9

DESIGNING AND REPORTING A FULLY INTEGRATED MIXED METHODS RESEARCH PROPOSAL OR DOCTORAL DISSERTATION

PRINCIPAL PURPOSES OF THE CHAPTER

1. To suggest practical strategies for a graduate student with foundational knowledge of the mixed methods literature to consider during the process of planning for the design of a mixed method dissertation
2. To provide guidelines for organizing a mixed methods manuscript to reflect a methodological commitment to mixing

Although some faculty members trained in an earlier era express skepticism that it is possible to design a mixed methods study that is doable within the time frame, resources, and expertise of the typical graduate student, there are ample examples of high-quality studies that managed to accomplish just that task. Two of the chapter exemplars (i.e., Catallo, Jack, Ciliska, & MacMillan, 2013; Cooper, 2014) report on dissertation projects. Many students in applied disciplines such as education and health services are driven by a pragmatic interest to search for a combination of methods that have the best chance of producing the type of information that will be effective in addressing real-world problems. Members of this group are likely to be methodologically eclectic (Teddlie & Tashakkori, 2012) and committed to the idea that when combined, qualitative and

quantitative research will produce a richer, more nuanced explanation for complex social phenomenon.

Foundational expertise in research methods is essential for anyone undertaking a research project. One of the principal challenges to the idea that it is feasible for a novice researcher to undertake a mixed method research project is the necessity to demonstrate expertise that spans multiple areas. In addition to content area expertise, this includes a basic knowledge of qualitative, quantitative, and mixed methods research approaches and the software that is compatible with these approaches (Leech, Onwuegbuzie, & Combs, 2011). Along with the scarcity of mentors or supervisors with training in mixed methods (Halcomb & Andrew, 2009), the lack of graduate programs offering courses in mixed methods adds to the challenges associated with using a mixed methods approach in a dissertation (Capraro & Thompson, 2008). Teddlie and Tashakkori emphasized this expansive skill set when they observed, "We believe that mixed methods researchers *must* be competent in a full spectrum of research methods and approaches to select the best paths for answering their research questions" (2012, p. 777).

Every graduate student must develop a foundational level of expertise in research methods to undertake the independent research project that is the penultimate phase of a doctoral program. Poth (2014) refers to the need for methodological expertise with the term *methodological literacy*. Applying to research conducted using any type of method, she defines methodological literacy as "possessing the knowledge and skills necessary for making informed decisions during the research process" (p. 74). During the planning phase, this requires the knowledge necessary to develop research questions and to select a design as well as to identify paradigmatic frameworks, select data collection instruments, and develop a plan to analyze the data.

Throughout this text, I have referred to the image of an architectural arch as a way to conceive a single mixed methods study as being constructed with a qualitative, quantitative, and integrative component. It is an apt way to capture the type of study undertaken by a newcomer with limited time and resources and working within the expectations of his or her program to earn a degree.

This metaphor can be extended to consider an unusual type of bridge that is constructed with either multiple arches or a single, extended arch. This offers a way to punctuate the difference between the design of a single study undertaken by an independent researcher to fulfill the requirements of a graduate degree in applied, human, and social science fields with the type of real-world research that is launched by more experienced researchers. This type of initiative is generally conceived as a research project rather than a research study. Particularly when there is an ambition to be competitive for external funding, a research project is generally initially framed as a series of interrelated studies. In this situation, a mixed methods piece may well be just one of several studies that are imagined at the onset.

A well-known example of a bridge that consists of a single, extended arch is not far from my home in southwest Virginia (http://www.nps.gov/neri/index.htm). It is shown in a photo in Figure 9.1.

FIGURE 9.1 ■ New River Valley Gorge Bridge

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A haven for bungee jumpers, the bridge that spans the New River Valley gorge is considered to be both a feat of engineering and an aesthetic marvel. It remains one of the longest arches in the world. At 1,700 feet long, the arch comprises more than half of the expanse of the entire bridge. Completed in 1977, the bridge is ranked by some sources as one of the top ten arches in the world.

A researcher more advanced in his or her career may envision a project in a way that is similar to the extended arch that spans the New River Valley gorge. The goal of the novice researcher who has chosen a mixed methods approach to designing a research project is the equivalent of a constructing a single arch. It is clearly and narrowly conceived in its purpose.

COMMUNICATING PRIORITY

The widespread adaptation of a single standard to structure an empirical research article across academic fields belies the fact that there yet remain many choices about the ways to organize it. The amount of space devoted to each of the methods, along with the figures, tables, and headings, communicate the priority awarded to the quantitative, qualitative, and mixed methods phases of the research process (Creswell & Plano Clark, 2011). Researchers with the ambition to design a fully integrated mixed method study are faced with the challenge of designing and presenting their work in a way that is consistent with the overriding purposes of mixed methods.

Using mixed methods is not simply about collecting and analyzing multiple types of data but includes intentionality about wedding the two in meaningful ways. This is best reflected when attention to mixing is incorporated throughout the different sections of a research report.

PURPOSE, GOALS, AND CONTRIBUTION OF THE CHAPTER

The approach I take in this chapter is one that reflects the priority I have placed in this textbook on fully integrated mixed methods studies that attends to mixing throughout the various phases of the research process. This is consistent with an overriding purpose of mixed methods research that is undertaken not solely for collecting multiple sources of data for triangulation or confirmation, but with attention and forethought to integrating them in ways that extend or advance understanding of the phenomenon being studied.

The central purposes of the chapter are twofold. These are, first, to suggest practical strategies for a graduate student with foundational knowledge of the mixed methods literature to consider during the process of planning the design of a mixed method dissertation and, second, to provide guidelines for organizing a mixed methods manuscript to reflect a methodological commitment to mixing. The contribution of the chapter lays in the explanation and illustration of ways to design a mixed methods study and to structure a mixed methods research publication in order to communicate a priority on mixing. This is when attention to meaningful strategies and outcomes of mixing are interwoven throughout the research process and in the way it is represented in the form of articles, presentations, and other types of publications.

As has been my approach in the previous chapters, my focus in this chapter is largely on issues that are specific to mixed methods. The principal audience for the chapter is doctoral students and those who begin with the intention to design an empirical study that has the potential to make a contribution to knowledge or to advance policy or practice. Many publications are available that describe the content and order for organizing a research proposal and the generic challenges, including political ones, faced by the novice researcher. I refer readers to helpful books by Bazeley about the use of software in qualitative data analysis (2013; Bazeley & Jackson, 2013).

It is not my intent in this chapter to provide a comprehensive review about what has been written about reporting in mixed methods studies, nor is it to offer examples of creative alternatives to write up a mixed methods research project. I refer the reader to earlier chapters to consider the implications of paradigmatic assumptions on study design. Instead, it is my goal to illustrate how to attend to the central features of mixed method research to embrace multiple types of data and points of view through the conventional, linear approach to structuring a mixed methods

publication. This begins with an introduction, moves to the literature review and a description of methods, and ends with results and discussion. With intentionality about the integration of the qualitative and quantitative strands, the conventional format has proven adaptable to the growing diversity and creativity shown in mixed method publications.

