-informed methodological and analytic decisions in the future.

In keeping with the majority of qualitative researchers, we view the simultaneous involvement in both data collection and data analysis as fundamental for the analyst to develop their understanding of the data and continue collecting meaningful data in order to effectively answer their research questions (Braun & Clarke, 2013; Charmaz, 2006; Creswell, 2007; Maxwell, 2013; Miles, Huberman, & Saldaña, 2014). In other words, analysis begins as soon as data collection starts. Our model focuses on the analysis of this data, guiding novice qualitative researchers through the process of making sense of their data.

The approach is inductive-deductive, following the elaboration of a conceptual framework based on a comprehensive literature review that guides subsequent data collection and analysis but still leaves space for unanticipated information to emerge. We believe that beginning with inductive analyses is important because we want to encourage novices to immerse themselves in their data with an open mind and to consider various possible interpretations and theoretical directions, rather than concentrating on what they found in the literature. The subsequent deductive analyses, then, foster the novices' sense-making of the dataset as they contrast their initial analyses with previous studies. We value the combination of both inductive and deductive strategies, because it provides an approach that is comprehensive yet manageable for new qualitative researchers: conducting a purely deductive study can limit the researcher's ability to identify rich and unanticipated findings, yet, on the other hand, conducting a purely inductive study can be intimidating for novice researchers. Moreover, teaching students to think in polarising dichotomies runs the risk of boxing students into different "camps" (Silverman, 2014), but by showing that both approaches are valuable for analysing qualitative data, the richness of the discipline can be more adequately appreciated. Since the "craft" of qualitative research is best learned through hands-on practice, a combined inductive-deductive approach seems ideal for permitting

novice qualitative researchers to experience both classic approaches to qualitative data analysis.

This model is meant to serve as a guide for analysing data and, in particular, for developing reflexive and critical thinking skills. We often find that students are unsure and hesitant about engaging in interpretative thinking, so we foster their confidence and skills by emphasising memo-writing throughout the entire process. Memos are essentially the engine for developing understanding and theory (Gordon-Finlayson, 2010), and with a little bit of guidance, students can learn to make sense of their data and hone their qualitative sensibility.

This foundational model consists of four qualitative data analysis cycles: The Inspection Cycle, Coding Cycle, Categorisation Cycle, and Modelling Cycle (shown in Table 1).

Table 1. A Foundational Model of Qualitative Data Analysis

MEMOING: Research diary, methodological memos, and analytical memos	
	Inspection Cycle
	1. Basic quantitative content analyses 2. Initial phases of auto-coding
	Coding Cycle
	1. Pre-coding (Saldaña, 2013) 2. Initial coding (Charmaz, 2006; Corbin & Strauss, 2015; Glaser, 2005; Glaser & Strauss, 1967; Saldaña, 2013) 3. Elaborative coding (Auerbach & Silverstein, 2003; Miles, Huberman, & Saldaña, 2014; Saldaña, 2013)
	Categorization Cycle
	1. Revising and grouping codes to elaborate possible categories 2. Focused coding (Charmaz, 2006; Saldaña, 2013) 3. Defining dimensions and relations of categories 4. Displaying relations among categories in networks
	Modelling Cycle
	1. Elaboration of final conceptual framework

Memoing

The practice of writing memos forms an integral part of this qualitative data analysis approach, because we have found it to be effective for encouraging students to engage in reflexive and critical thinking. In order to provide guidelines for novice researchers, we suggest three types of memos that can be applied to most qualitative research projects: the research diary, the methodological memo, and the analytical memo.

