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Chapter 17 Writing Up Multimethod and Mixed Methods Research for Diverse Audiences

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Abstract: Mixed methods research demands a level of integration of methods and/or analyses that is often difficult to achieve, especially within the writing phase. An integrated report might be threatened by philosophical, interdisciplinary and methodological tensions, especially in team projects. Journal policies regarding word length or methodological focus often limit integration. Strategies for resolving these tensions and constraints are suggested, along with practical and innovative strategies for presenting results in an article or report. In particular, mixed methods writers are encouraged to focus on the message rather than the method and to structure their reports around each of the substantive findings being reported, having chosen points of relevance to the target audience for that publication.

Keywords*:* mixed methods, multiple methods, integration of data, integration in writing, paradigm

Introduction

When Alan Bryman interviewed 20 social researchers engaged in mixed methods research about practices in relation to the integration of qualitative and quantitative research, many reported "bringing together the analysis and interpretation of the quantitative and the qualitative data and writing a narrative that linked the analyses and interpretations" as a significant cause of concern (2007: 10). Yet, as Jennifer Greene noted, "writing up constitutes the heart of the communication and presentation process" in social inquiry (2007: 181). Part of the issue for Bryman's interviewees in the mid-2000s was the lack of exemplars for writing – a problem that has been redressed to some extent since then as both enthusiasm for mixed methods and avenues for publication have grown.

Greene (2007) observed that the "express purpose" for taking a mixed methods approach to social inquiry was because the multidimensionality and complexity of human experience demanded more than a single viewpoint. Numbers, words, narratives, poetry, images, and performances can all contribute to a representation of human experience that speaks to people's different ways of knowing and understanding such complexity. She therefore (unlike many of her colleagues) recommended that "the mixed methods inquirer is strongly encouraged to adopt a mixed approach to writing up the results and conclusions of his or her work" (p. 185) and that "effective mixed methods writing is also marbled, like

good pastrami … not layered or offered separately or sequentially; rather, they are mixed together, interwoven, interconnected" (p. 188).

When you focus your research on the substantive issues raised by the questions for your study, having chosen methods appropriate to those questions, then it makes sense to focus your writing similarly. Your data and analyses will be assembled to tell a story that meets the purpose of the study and answers its questions. Essentially, if your use of an integrated mixed methods design is predicated on its adding insights and understanding beyond that which is gained from using a single method or even multiple methods, then it simply does not make sense to use paradigms, methodologies, or methods as the primary basis for determining the content or structure of your written outputs from the study.

Challenges to integration and integrated reporting

Despite acknowledging the importance of integrating methods in a mixed methods study, a number of mixed methodologists will advise you to establish and separately investigate specific qualitative and quantitative questions as part of a mixed methods project (e.g., Creswell and Plano Clark 2011; Dahlberg, Wittink, and Gallo 2010; Morse and Niehaus 2009). Only then, they suggest, are the different strands integrated by contrasting, comparing, building on, or embedding components (Creswell and Tashakkori 2007; Teddlie and Tashakkori 2009). Their recommendations for writing up the research typically follow a similar pattern.

Rather, I (and others) would argue, if mixed methods have been employed to meet a particular purpose, the assumption is that each component method is inadequate or incomplete in itself *to satisfy that purpose*. Therefore the data need to be analyzed together (Bazeley 2010, 2012) and the results need to be written together to achieve that purpose. Furthermore, because a substantial proportion of analysis occurs during the process of writing research (Richardson, 1994) an emphasis on writing the results of different components jointly will help to foster higher quality analyses as well as better integration.

Barriers to integration are only partly to do with factors intrinsic to use of different methodological strategies. The predispositions and preferences of researchers, disciplines, and of funding agencies also play a significant role (Bryman 2007; O'Cathain, Murphy and Nicholl 2007). These barriers become most evident in the structure of the published output from projects. O'Cathain et al. found, for example, that just 21 per cent of the funded mixed methods projects they reviewed realized their potential for integrated reporting.

In this chapter, I explore and offer solutions to points of tension and practical difficulties in writing up and publishing a mixed methods study and I flag issues to consider in framing and setting out a mixed methods paper or report. I then suggest strategies for writing an integrated report or article so that multiple sources of information and analyses are brought together to address the questions asked. I focus on the write-up of a mixed rather than a multiple methods study because the tensions and writing problems that arise in the latter are much less, and where they do arise, they share similar characteristics. I use the term 'mixed methods' in this context as a generic term that includes any research that involves combining more than one type of data, method of data collection, and/or analysis strategy, in

such a way that integration of data and/or analyses (*at least* in the form of providing iterative understanding across methods during the design and analysis process) occurs prior to writing final conclusions about the topic of investigation. Opinions differ as to whether the components that contribute to a mixed methods study are able to stand on their own, being complete within themselves (Creswell and Tashakkori 2007), or whether defining a study as mixed methods carries an inherent assumption that at least one of the components will be subservient to and incomplete without the other (Morse and Niehaus 2009). There is, however, general agreement that for it to be defined as 'mixed' the combination of methods in a study must contribute insights and understanding beyond those derived from the component parts. In a multiple methods study each component method is able to stand on its own and is often reported separately, the interweaving of conclusions derived from both being an added benefit.