The principal goals of the chapter are to

1. acknowledge practical challenges faced by graduate students who find a mixed methods approach to be compatible with the nature of the research questions they would like to pose;
2. identify types of studies where the multimethod label is more appropriate than a mixed method label;
3. distinguish the qualities of the chapter exemplars that are feasible and less feasible for a newcomer to research;
4. introduce content analysis as a realistic option for graduate student research;
5. present strategies for organizing a mixed methods manuscript;
6. summarize different ways that mixing can be incorporated through all stages of the research process;
7. explore the way figures can be used to depict the steps in the research process, including how mixing was accomplished; and
8. identify reporting guidelines for methodological transparency.

Organization of the Chapter

The chapter is organized into two main sections. The first section is devoted to the planning or design phase of a research project. In an ideal world, this is when many decisions are made about the design and execution of a mixed methods study, including about how and when the qualitative and quantitative data will be integrated. Uses of mixed methods that are better adapted to a multimethod approach are singled out here. The suggestion that content analysis can be suitable for graduate student research is pursued next. Characteristics of chapter exemplars that are realistic for graduate students with a foundational knowledge of mixed methods research are explored, as are effective strategies for designing a study that promotes mixing.

The second portion of the chapter addresses the topic of reporting and presenting the results of a mixed method study. There are strong linkages between this section and the discussion about evaluating quality in mixed methods in Chapter 8. In the last section, I use a single exemplar to demonstrate how to add to the credibility of reporting through different types of methodological transparency.

The quality of a research study is as much about the thought that goes into the initial planning stage as it is about its execution. As the new researcher goes through the process of fine-tuning a purpose statement, research questions, and the types of procedures that will be used, attention to design features of the study can help to create a stronger context for mixing. Before considering qualities that make a mixed method approach feasible for a dissertation, we will address types of designs that are not particularly conducive to meaningful mixing.

SITUATIONS WHEN THE MULTIMETHOD LABEL IS APPROPRIATE

There is little doubt that there is considerable interest in mixed methods as a research approach, particularly among graduate students. Plowright (2013) demonstrates that the enthusiasm for it, particularly among students in applied fields such as education, is at a level that merits its characterization as a trendy option. Ninety percent of the 93 doctoral students Plowright surveyed used or intended to use mixed methods in their research. The vast majority of the doctoral respondents believed that the problem being investigated drove the choice of methods. The majority downplayed the concern that qualitative and quantitative approaches operate from a set of opposing paradigmatic views. Only 15% of the doctoral respondents expressed the view that the philosophical or paradigmatic position of the researcher is the most important factor when it comes to planning or designing research.

The trendy nature of mixed method approaches has some consequences. It is very likely to lead the newcomer to research to appropriate the label without giving thoughtful attention to the types of studies where the multimethod label is a better way to characterize the research. The multimethod label communicates the intent to use more than one procedure to collect data. It implies no promise to include a genuine inductive or qualitative component that contributes to the analysis. There is no commitment to explore how multiple sources of data interface for purposes of building a more comprehensive picture of a phenomenon.

Centering mixing in the decision to use a mixed methods approach is a methodological choice that can help a novice researcher make an informed decision about the appropriateness of mixed methods label as compared to multimethod label. Several types of empirical studies minimize the role of mixing. These include a common design of surveys to include open-ended questions, considering counting of themes or codes from the qualitative analysis as mixed methods, and classic uses of both a concurrent and two-phase design that only modestly bridge data sources.

As early as 2003, Sandelowski voiced a concern that the mixed method label is being applied simply because it is "methodologically fashionable" (p. 323). She spelled out a list of types of studies where the mixing of the qualitative and quantitative sources of data is so trivial that she challenges the appropriateness of its affiliation with mixed methods. Sandelowski questioned the meaningfulness of labeling two types of studies as mixed methods:

1. Projects where one or two open-ended questions are added to a questionnaire or survey without any intent to analyze the data independently. Quotes from open-ended responses are often used simply for purposes of illustration or to flesh out or to enliven dryer statistically derived results.
2. Treating projects that involve counting of qualitative codes or themes as data transformation and a form of mixing.

The multimethod label may well be a more accurate descriptor of these two types of studies because they lack the meaningful strategies for mixing that is communicated by a mixed methods label.

An important figure in the field, Bazeley (2009) raised further questions about the assumption that the single most frequent use of mixing will continue to be sufficient to warrant the mixed method label. She challenged the idea that simply mixing at the interpretation stage—generally a topic raised in the discussion section of a publication—justifies the application of a mixed methods label. As informative as a statement about the differences and similarities between the results is, the failure to produce results that are embedded in an analytical procedure reduces the credibility of the conclusions. Bazeley's question should motivate new researchers to be more creative during the early phases of planning to build in nontrivial opportunities for mixing.

Two widely used designs are not particularly conducive to mixing and, consequently, might be more suitable for a multimethod study. Both are probably widely used because they are so well suited to collaborative initiatives in which team members divide up responsibility for a project and each contributes a specialized expertise. One of these is the classic concurrent approach to data collection and analysis. The second is the two-phase development design. Limitations in both of these designs can be overcome by drafting research questions in a way that requires the interlinked analysis of both qualitatively and quantitatively derived variables.

A concurrent design where the qualitative and quantitative data are collected and analyzed separately is the single most frequently used mixed method design. Eighty-percent of the 677 mixed method publications reviewed in a cross-disciplinary content analysis of mixed methods publications in 17 subject areas were executed using a concurrent design (Ivankova & Kawamura, 2010). None of the exemplars use this approach. The bifurcation of the analytical procedures into separate qualitative and quantitative phases probably goes a long way to explain why most mixed methods studies only mix at the final, interpretive stage.

Because the two strands are so distinct, the development design shares many of the design features of a concurrent design. The development design is an umbrella term to describe two types of studies. This is when qualitative data, often from interviews, are collected in an initial phase in order to develop an instrument or intervention in the second phase. The two phases are only loosely linked. The second most frequent use of the development design is for purposes of sampling, when indicators from the first phase are used to identify members of a sample for the second phase. The weakness in this design is that the mixing that contributes to the analytical insight is often absent.

Studies with either a concurrent or development design are appealing because they can be executed quite efficiently and in distinct rather than interlocked phases. They may well be so widely used because they are compatible with packaging into separate publications. The limitations in the way these two types of studies have conventionally been conceived can readily be offset, however. There are many ways to promote the meaningful integration of qualitative and quantitative sources of data throughout the research process.

Intentionality About Incorporating Design Features That Promote Mixing

In earlier chapters, I placed a good deal of emphasis on unexpected opportunities for mixing that often emerge over the course of the research process, particularly when the analysis is allowed to become iterative and further analytical strategies are

employed to pursue extreme or negative cases or contradictions or unexpected or counterintuitive results. Pursuing these through further analysis not only adds to the credibility of the findings but also adds to the potential to reach sophisticated, nuanced inferences that make an original contribution to research and practice.

Without downplaying the contribution of serendipitous opportunities for mixing that emerge during the process of conducting research, there are strategic ways to incorporate intentionality about mixing during the early phases of designing a study. Table 9.1 provides a generic list of eleven strategies to facilitate mixing that are useful to consider during the planning stage of a research project. The emphasis in this table is on strategies that have an effect on data collection and analysis rather than two other features of a mixed methods design—timing and priority—that have figured so prominently in the mixed methods literature.