The research diary would be the primary memo for reflections, thinking critically about the work, and tracking the development of the research. This memo can help students clarify their assumptions, personal responses, and decision-making about their study. The reflexive thinking developed throughout the research diary is a part of the "quality control" in qualitative research (Braun & Clarke, 2013). Since the process of writing memos is relatively abstract, students can be hesitant to engage in memo-writing. Given this, we also provide practical suggestions of what to include in the different types of memos to help students get started. For example, the research diary can be used to describe and reflect on what has been done on a day-to-day basis, keep a "to do" list, and outline a strategic plan for the short-term and long-term development of ideas. Students can also keep an account of important facts (such as people the student met, literature they read, or lectures they attended) and notes from discussions or useful conversations. The research diary can also be used to suggest ways to

move forward on certain problems, write ideas or questions to follow up on, brainstorm, and develop personal views and analyses throughout the research project.

In order to help maintain the empirical value of qualitative research, we encourage students to transparently describe their methodological decisions (Tracy, 2013; Yin, 2011). Students can create methodological memos to elaborate on their particular approach to the study. Moreover, the process of writing everything out can help cement their understanding of qualitative methodology. On the other hand, we find that students often refer to their methodological memos as a reminder of the steps they need follow as they proceed through their analysis. These memos can ultimately serve as a reference point to guide a consistent and coherent development of the research. While the methodological decisions depend on the type of study being carried out, some important things to include in any methodological memo could be the development of the conceptual framework, analytical processes, and theoretical approaches. Students can also elaborate on how they collected data, analysed data, which coding cycles they used, and how they identified relations between codes. Methodological memos can also be used to record any methodological or analytical dilemmas that may arise, as well as to document any deliberate or unexpected changes that occurred throughout the project.

Analytical memos can be used for elaborating the in-depth analysis of the data and going beyond explicit descriptions. Given that much of qualitative data analysis is developed through the actual process of writing, analytical memos provide a strong starting point from which a "rough draft" of the analysis can be developed. Moreover, analytical memos can be powerful for documenting and grounding the analysis in the data (through direct links to data segments) and providing an audit trail of the evolving analysis. To give more concrete advice to students, we suggest that analytical memos can be used as a space to reflect on and write about the study's research questions and objectives, write ideas and analyses of what the information is reflecting or "telling" in the context of the research question, and how the researcher relates to the phenomenon at hand and the participants (or other data collected). Analytical memos can also be used to elaborate on emergent patterns, categories, themes, concepts, and assertions throughout the analysis, as well as possible network links (such as link relations, conceptions, and flows) among the codes. Students may also discuss any problems or limitations that arise during the analysis and any possible future directions for the study.

The use of memos outlined here is linked to maintaining transparency, coherency, and communicability through a systematic documentation of the researcher's developing work (Auerbach & Silverstein, 2003). On the other hand, when it comes to writing-up the final paper, the majority of the content often comes directly from the memos. Our aim is to provide a basic approach to memoing from which each student may adapt their own working style. These memos can serve as powerful reference points for students throughout their project, so they may develop their understanding of their data.

Inspection Cycle

The Inspection Cycle is the first inductive approach to the data, whereby the student begins familiarising themselves with the dataset through preliminary quantitative content analyses and initial phases of auto-coding. They can thus quantify and reflect on the contents of their data. Qualitative content analysis is a classic procedure for reducing and analysing a wide variety of textual data (Flick, 2009; Krippendorff, 2004; Mayring, 2004), and it is helpful for answering "why" questions, whereas quantitative content analyses are helpful for answering "what" questions (Given, 2008). Since the focus of this cycle is familiarisation

with the data, we encourage students to search for the "what's" of their data, instead of being overly concerned with analysing latent or interpretative meanings just yet.

While content analysis is sometimes criticised for being marked by ideals of quantitative methodology (Flick, 2009), we feel that this is an effective preliminary analytic procedure for novice qualitative researchers, as students are often more familiar with quantitative methods due to the prevalence of quantitative research methods courses in social science programs (Forrester & Koutsopoulou, 2008; Mitchell et al., 2007). Moreover, by permitting students to gain hands-on experience with both quantitative and qualitative analysis techniques, both approaches can then be compared and contrasted in order to understand the strengths and limitations of each within qualitative research. Quantitative analyses can be easily carried out using online tools, text processing programs (such as Microsoft Word), and computer-assisted qualitative data analysis programs (CAQDAS). Many CAQDAS likewise include auto-coding features, which permit students to quickly and easily code their data according to the concepts identified in their quantitative analyses. For those interested in using software during the whole analysis process, we have found CAQDAS to be perfectly capable of meeting the needs of this model. The Inspection Cycle thus incorporates the practice of basic quantitative content analysis in order to encourage students to identify possibly relevant concepts from their data, and we then contrast this analysis with more interpretative and qualitative analyses of the subsequent analysis cycles.