Points of tension and practical difficulties in preparing a mixed methods report

Points of tension and practical difficulties in writing a report from a mixed methods study focus in two broad areas: (1) philosophical, theoretical, methodological, and methods tensions underpinning the mixed research to be reported – each compounded when multi or interdisciplinary teams are involved ; and (2) practical difficulties that arise once the research is done – related to the audience for and acceptance of a mixed methods report or article. Each has the potential to impact on the overarching issue of *integration* – the integration of data, analyses, *and reporting*, through which different data sources have become mutually informing and are brought together to address the topics and/or questions being addressed by the research.

Philosophical (paradigmatic) tensions

Debates about tensions created by combining methods presumed to have conflicting paradigmatic (ontological and epistemological) foundations dominated the early mixed methods literature of the 1980s and 1990s. Around the turn of the century, researchers became more interested in what could be achieved by mixing methods. They adopted a broadly pragmatic approach and began to focus more on the practical problems associated with combining methods—just one of Bryman's (2007) 20 interviewees raised conflicting ontology as an issue in integrating data derived from different methods.

Where authors subscribe to the belief that there is an essential link between a particular methodological approach or use of a particular type of data and a particular paradigmatic viewpoint, they will report separate analyses for each methodological component of their study. Others attempt to explain their paradigmatic position (and occasionally everybody else's as well!) but, having done so, they then neglect to link that with their description of their approach to data collection or interpretation, and indeed, might go on to describe methods that conflict with their stated approach. An alternative is to say nothing at all. In evaluation and community studies, with a tradition of using mixed or

multimethod approaches that preceded these debates (Rallis and Rossman, 2003), philosophical foundations for methods used are often more implicit than explicit (Mertens, 2010).

Writing an integrated report requires resolution of these paradigmatic tensions:

- The different components of a project (data, analyses) might be conducted from a common philosophical position so that integration can occur at any stage in the research process, including in the writing of it (Lincoln and Denzin 2011; Yin 2014). Most often, the philosophical bases chosen under these circumstances will be pragmatism or critical realism. (1) In a pragmatic approach, methods are often combined in a complementary or extension design in which the experience gained through one approach is complemented and enriched by the experience of another (Johnson and Onwuegbuzie, 2004). (2) A critical realist approach might be employed to provide a contextualized understanding of social processes. In this approach, consideration is given both to regularities that are assessed through empirical observation of patterns of association, and to the context-driven mechanisms behind those patterns, with the latter being identified from people's constructions of their experience and observation of the processes involved (Maxwell 2004; 2012).
- Alternatively you might take the approach, described by Greene (2007), of deliberately employing a combination of varying paradigms as a way to initiate fresh ideas and knowledge. This dialectical approach, with its goal of initiation, celebrates tensions created through the use of different approaches and methods as a means of prompting further exploration and deeper understanding of the subject matter of the research and related issues. In contrast to the "flatness" of a forced whole, the "gaps and spaces" that can result recognize the incompleteness of any whole, and provide a delightful and disturbing alternative to the blandness of certainty (Freshwater 2007, 140).

Where this tension remains unresolved (i.e., for those who see methods as being associated with incompatible paradigms), then the report will remain separated according to components (as a multimethod study). While the results might be discussed together in a concluding step, doing so is questionable on the same basis that mixing methods was questionable. Why would it be any more legitimate to combine results of paradigmatically incompatible approaches than it was to combine methods associated with them (Moran-Ellis et al. 2006)?

From my experience of working across all publication types (personally and indirectly through others), the extent to which you need to explain the paradigmatic basis for your work will depend on whether you are reporting to a sponsor (usually minimal or no expectation), writing a substantive article (usually a brief mention only, if at all, depending on the discipline for which you are writing), writing a methodological article (requires at least a description of and justification for the position taken), or writing a mixed methods dissertation. For a mixed methods dissertation, you will be expected to provide a cogent argument for your position, possibly (but not necessarily) placed within the historical and or philosophical context of different positions. Your attempts to cover paradigmatic perspectives will potentially be complicated as you attempt to meet requests of reviewers with differing

opinions and positions – a situation best averted by presenting a confidently and clearly articulated approach in the first version.

Interdisciplinary and methodological tensions

Many studies are conducted by teams comprised of researchers from different disciplines because of the range of skills required, posing a further risk to integration and coordinated reporting. Interdisciplinary teams face challenges from differences in epistemology, training, knowledge base, goals, and constituent audiences as well as from interpersonal tensions around trust, power, and the lack of a shared language (Bowers et al. 2013; Curry et al. 2012). For example, in Bowers and colleagues' project investigating the efficacy of different models of care in nursing homes, team members used different terms (patients, residents, elders) to describe the people they were studying. The term 'impact analysis' also meant something quite different to economists and clinicians.