Table 9.1 provides a checklist of items to consider during the planning stage of a project. It offers a full range of examples of the ways that multiple types of data can be integrated in meaningful ways. It is unlikely, however, that all these ways would be used in a single study.

TABLE 9.1 ■ Examples of Different Ways That Mixing Can Be Incorporated at All Stages of the Research Process

Stage of the Research Process	Examples of Strategies for Mixing
1. Design research questions	Qualitative and quantitative data are collected about the same or overlapping constructs. Separate qualitative and quantitative research questions (one that is descriptive and a second that is intended to answer the why and how questions).
2. Data collection	Analysis of results from the first phase of a sequential or multistage study shapes the data collected in the second phase.
3. Sampling	Qualitative and quantitative samples are the same or overlap. Both purposeful and probabilistic sampling strategies are used. Extreme or negative case sampling is used.
4. Analysis	Qualitative and quantitative data on the same constructs are merged into one quantitative variable. Case profiles are used to explore nuances in the quantitative data in different settings or for different individuals or entities.
5. Interpretation and conclusions	An explanation is offered for inconsistencies between the results from the analysis of qualitative and quantitative data. Results from the qualitative and quantitative analysis are explicitly linked and explained by a meta-inference.
6. Reporting	An explanation is offered for consistencies and inconsistencies between the results and the literature.

Up to this point in the chapter, we have attended to generic features that can be considered during the planning of a research project that are incompatible and compatible with an approach to mixed methods that incorporates mixing in every stage of the research design. We shift our attention now to other practical factors that need to be weighed as a study is conceptualized and the relative merits of a mixed method approach is determined.

DESIGNING A MIXED METHODS STUDY IN WAYS THAT ARE FEASIBLE FOR A NEWCOMER TO EMPIRICAL RESEARCH

The characteristics of a realistic or feasible research project for a graduate student depend on a myriad of factors. These include the student's long-range goals, expectations of the program, and negotiations that ensue with a research mentor or advisor and other committee members. The choice of appropriate methods is quite a different matter for a student who is working independently and generating a topic of his or her own volition than for a student working in a team. This was the case, for example, with the chapter exemplar reporting on Catallo's dissertation research about the reporting of intimate partner violence in emergency rooms (Catallo et al., 2013). Catallo had the benefit of conducting a study that emerged from within the context of a large, externally funded research team. Feasibility may be weighed differently by a student who is motivated by the desire to lay the foundation for a future career as an academic.

There are many facets to the feasibility of a research topic. Sufficient expertise, the potential for timely completion, adequate resources, and the support of an experienced and trained mentor who is engaged with the literature in mixed methods would have to be at the top of any list of issues that merit a coolheaded appraisal. Projects that utilize existing databases, streamlined instruments that already have a demonstrated record of reliability, and access to an extant body of data that is publicly accessible at minimal or no charge (as are now increasingly available through the Internet) greatly enhance the potential to carry a mixed method project to fruition in a timely manner.

A minimum of foundational knowledge of quantitative, qualitative, and mixed methods is widely acknowledged as one of the principal challenges a new researcher encounters when weighting the merits of utilizing a mixed methods approach. Some methods that are philosophically compatible with a mixed methods approach, such as content analysis and case study, require a foundational knowledge that is not unduly ambitious to acquire. Although it is not pursued here, Ivankova demonstrated that evaluation research is achievable in a dissertation (Ivankova & Stick, 2007).

More sophisticated expertise and prolonged exposure to the methodological literature is likely necessary to pursue more advanced designs, such as those explored

by Plano Clark (2010) and Plano Clark et al. (2014). It is also likely to be necessary to produce research that would be of interest to an audience of methodologists. Some newly emerging, innovative uses of mixed methods, such with social network analysis (see Cross, Dickmann, Newman-Gonchar, & Fagan, 2009, for an example) and geospatial analysis (see Hites et al., 2013, for an example), require knowledge of specialized software that is likely to require additional training.

In the next section, I incorporate references to the chapter exemplars to distinguish models that are most likely to be appropriate for an independent researcher attempting to craft a dissertation that is not unduly ambitious or beyond the scope of expertise that can be expected of a scholar in his or her first long-term foray in the arena of academic research and publishing.

Chapter Exemplars That Are the Most Feasible as Models for Doctoral Research

Some of the chapter exemplars are more realistic models than others for graduate students undertaking their first independent research project. Table 9.2 summarizes the design characteristics of five of the nine exemplary articles featured in the preceding chapters as being designed in a way that is feasible for a graduate student operating without the benefit of the additional resources and support that comes from being

TABLE 9.2 ■ Chapter Exemplars That Are the Most Feasible for Graduate Student Research

Chapter: Author(s) (Date)	Topic	Rationale	Sample	Timing/Scope Issues
Chapter 2: Durksen and Klassen (2012	Preservice teachers	Initiation	Identical	Qualitative and quantitative data collected simultaneously over the course of one term
Chapter 4: Catallo et al. (2013)	Disclosure of intimate partner violence	Complementarity	Nested	Sequential, qualitative data collection following an intervention to answer a why question
Chapter 5: Young and Jaganath (2013)	HIV education	Complementarity	Identical	Use of a private Facebook page to collect qualitative and quantitative data simultaneously over the course of 10 weeks
Chapter 6: Creamer and Ghoston (2012)	Mission statements of colleges of engineering	Complementarity	Identical	Qualitative and quantitative data collected from publicly available, free online sources
Chapter 9: McMahon (2007)	Endorsement of rape myths	Complementarity	Nested	Uses standardized publicly available instrument for survey followed by two phases of qualitative interviewing

embedded in a research team (i.e., Catallo et al., 2013; Creamer & Ghoston, 2012; Durksen & Klassen, 2012; McMahon, 2007; Young & Jaganath, 2013).

The five studies I have distinguished as feasible for graduate student research vary in the priority they awarded to the qualitative, quantitative, and mixing phases. Topic areas and disciplinary home were also quite diverse. All of the studies integrated the qualitative and quantitative components in multiple ways throughout many, if not all, of the phases of study, including during analysis. In addition, these examples share these design features:

1. An identical or overlapping group of participants for the qualitative and quantitative phases.
2. Research questions that provide for a comparison during analysis of the same or overlapping qualitative and quantitative constructs.
3. A rationale for using mixed methods that falls under what Greene, Caracelli, and Graham (1989) referred to as a *complementarity rationale*. This rationale reflects the goal of creating a more nuanced, complex understanding of a phenomenon.
4. Publicly available data and/or instruments are utilized.
5. Qualitative and quantitative data are collected simultaneously and over a relatively efficient time frame.

These five features reinforce the argument that it is indeed possible for a graduate student to craft a mixed method research project that includes meaningful opportunities for mixing within a reasonable time frame, set of resources, and requirement for methodological expertise.