Coding Cycle

The Coding Cycle is where the researcher begins to analyse their data in-depth—they now stop and think about each data segment and take their time in exploring possible interpretations. Students thus begin to significantly condense their data; although data condensation is an inherent part of the entire research process (including data collection and transcription), the Coding Cycle emphasises the practice of selecting, focusing, simplifying, abstracting, and/or transforming the data that appear in the full corpus of information (Miles, Huberman, & Saldaña, 2014). Among the great variety of qualitative data coding methods, we identified those that are relatively easier for novice qualitative researchers to adopt and that can likewise be applied to a range of qualitative methodologies. As Saldaña (2013) points out, analysts need to decide which coding methods will be necessary for answering their research questions, and the different methods can often be compatibly mixed and matched. However, discerning which coding methods to use among the plethora of possibilities can be overwhelming for beginning qualitative researchers, so we developed our model to guide students through common coding practices. We also teach students about the goals of theoretical saturation—reaching the point at which no new knowledge is generated—as a general indicator of when the data has been sufficiently coded (Braun & Clarke, 2013; Denzin & Lincoln, 2005; Flick, 2009). By breaking the Coding Cycle down into a series of methods, students also learn that qualitative research is a cyclical and iterative process—a common misconception among students is that all coding can be conducted with one reading of the data. Coding is not a one-off operation, but rather involves multiple readings and reconsiderations of the data and the actual codes being developed.

The first step is pre-coding, which involves circling, highlighting, bolding, underlining, or colouring rich or significant segments of the data that capture the students' interest (Saldaña, 2013). In other words, the student identifies the "codable moments" worthy of attention (Boyatzis, 1998). The aim is for students to explore the data and gain a global understanding by marking the passages of interest and reflecting in a memo why that passage captured their attention. Students therefore do not begin by directly coding their data, so they can also learn that qualitative data analysis consists of much more than simply assigning

codes to data segments (Coffey & Atkinson, 1996). As this is the first full read-through of the data, we want students to remain open-minded to different possible interpretations and focus only on the content of the data. We advise that students write a memo for each data segment they mark in order to get them used to engaging in reflexive thinking; moreover, by taking the time to write about each passage, students can slow down and take the time to develop their understanding of the data.

The second step is Initial coding. This coding cycle involves coding the data according to any emergent information identified in the data segments. Initial coding often ranges across a variety of topics, and it can encourage the analyst to remain open to all possible theoretical directions (Charmaz, 2006; Corbin & Strauss, 2015; Glaser, 2005; Glaser & Strauss, 1967; Miles, Huberman, & Saldaña, 2014; Saldaña, 2013). We suggest beginning with open-ended analyses such as Initial coding to encourage students' full immersion in the dataset; this is where students may begin to reflect deeply on the contents and nuances of the data (Saldaña, 2013). Instead of focusing on how the data compares to the literature, we want students to pay attention to what is going on in their data and start coding this inductive information. Students may also create In Vivo codes to capture concepts or phrases from the participants. Initial coding is prevalent in a vast array of qualitative analysis methods, because it implies the first major process of coding which identifies specific, relevant segments of data and can help provide analytic leads that the researcher may further explore (Saldaña, 2013). Initial coding was originally referred to as "Open coding" in grounded theory publications, but Charmaz (2006) coined the term "Initial coding" to convey that this is a starting step from which the rest of the analysis will continue; this open-ended coding process is also described in more general terms in Braun and Clarke's (2013) guide for novice qualitative researchers. Moreover, Initial coding has been recognized as particularly well-suited for beginning qualitative researchers who are learning to code data (Miles, Huberman, & Saldaña, 2014; Saldaña, 2013).