Four of the nine articles featured as mixed method chapter exemplars have design features that are less likely to be realistic for a graduate student to pursue independently without unusual motivation or access to resources, including time (i.e., Cooper, 2014; Elliott, Gale, Parsons, Kuh, & the HALCyon Study, 2014; Gasson & Waters, 2013; Jang, McDougall, Pollon, Herbert, & Russell, 2008). Two characteristics distinguish these: first, the requirement for access to data that would not typically be available to a graduate student. Gasson and Water's (2013) research about engagement in an online class that I reviewed in Chapter 3 is an example of this. Replicating the study would only be feasible for someone who has access to data about students' patterns of usage and access to an online class.

The second feature of the chapter exemplars that would be challenging for most graduate students to undertake are those associated with what Greene et al. (1989) referred to as the *expansion rationale or design*. This type of design applies to studies where data are collected from multiple constituencies at different levels of a school or organization. It is characterized by the iterative, multiphase cycle of data collection and analysis that Teddlie and Tashakkori (2012) identified as one of nine core characteristics of mixed method research. Even though the article summarizes the results of her dissertation, the multilevel nature of the process of data collection is the reason I categorized Cooper's (2014) research as being challenging for another graduate student to replicate.

Some methods or approaches, such as content analysis and case study, are more compatible than others with mixed methods. Feasible applications of a mixed method approach to several qualitative dominant methods are considered in the next section.

METHODS THAT ARE ADAPTABLE TO A MIXED METHODS APPROACH

Some methodologies, such as ethnography, have their own prescription for specialized methods for collecting and analyzing data that are so deeply rooted in an overarching philosophical framework that the intent to integrate qualitative and quantitative data that is so integral to the philosophical grounding of mixed methods inevitably plays an ancillary role. This is a method where Plowright's (2013) radical idea that methodology dictates paradigm comes in to play. The challenge of reconciling two strong methodological orientations make it difficult to frame ethnographic research as mixed methods.

A similar argument has traction with the exemplar by Catallo et al. (2013) in Chapter 4. It has many strong reporting features but uses grounded theory in a way that is decidedly secondary to the dominant methodological orientation of the randomized controlled clinical trial. A qualitative component inevitably plays a secondary role in this type of quantitative-dominant study that is the gold standard in medical and health fields. It is a struggle to adapt this method to the context of research in many applied fields, including education.

There are several other research traditions that have been widely used with qualitative strategies for data collection and data analysis that are readily adaptable to a mixed methods dissertation. Studies executed using grounded theory, content analysis, and case study can fall in this group. Though I have said that the breadth of its data collection would make it a challenge for others to replicate, Cooper's (2014) research about the effectiveness of different teaching strategies in promoting student engagement is an example of the meaningful merger of qualitative and quantitative data through case study in a dissertation.

Content analysis is a method that is widely used by mixed methods practitioners. Bryman (2006) estimated that about 8% of the mixed methods articles in the social sciences utilize a form of content analysis. Although the analysis of textual data is thought by some to be inherently a qualitative act, content analysis is a method that is readily adaptable to mixed method approaches. Features in qualitative software make it possible to extract data to analyze posts in social media or entries in online forums.

Content Analysis

Content analysis *is an empirical research method for systematically analyzing data that are in textual or visual form*. It first emerged as a research method in the field of communication studies (Weber, 1985, 1990), where it has been used to study

patterns of usage of texts in mass media using materials as diverse as advertisements, greeting cards, blogs, newspaper editorials, magazine advertisements, and film. Text includes written or printed materials such as transcripts of interviews or conversations, diaries, reports, books, written or taped responses to open-ended questions, media, and verbal descriptions of observations (McTavish & Pirro, 1990). Not solely restricted to written materials, content analysis can be extended to objects that carry meaning, including art, photographic images, maps, sounds, signs, symbols, and numerical records (Krippendorff, 2004). Arts-informed mixed methods approaches have been used to analyze drawings produced by participants (Shannon-Baker, 2015). The recent digitization of library holdings by members of a nationwide consortium to encourage free and open access to the public offers a trove of opportunities for innovative approaches to content analysis of different types of textual and media data, including historical maps and restaurant menus (Schuessler, 2016).

Content analysis is a method that is particularly adaptable to a mixed methods approach (Downe-Wamboldt, 1992; McTavish & Pirro, 1990; Weber, 1985, 1990). Weber argued, "The best content analytic studies utilize both qualitative and quantitative operations on texts" (1985, p. 10). One quality that makes content analysis particularly suitable to mixed methods is that it is a research method that is not deeply wedded to a single paradigm, worldview, or philosophical orientation. That is why it is best characterized as a method rather than a methodology. Its largely pragmatic philosophical grounding is adaptable to a quantitative or qualitative priority as well as to an integrated approach that balances the two. A mixed methods approach to content analysis can juggle inferences drawn from analyses that quantify the explicit occurrence of words, phrases, or sentences with those constructed from analyses that are more overtly interpretive of the meanings underlying the text (Graneheim & Lundman, 2003).

Content analysis has tremendous advantages as a method for use by a novice researcher. One reason for this is that it is eminently doable without advanced expertise in mixed methods or specialized software. A second feature that contributes to its feasibility is its use of existing publicly accessible data that are both free and almost unlimited. Because these data are in the public domain, there are no issues of securing access to the data. An additional advantage is the potential to assemble a relatively large database of data that is amenable to statistical analysis. The potential to generate multiple publications from a single database adds to the list of advantages of a mixed method approach to content analysis.

Organizations, schools, colleges, clubs, or corporations almost always provide readily accessible statements that announce their central mission. These offer many opportunities for a mixed method content analysis.

Using content analysis to analyze mission statements. Analyzing mission statements is another application of content analysis that is highly suitable for doctoral research using mixed methods. Mission statements "represent an important summation or distillation of an organization's core goals represented by concise and simple statements that communicate broad themes" (Stemler, Bebell, & Sonnabend, 2011, pp. 391–392). A shared sense of mission has been widely shown to be associated with school effectiveness. Mission statements would be expected to differ markedly between

colleges that, for example, place a high value on public service from those with an emphasis on entrepreneurship. This type of textual data has the advantage of being publicly available at no cost and readily accessible in this age of online data collection. Mission statements can be systematically and reliably coded into thematic categories. An additional advantage is that the large and varied nature of a number of entities producing mission statements makes it possible to adapt mixed method or quantitative sampling strategies that extend the argument for the generalizability of the findings.

The Creamer and Ghoston (2012) study foregrounded as one of the exemplars in Chapter 6 is an example of a type of mixed methods content analysis of mission statements that could readily be undertaken by a newcomer to research. Interested in issues related to gender diversity, Creamer and Ghoston initially inductively coded mission statements from colleges of engineering for the types of outcomes expected of graduates. The same approach could be used to identify the types of values explicitly and implicitly endorsed in mission statements. Creamer and Ghoston shifted to a quantitative approach in a second stage of analysis, where they identified differences in the demographic characteristics of the colleges that emphasized values related to diversity in a mission statement.

Uses of content analysis to study the characteristics of mixed methods research published in a field. One of the principal uses of a mixed method approach to content analysis is as a tool to analyze the prevalence and design features of mixed methods studies reported in journal articles in a field. This includes analysis of patterns of usage of rationales, designs, mixing, and sampling strategies. Data for this type of study are collected at a single point in time through a process of a systematic keyword search of databases and/or selected journals. Analysis begins only after all the articles are collected and carefully scrutinized for relevance.

There are many examples of content analyses conducted to assess the prevalence and characteristics of mixed methods articles in a field that can serve as models for graduate student research. These include analyses of the mixed methods literature in many subfields in education (e.g., general education, Truscott et al., 2010; gifted education, Leech, Collins, Jiao, & Onwuegbuzie, 2011; math education, Ross & Onwuegbuzie, 2012, and Hart, Smith, Swars, & Smith, 2009). Results from these analyses are reported in Table 10.1. Doctoral students in my mixed methods class have published content analyses of the use of mixed methods when studying topics in their own disciplines (e.g., literature in family studies, Gambrel & Butler, 2013; literature in engineering education, Kafir & Creamer, 2014; and science education, Schram, 2014).

Some interrelated publications by a faculty member at a university in Spain further demonstrate my argument that content analysis of a body of published research using mixed methods approaches is well within the scope of what can be accomplished in a reasonable period of time. Molina-Azorin appears as lead author in at least four content analyses of the mixed methods literature in different subfields in business (e.g., organizational research, management research, strategic management, and entrepreneurial research) in a two-year span between 2010 and 2012 (Molina-Azorin, 2010, 2011, 2012; Molina-Azorin, López-Gamero, Pereira-Moliner, & Pertusa-Ortega, 2012). The tally notches up to five published content analyses of the methodological literature in a two-year span when an article he appeared in as a second author is added (López-Fernandez & Molina-Azorin, 2011).

Content analyses that are conducted with the purpose of analyzing how mixed method approaches have been used to study a topic or academic field are frequently guided by a similar set of readily replicable research questions. For example, a team of researchers from Georgia State University (Truscott et al., 2010) undertook a project to examine the prevalence rate of mixed methods in eleven prominent educational journals in literacy, mathematics, social studies, and science. These authors posed the research questions for their study this way:

1. How many mixed methods research articles were published in this collection of journals during a specific time period?
2. How did the numbers of mixed methods research articles vary by year, by journal, and by educational domain? (p. 319)

The addition of a qualitatively oriented research question about the value-added of a mixed method approach would enhance the contribution of this kind of content analysis.

Other authors pursuing content analyses of the mixed method literature in a discipline or topic provide examples of research questions that look more deeply into the issue of how different designs or mixing have been used by authors publishing in that field. These could include coding articles for purpose or rationale for using mixed methods, timing of data collection and analysis, and type and amount of mixing. This approach is evident in one of the research questions posed by López-Fernandez and Molina-Azorin (2011) in a content analysis of interdisciplinary educational journals. By focusing on analyzing how mixing was accomplished, these authors model a research question that could readily be adapted by others:

> What are the characteristics in terms of purpose of mixing and design in mixed methods articles identified in three journals over the period 2005 to 2010? (p. 270)

A research question about type and amount of mixing appears in many content analyses of mixed methods publications, including quite recently by Cameron, Sankaran, and Scales (2015) in a study of the literature in management research. An interest in how mixing was accomplished is at the center of multiple interlinked publications produced by O'Cathain and her colleagues from the United Kingdom about research proposals from the area of health sciences (O'Cathain, 2010; O'Cathain, Murphy, & Nicholl, 2007a, 2007b, 2008).

Content analyses that consider quality. Consideration of the quality of publications in the sample is not something that is routinely addressed by content analyses of mixed method publications. One way this can be done in a dissertation is by systematically applying an existing rubric designed to measure quality, such as those introduced in Chapter 8. Developing an original rubric is another way to approach the task.

Authors of two relatively recent mixed method content analyses used guidelines about expectations for reporting in mixed methods in order to address a research question about the quality of these publications (i.e., Cameron et al., 2015; Schram, 2014). Schram scored

articles on a four-item rubric she devised, while Cameron and her colleagues extracted a few items from a comprehensive evaluative framework for reporting produced by Morse and Niehaus (2009) to single out exemplary publications for further case analysis. Neither of these authors leveraged the potential of a strong qualitative component to identify other ways the articles might have been original or innovative.

Schram's (2014) content analysis makes a significant contribution to the literature by demonstrating the way a rubric about reporting standards can be incorporated in a mixed methods analysis. She devised a four-item rubric to create a quantitative score to answer a research question related to quality: "What articles from the sample best reflect contemporary assumptions about mixed methods research methodology"? (p. 2621). She created a scale to systematically score each article on aspects of reporting related to methodological grounding in the literature, clarity about rationale for using mixed methods, and two items related to mixing. Schram's approach to evaluating quality shares some of the features with the Mixed Method Evaluation Rubric (MMER) introduced in Chapter 8.

Cameron et al. (2015) also included a research question about the quality of the reporting in their analysis of the use of mixed methods in the research literature in project management. They singled out exemplars by applying a comprehensive set of reporting guidelines developed by Morse and Neihaus (2009) about issues that should be addressed in a mixed method publication.

A mixed method content analysis that might be conducted by a graduate student to fulfill the requirements of a dissertation requires a set of empirical procedures to systematically identify, screen, code, and analyze a body of literature. The use of an auditable protocol is what distinguishes a content analysis from a systematic review (Sandelowski, 2008). An auditable protocol is simply a data collection form that facilitates the systematic coding of the data. This type of protocol can be applied to many types of questions that are suitable for a mixed method dissertation, including considering values addressed in mission statements, themes emerging from posts on social media sites or in threaded conversations that occur in online forums, and analyses intended to categorize the methodological and thematic qualities of a body of literature.

We shift our attention now from the type of issues that are considered during the planning stage of a research project to the essentials of organizing a mixed methods research publication that communicates a priority on mixing.

ORGANIZING A MIXED METHODS RESEARCH MANUSCRIPT

Conventions about the major sections for organizing a research proposal or publication were first introduced in the 1940s and are now universally used (Sollaci & Pereira, 2004). This includes an introduction, literature review, description of the procedures used, summary of findings or results, and discussion or interpretation of results. Dahlberg, Wittink, and Gallo (2010) provide a checklist of the structure of an empirical article with a detailed itemization of what is routinely included in each

section of a conventional research report. This is the same style advocated by the American Psychological Association (2010) and is evident in the multiple versions of a style manual that is widely adopted by many academic disciplines.

McGill (1990) considered a standardized format for reporting to be an aspect of the rhetoric of science. He argued that demonstrating familiarity with it is a prerequisite for entry into scientific circles. Using a standardized format makes it easier for a reader to zero in on what most interests them in a publication and, consequently, makes it more likely they will read it. Adhering to the conventional reporting format sends a message that the study was conducted scientifically. A distinct advantage of the standardized format is that "readers tend to assume scientific rigor as long as everything is presented the way it should be" (McGill, 1990, p. 131).

The choice about how to present information about the different phases of a mixed methods project within the conventional reporting format is no trivial matter. Like the tables and figures, these influence the amount of space that is devoted to the qualitative, quantitative, and mixed methods phase of a study in the methods, results, and discussion section of a manuscript. The amount of space and the way it is organized communicates if priority has been awarded to the qualitative, quantitative, or mixing phase. The underlying concern in reporting is to be attentive to strategies for organizing the manuscript in ways that clearly communicate the centrality of an ongoing interaction between the qualitative and quantitative phases.