The third step is Elaborative coding, whereby students begin to deductively analyse their data. This coding cycle is based on a "start list" of codes that is elaborated prior to collecting and analysing the data; this start list stems from each student's literature review and elaborated theoretical framework. This coding cycle is carried out in this "top-down" fashion, whereby the relevant segments of data are analysed according to the previously-identified concepts, and students can thus build on or corroborate existing research (Auerbach & Silverstein, 2003; Miles, Huberman, & Saldaña, 2014; Saldaña, 2013). As this is also the students' first experience with deductive approaches to analysis, this step helps teach students how their "start list" of codes can later be modified, deleted, or expanded as the analysis progresses. This process also shows students the importance of coherence in qualitative research—harmonising the analysis of previous literature with the data analysis in order to answer the research questions (Auerbach & Silverstein, 2003; Saldaña, 2013). Whereas the first two coding cycles focused on analysing only the information present in the data, this coding cycle re-examines the data only for information related to the concepts and dimensions that were identified from the literature review. This step is valuable for linking the students' conceptual framework to their analysis, thus illustrating one of the ways in which conceptual frameworks can help researchers make sense of the developing "story" of their data (Maxwell, 2013; Miles, Huberman, & Saldaña, 2014).

Categorization Cycle

The Categorization Cycle consists of developing a categorical or thematic organisation of the code list—revising the codes created thus far and identifying the overarching categories or themes. This is similar to Saldaña's (2013) Second Cycle coding

process, whereby the First Cycle codes are analysed and grouped into meaningful categories, themes, or constructs. Students may thus structure their code list to reflect their developing analysis: at this stage it is common to rename, merge, split, or delete codes. Rather than introducing too many complex coding methods, we have students focus on grouping together their codes and begin elaborating the possible categories of their data analysis; this can be done by comparing, grouping, and mapping codes in displays (Braun & Clarke, 2013; Gibbs, 2007; Miles, Huberman, & Saldaña, 2014; Saldaña, 2013). These are essentially adaptations of Saldaña's (2013) Pattern and Axial coding, but we find it easier for students to grasp the process of categorisation by working with their networks and reshaping them to more adequately tell the story of the dataset.

The first step is Focused coding, which effectively bridges both the inductive and deductive codes created thus far. Once the data has been coded for initial impressions and previously identified concepts, this coding cycle involves searching for thematic or conceptual similarity among the data by focusing on the codes themselves (Charmaz, 2006; Saldaña, 2013). Students now group together their different inductive and deductive codes into possible categories by looking at their conceptual framework, code frequencies, and the different elements that are most meaningful for answering their research questions (Braun & Clarke, 2013). For example, it is common that some of the code names become category names. At this point, we have students read through the dataset again, but this time, they examine how the data "fits" each of their developing categories. In other words, students recode their dataset by focusing only on the codes that form part of their first category; they then repeat the process with the codes from their second category, and so on. On the other hand, students will have generated a relatively large list of codes by now, so it is important that they read through the dataset again in order to ensure the consistency of their coding; for example, a concept identified in the data of the last interview may actually also appear in the data of the first interview. Thus, once the code list has been revised, the dataset needs to be revisited to ensure these codes are consistently applied. Focused coding also encourages students to begin exploring possible themes from their data in a way that does not solely focus on the most frequently occurring codes; rather, students may also focus on the different dimensions of their conceptual framework in order to explore to what extent they "fit" the data and thus begin identifying possible adjustments that need to be made to the conceptual framework.