O'Cathain (2009) catalogued two major approaches to organizing information in a publication about the qualitative, quantitative, and mixing phases of a mixed method study. She referred to these as a *segregated* and an *integrated* approach. Both are linked to the design of the study and the timing of how the phases are executed. The segregated approach to reporting is used most frequently. It occurred in almost two thirds of the grant proposals she analyzed. Authors using a segregated approach organize their manuscript in a way that is well-suited to a multimethod rather than mixed method approach. They separate out the discussion of the qualitative and quantitative phases of the study either into two different chapters or two different sections of the manuscript.

The integrated model to reporting is more consistent with a methodological perspective centered on mixing. Authors using this format weave references to the interaction between the qualitative and quantitative strands throughout the major sections of the manuscript (Bazeley, 2012; Leech, 2012; O'Cathain, 2009).

Table 9.3 builds on O'Cathain's (2009) work but suggests four approaches to organizing a mixed method manuscript, rather than two. The approaches are, in effect, a continuum that ranges from completely segregated to segregated to integrated to completely integrated.

Commentary about the interplay between the qualitative and quantitative analyses is relegated to a separate section in all but the completely integrated approach.

The segregated approach to organizing a mixed method manuscript is the one that raises the most concerns. It organizes a manuscript into two loosely linked sections: one section that details the methods and results from one phase and a second that uses the same procedure for a second phase. This type of organizational strategy often signals two very loosely connected studies. The concern about the suitability of a mixed method label for this type of study is that it misrepresents the underlying logic of the inquiry.

TABLE 9.3 ■ Ways to Organize a Mixed Methods Manuscript

Completely Segregated	Segregated	Integrated	Completely Integrated
The article is divided into two parts: one with the methods and results of the qualitative strand and a second with the methods and results of the quantitative strand. No separate section for mixing is available.	Discussion about the qualitative and quantitative strands is organized into two different sections in the methods, results, and discussion sections of the manuscript.	References to the qualitative and quantitative strands are woven throughout the methods, results, and discussion section of a manuscript. It includes a separate section that describes mixing.	References to the qualitative, quantitative, and mixing strands are woven throughout the methods, results, and discussion section of a manuscript.

Stemler and his colleagues (2011) used an extreme variant of the segregated approach to report the results of research about school mission statements that I have referred to as *completely segregated* in Table 9.3. While the authors display convincing evidence of their content area expertise, the organization of the manuscript communicates unfamiliarity with the conventions in mixed methods. The article is divided into one section that describes the methods and results from the first phase of the study and a second that does the same for the second phase. Language that links the two is left to the concluding section. The omission of any references to the foundational mixed methods literature is a tip-off that the authors may well be operating without knowledge of the expectations and conventions for reporting mixed methods research.

Being mindful that the organizational structure of a mixed method manuscript communicates the priority of the qualitative, quantitative, and mixing strands extends to other aspects of reporting, including to the visuals and graphics that are included. In the next section, we return to the topic of the indicators of methodological transparency in reporting. These are valuable for the new researcher to keep in mind as he or she begins the process of organizing and drafting a publication.

EXTENDING THE QUALITY OF REPORTING

Strategies for reporting play a pivotal role, if not a singular role, in the way that the quality of the research is judged (O'Cathain, 2009). Most typologies or guidelines, such as the Good Reporting of a Mixed Methods Study (GRAMMS) presented by O'Cathain et al. (2008), are simple checklists for what should be included in the write-up of a study that are all reflections of methodological transparency. These routinely include such items as justification for the study, description of design features, and a description of when and how mixing occurred. These differ from the types of issues addressed by a rubric such as the MMER, which is framed in order to get at the twin issues that underscore the importance of both documenting the research process and indicators of the quality of the outcomes.

The credibility of the conclusions is warranted or supported by documentation present in a report about the process used to reach the conclusions. O'Cathain and the colleagues that joined her after she completed her dissertation have published extensively about reporting standards that reflect quality (O'Cathain, 2010; O'Cathain et al., 2007a, 2007b, 2008). The six items in the GRAMMS (O'Cathain et al., 2008) are widely acknowledged elsewhere, including in the manuscript guidelines for the *Journal of Mixed Methods Research* and an instrumental document produced for the National Institute for Health, *Best Practices for Mixed Methods Research in Health Services* (O'Cathain et al., 2010). The GRAMMS is practical in that it is brief and it is relatively easy to apply. Cameron and her colleagues (2015) used the GRAMMS in their content analysis of the literature in management research.

Table 9.4 is a considerably more detailed list of expectations for transparency than that first reported by O'Cathain et al. (2008) in the GRAMMS but is more reflective of what is itemized in a later publication by O'Cathain (2010). I have aligned the type of transparency with the section of a conventionally organized research article. I have added a seventh type of transparency in reporting, foundational transparency, to the section about transparency in the literature review. I include it because it contributes to making a judgment about the credibility of a manuscript by adding a measure of the author's expertise in research methods. Absence of this type of transparency often accompanies low levels of other types of transparency. It often introduces doubt about the quality of mixed method studies with two strands that are, at best, only minimally interconnected.

In this table, I make it easier for the researcher new to mixed methods to use these guidelines to organize a manuscript by aligning the criteria to the section in a manuscript where it is most likely to appear. I illustrate the different types of methodological transparency using one of the chapter exemplars in Table 9.5.

Visual displays such as tables and figures are important tools for researchers using any methods to document both the process of and product of the analytical procedures.

Process-Oriented Graphics

In mixed methods, visual displays can provide evidence of causality, demonstrate change over time, and, most importantly, integrate or compare qualitative and quantitative evidence. They contribute to methodological transparency and thus are included in the Guidelines for Methodological Transparency in Mixed Methods by Research Phase adapted from O'Cathain (2010) and listed in Table 9.4. In mixed methods, an effective process-oriented figure provides a map that links the results and conclusions of a research project to its qualitative, quantitative, or mixing source.

Visuals are a key aspect to communicating the credibility of any empirical study (O'Cathain, 2009). With careful ordering, visuals that represent the results of the analysis can allow the reader to follow the development of an argument (McGill, 1990). Demonstrating the link between a result, conclusion, or meta-inference with its data source is a type of

TABLE 9.4 ■ Guidelines for Methodological Transparency for Reporting in Mixed Methods by Research Phase

Location in Research Report	Type of Transparency	Definition
1. Introduction	Rationale	Identifying the rationale or justification for using mixed methods
	Design	Describing key aspects of the design of the study, including the timing, priority, and design and/or illustrating them in a figure
2. Literature review	Foundational	Grounding demonstrated use of the relevant content and methodological literature
3. Methods	Data	Providing details about the sample, data collection, and analytical procedures for the qualitative, quantitative, and mixed elements of the research project
	Mixing	Using language that explains when and how mixing occurred
4. Results	Interpretive	Providing clarity about what results emerged from the qualitative, quantitative, and mixed analysis; also includes demonstrating the link between the meta-inference and qualitative, quantitative, and mixed results
5. Discussion	Value-added	Explaining the anticipated and unanticipated contribution of mixing methods to producing inferences and meta-inferences

Source: Adapted with modifications from O'Cathain (2010).

<move text up throughout>

interpretive transparency, what Teddlie and Tashakkori (2009) refer to as *interpretive rigor*. This is a type of reflexivity that contributes to methodological transparency by explicitly linking the source of data to a conclusion or inference. According to McGill, who no doubt was reflecting a positivist paradigm, "They communicate the simple yet powerful message to the reader that one is in the presence of science" (2010, p. 141).

It is common practice in mixed methods to include a figure in the methods section of a proposal or publication that maps the steps in the process of data collection and analysis. As a streamlined summary of steps in the analytical process, these are particularly instrumental in helping a reader understand how a complex, multiphase study was executed. It is conventional to depict a two-phase study where data were collected and analyzed separately with horizontal orientation, while sequential designs are drawn with

a vertical orientation. Because mixing is so often relegated to the final inference stage and the stages only loosely linked, this type of process-oriented figures rarely highlights an ongoing interaction between the qualitative and quantitative phase.

In the chapter exemplar reporting on an ambitious, multiphase study of resource-poor schools in urban settings, Jang et al. (2008) provided an exemplar of a process-oriented figure that highlights what they described as the messy process of executing mixed method analytical procedures. By *messy*, I expect they meant it was part of the process that had an emergent quality that was not anticipated.

Figure 9.2 is a reproduction of Figure 3 (p. 230) from Jang et al. (2008). Its three-column format that delineates how mixing occurred is innovative.

The centrality of mixing is what distinguishes this figure and puts it forward as a model for others to follow. The figure is organized into three columns that depict what was originally conceived as an independent and parallel analytical process. The left column is devoted to the qualitative steps in the process and the right column to the steps taken to execute the quantitative portion of the study. The originality in this figure is in the rectangles aligned vertically down the center column. This is what the authors refer to as the messy part of the analysis. The six rectangles in the center column depict procedures that were used to mix the qualitative and quantitative data. They are labeled: member checking, data comparison, consolidation into themes, correlational analysis of the consolidated themes, identifying cases, and case narratives of the schools.

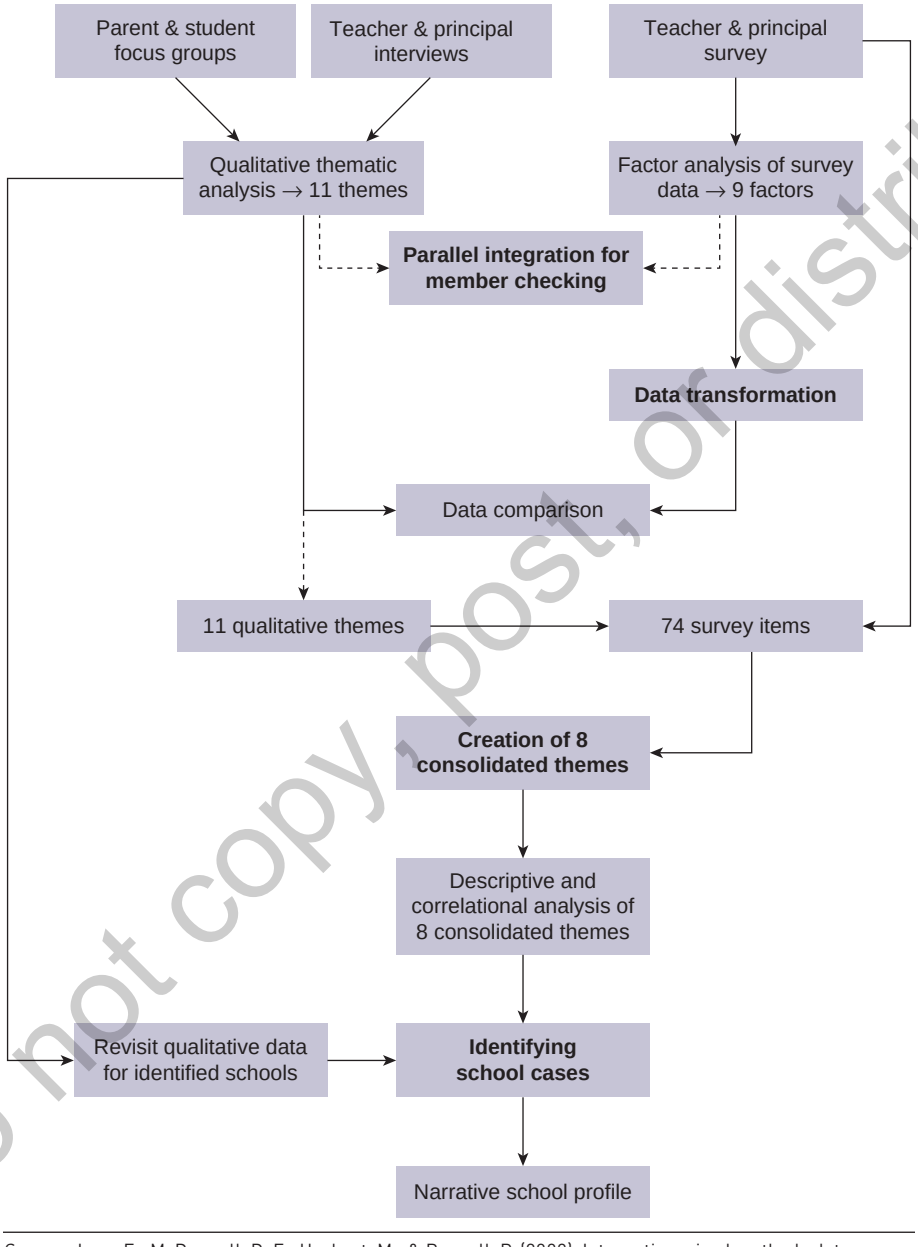
The process-oriented graphic in Jang et al. (2008) meets the expectation of interpretive transparency because it provides an explicit acknowledgment of the data sources used to construct the conclusions. It is useful as a model because it captures the type of mixed methods study where different strategies for mixing are embedded at multiple points during the analysis.

Illustrating the Guidelines for Methodological Transparency With an Exemplar

To add to the overriding practical purpose of this textbook, I pursue the utility of the guidelines for methodological transparency presented in Table 9.4 in two different ways. The first is to demonstrate its utility for identifying methodologically credible mixed methods studies by showing how it applies to dissecting one of the previously featured chapter exemplars. The second is to compare the way this article scores on the GRAMMS (O'Cathain et al., 2008) and the MMER. This makes it possible to see if anything can be gained by a rubric that extends the reporting standards to include criteria related to the validity or interpretive rigor of inferences. The latter criterion is considerably harder to evaluate.

Although it may be no easy task to find another manuscript where the author has been conscientious about meeting reporting guidelines, Table 9.5 applies the set of expectations for transparency in reporting shown in Table 9.4 and demonstrates how each one is manifested in the mixed method article by Catallo et al. (2013). The table also includes information that specifies in which section of the document each appeared.

FIGURE 9.2 ■ Figure Illustrating Steps



Source: Jang, E., McDougall, D. E., Herbert, M., & Russell, P. (2008). Integrative mixed methods data analytic strategies in research in school success in challenging circumstances. *Journal of Mixed Methods Research*, *2* (3), 221–247. doi: 10.1177/1558689808315323.