In order to help students begin drawing the overarching connections across their dataset, the Categorisation Cycle emphasises the importance of revisiting the conceptual framework and contrasting it to the analysis carried out thus far. We advocate the practice of displaying data as an inherent part of analysis and sense-making, in line with Miles, Huberman, and Saldaña's (2014) approach. While students have been involved in mapping out networks from the beginning of their project, the Categorisation Cycle foregrounds the data display process. Students may make adjustments to their framework at this point, to include new codes, exclude irrelevant codes, and modify the relations among them. The revision of the code list and mapping out the work in the conceptual framework allows students to develop their "meta-thinking" skills to identify the overarching themes, patterns, or categories from their dataset (Miles, Huberman, & Saldaña, 2014). Moreover, the dimensions of the categories are conceptually and operationally defined, and the relations between these dimensions are defined. Many qualitative researchers value the process of mapping themes or creating networks of categories or concepts in order to make sense of the overarching patterns of a dataset (Braun & Clarke, 2013; Corbin & Strauss, 2015; Flick, 2009; Maxwell, 2013; Miles, Huberman, & Saldaña, 2014). This phase involves solidifying the conceptual network and making it explicitly understandable; by defining each aspect, students begin focusing on the elaboration of distinct categories or themes. The conceptual

framework is crucial for helping students keep their research focused (and thus avoid an overload of possibly irrelevant concepts), but this framework is malleable and evolving throughout the analysis. Students thus begin to crystallise their framework by clearly distinguishing the different dimensions of the categories as well as how these different categories are related to one another. Students would also work closely with their conceptual framework to incorporate the emergent findings from the data analysis with the information gathered from the literature review, thus bringing together both the inductive and deductive analyses.

Modelling Cycle

The Modelling Cycle implies the final elaboration of the conceptual framework that has now been corroborated with the empirical analysis. This final framework thus provides a comprehensive picture of the research, and the students can examine this framework to verify that it represents the data accurately and tells a compelling story about the analysis and findings. At this point, the students may read through their entire dataset again, now with their tentative conclusions in mind, and verify that these conclusions tell a valid and compelling story about their data (Miles, Huberman, & Saldaña, 2014). Moreover, it is also important to consider the resulting analysis in light of the literature, which oftentimes necessitates looking through previous sources again to examine how they may support or refute the findings. This shows students, once again, that qualitative research is not a linear process, but rather an iterative approach to making sense of this rich information. Finally, when it comes to writing up and presenting their qualitative research, students use their final conceptual frameworks to guide the flow and presentation of the material.

Discussion

Qualitative research is an exciting and fruitful field, with qualitative data analysis methods continuing to grow and develop. However, newcomers to the world of qualitative research may understandably struggle with getting a grasp on how they should proceed in their first qualitative studies. In an effort to facilitate both learning and teaching of qualitative data analysis, we have synthesised the relevant advice of multiple qualitative research experts into a coherent series of analytic cycles: The Inspection Cycle, Coding Cycle, Categorisation Cycle, and Modelling Cycle.

The model outlined in this paper provides a straightforward approach that integrates well-known qualitative data analysis techniques from many classic methodologists. Analysis begins with basic quantitative inspection of the data, followed by multiple coding cycles that begin with inductive approaches and move towards deductive strategies, then the codes are grouped and categories are drawn out, which leads to the development of the final conceptual framework that synthesises and corroborates previous knowledge with the findings that emerged from the data analysis. Students thus learn not only how to analyse qualitative data but how to apply rigorous and recognised tactics. Nonetheless, this method serves merely as a guide for analysing diverse types of qualitative data that can be utilised with a variety of methodologies. If students are interested in exploring different qualitative data analysis methods, they can look to the references cited in the present analysis method for a good starting point. The ultimate goal is to provide a solid foundation for novice qualitative researchers to learn how they can proceed through their analysis and develop their qualitative sensibility. By “getting their hands dirty” with data analysis, students will learn much more effectively about qualitative research, and the next time they embark upon a qualitative study, they will already have a clearer idea of how to go about the research. For the novice

qualitative researchers seeking to learn the craft of qualitative data analysis, the model outlined in this paper offers a structured way to familiarise yourself with some of the most common qualitative data analysis techniques while offering enough flexibility to be adapted within a wide range of qualitative methodologies and research areas.

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