TABLE 9.5 ■ Types of Methodological Transparency Unique to Mixed Methods by Research Phase as Applied to a Chapter Exemplar by Catallo, Jack, Ciliska, and MacMillan (2013)

Type of Transparency	Section of Document	Page Number	Quote From Document
Rationale	Introduction	2	"The purpose for this sequential mixed methods design was to enhance initial quantitative results by using follow-up qualitative methods."
Design	Introduction	1	"Our goal is to describe the process of implementing a sequential explanatory mixed methods study involving a randomized controlled trial (RCT) with a sub-analysis of quantitative data and a qualitative grounded theory approach."
Foundational	Introduction and Literature Review	1–3	Multiple references to mixed method grounded theory methodological literature
Data	Methods	4	Figure 1 depicting the two phases and describing the mixing
Mixing	Results	7	(a) Figure 1 depicting the two phases and describing the mixing (b) section of results labeled with heading "Integrating of Quantitative and Qualitative Data" (c) Table 3 showing one type of mixing
Interpretive	Results	7	"Participants with high scores [on a quantitative measure of violence exposure] were most concerned with being judged by health care providers for remaining in an abusive relationship." Those with high scores for emotional abuse had more difficulty identifying the relationship as abusive.
Value-added	Discussion	9	Adhering to sampling strategy and principle of randomizing from the randomized controlled trial phase reduced selection bias in the qualitative phase

Table 9.5 demonstrates a credit-worthy thoroughness in documenting the seven indicators of reporting quality in this exemplar. Its framing within a methodological purpose and the documentation of immersion in the mixed methods literature evident by the reference list probably offer some insight into why the authors so ably met the expectations outlined in the reporting guidelines.

CONCLUSIONS

In a summary of the core characteristics of mixed methods research, Teddlie and Tashakkori (2012) made the observation that it is necessary to be a methods connoisseur to do mixed methods research. By that, I think they meant that it is

important that anyone seeking to make a contribution to knowledge or to advance practice through research must present evidence of not only content- or topic-related expertise but also expertise in the methods they have chosen to use. Authors of two of the chapter exemplars demonstrate that this task is more doable by a novice researcher than it might seem at first (e.g., Catallo et al., 2013; Cooper, 2014). Both of these authors were able to simultaneously demonstrate sufficient expertise in their content areas and in mixed methods to produce a credible mixed method research article from dissertation research.

There are many ways a newcomer to the research enterprise with foundational knowledge in mixed methods can craft a dissertation that is doable within the context of limited resources and time. Several methods are well suited to a mixed approach that can be adapted to fulfill the requirements of a degree. In this chapter, I have proposed several ways to adapt content analysis to graduate student research. Other chapters include discussion of exemplars worth replicating that use grounded theory and case study. The critical incident technique (Butterfield, Borgen, Amundson, & Maglio, 2005) and various kinds of systematic literature reviews (Heyvaert, Hannes, & Onghena, 2017) are additional methods that lend themselves to research that a graduate student might undertake.

Most advanced degree students frame their thinking about a research topic in a way that is compatible with the metaphor of an architectural arch. Their priority is to work through the logistics of planning and executing a single study. Students who aspire to a career that involves research are likely to be motivated by a more ambitious agenda. This is akin to the metaphor of the bridge introduced at the front of this chapter because of the ambition to design an initial study that can serve as a way to build a long-term research agenda. A mixed methods publication might be only one of the publications produced from projects conceptualized in this way.

In addition to empirical publications and presentations, students completing a mixed methods dissertation are likely to find that they have much to say about the methods and what they did to adapt them to their particular research problem and context. Packaging these in a methodological article can widen the impact and audience of one's research. This type of publication is designed to describe the process used in an original empirical research project in ways that might be helpful to other researchers undertaking projects with the same methods. That, for example, is what Jang et al. (2008) set out to do in an article that appeared in the *Journal of Mixed Methods Research* with the stated purpose of using insights learned from a mixed methods study of urban schools to illustrate the messy process of using of mixed methods data analytical strategies. Even for someone who does not aspire to become an expert in mixed methods, this type of methodological article has the distinct advantage of generating entirely new, and often unexpected, publication and presentation venues.

Choosing to describe a research study as mixed methods carries an expectation for methodological transparency that is not associated with research identified as multimethod. At minimum, mixed methods require that the author acknowledge foundational literature, explain the rationale for using mixed methods, describe the

design and timing of the data collection using conventional language, and identify matters related to how and when mixing occurred. Methodological conventions are less demanding for studies framed as multimethod.

We close the chapter with a summary of its key points and the consideration of what the next and final chapter of the book will bring.

Summary of Key Points

1. The credibility of a study rests almost wholly on the way it is reported.
2. The way a mixed method publication is organized reflects the priority awarded to the qualitative, quantitative, and/or mixed method phases.
3. The multimethod label is appropriate for studies that lack research questions that require analysis involving interlinked variables.
4. There are features of the design of a mixed method study that facilitate meaningful mixing.
5. The design features that are most feasible for a mixed method study undertaken by a graduate student include the same or overlapping qualitative and quantitative participants and data collection using publicly available instruments or data.
6. Content analysis is a method that is especially adaptable to a mixed methods approach and to research that a graduate student might pursue.
7. It is common practice in mixed methods to include a figure in a publication that maps the steps taken in the process of data collection and analysis.
8. Visual displays, such as tables and figures, are important tools for the researcher to use to document both the process of and product of the analytical procedures.

There is no doubt that the topic of quality in mixed methods and how to assess it will continue to engage mixed methods practitioners as emerging technologies create innovative opportunities for interlocking different sources of data in ways that could not be imagined when the movement first began to cohere ten to fifteen years ago. The final chapter reviews the shifts in views among experts about the most controversial aspects of mixed methods research and considers new directions that promise to keep the field moving forward.

Key Term

- Content analysis

Supplemental Activities

1. Apply the guidelines for methodological transparency listed in Table 9.4 to the article by Stemler et al. (2011) about school mission statements to determine if the lack of foundational grounding in the mixed methods literature is reflected in other ways throughout the article.
2. Compare the qualities and what is communicated about mixing in three or four mixed methods publications that include a process-oriented figure that maps steps in the process of data collection and analysis. Compare what is communicated about mixing in these visual displays with the one discussed in the chapter from Jang et al. (2008), which designated a third column to itemize the steps that involved mixing.

Recommended Reading

Catallo, C., Jack, S. M., Ciliska, D., & MacMillan, H. L. (2013). Mixing a grounded theory approach with a randomized controlled trial related to intimate partner violence: What challenges arise for mixed methods research? *Nursing Research and Practice,* 1–12.

Jang, E., McDougall, D. E., Pollon, D., Herbert, M., & Russell, P. (2008). Integrative data analytic strategies in research in school success in challenging circumstances. *Journal of Mixed Methods Research, 2*(3), 221–247.

O'Cathain, A., Murphy, E., & Nicholl, J. (2008). The quality of mixed methods studies in health services research. *Journal of Health Services Research and Policy, 13*(2), 92–98.