Researchers from different disciplinary backgrounds are trained to use different methodologies and methods. Those from particular disciplines often lack understanding of research processes associated with alternative disciplines, including sampling, analysis strategies, and interpretation. Methodological differences create varying opinions on what counts as evidence and generate the potential for methodological marginalization and disrespect among team members (Bowers et al. 2013; O'Cathain, Murphy, and Nicholl 2008).

Difference between approaches with respect to timelines for progressing the research is a particular aspect of methodology that will affect publication. Whereas "the goal for some is to publish definitive results in research journals, for others, [the] goal is to use preliminary findings to quickly inform policy and practice" (Bowers et al. 2013). For example, Simons (2007) describes how, in the project of which she was a part, not only was the randomized trial the major funded component but, with a formula to work by, results from it were quickly generated and so it was the first component to be reported. Analysis of the qualitative component of the trial was completed much later and was reported separately. In concluding that it often does make sense to report different elements separately, she nevertheless emphasized the importance of contextualizing and sequencing the different reports to ensure they built on each other.

A meaningful interdisciplinary or multidisciplinary collaboration involves demonstrating respect for all included methods, sharing knowledge, learning from each other, and avoiding simply contributing to particular (compartmentalized) elements of the study based on individual areas of expertise. Leadership, of course, is critical, but collaboration is helped also by recognizing that individual team members represent a larger group of scholars, that they need to be treated on their own terms as well as jointly, and that some conflict is inevitable. Reading and discussing previous papers of other team members can assist in developing appreciation for others, as can being open about the strengths and limitations of different disciplinary approaches (Bowers et al. 2013; Curry et al. 2012).

Different writing traditions

The potential for conflict between disciplines represented within a mixed methods team carries through to tensions in publishing beyond timing and separation of component parts because researchers from different disciplines have different traditions, guidelines, criteria and assumptions about what is appropriate and engage in quite different styles of reporting (Becher 1987). This challenge of different communication traditions in different interpretive communities involves aesthetic as well as rhetorical and technical criteria and norms (Sandelowski 2003). Writing experimental and statistical methods and results tends to follow a standard linear approach, along with use of third person and passive tense, suggestive of a dispassionate representation of reality. In qualitative work, however, it can be difficult to distinguish the process of writing from the process of analysis, consequently qualitative approaches to writing are less defined and highly variable but commonly include use of first person and active tense as the author reflects on and interprets his or her data. The result is work positioned somewhere to the left of, or sitting on the fence between, art and science. In either case, doing things differently from the disciplinary norm can engender distrust in what the article is conveying.

One solution is to recognize these differences and employ rhetorical conventions and strategies as appropriate to the kind of data and style of analyses that are being written about at the time while keeping the text accessible by avoiding unexplained, specialized jargon. This means there might well be changes of reporting style within an article. When incorporating results from a survey into a comprehensive consultancy report based on mixed data sources (Bazeley et al. 1996), as well as summarizing descriptive and comparative data in tables, I used footnotes to provide the statistical summaries that supported the many relationships being described in the text, resulting in uninterrupted text for the reader while still satisfying the conventions of statistical reporting. A report on wellbeing for older women (NSW Older Women's Network 1993) used the outer margins of each page to juxtapose illustrative quotes alongside reports of patterns in responses from interviews with members, statistical data, and insights from the literature. (This strategy also ensures that the report writer cannot so easily rely on a participant quote as the only evidence to support an argument.)

Quality of the research

Both the depth of separate analyses and the level and timing of integration of data and analyses affect the quality of inferences reported from mixed methods studies. When reviewing mixed methods studies in health, with a focus on approaches to data analysis, Bazeley (2009) found, too often, that authors provided descriptive results only for one or both components (e.g., descriptive statistics, or a few 'themes' identified), with integration of results attempted only in the concluding section (if at all). Instances of reports where further questions might have been answered or conclusions might have been different if qualitative and quantitative data had been effectively combined during analysis were identified. For example, long term survivors of lung cancer studied by Maliski, Sarna, Evangelista, and Padilla (2003) who scored lower in terms of distressed mood spoke more positively as a

group about existential issues, health and self-care, physical ability, adjustment, and support than did those who scored higher on distress. The authors described each of these five themes in detail, relating them to distress on a high-low group basis, but they ignored physiological measures including spirometry (lung capacity) even though these were described in detail in the method. They also did not take into account a clear association of depression scores with racial and educational differences. A case-based comparison on these variables (individually and together) for each of their five themes might have led them to quite different conclusions.

If the underlying design, data gathering, and analysis for a study is lacking in some way, then there will be no basis for quality reporting from that research. Quality in mixed methods research focuses on the basis for meta-inferences from the study as a whole, but it also assumes that component parts meet acceptable standards for the approaches taken. There are, therefore, three sets of quality criteria that might apply to a mixed methods study: those that focus on the adequacy of each of the qualitative and the quantitative components, and those that focus on the integration of those components – essentially, did the combination of methods yield more than separate studies would have done?

Eight criteria (with sub-components) for quality specific to mixed methods projects were synthesized by Alicia O'Cathain (2010) from a comprehensive review of previous work in multiple disciplines. The eight criteria cover planning, design, data and analyses, interpretation, inference transferability, reporting, synthesizability, and utility. These provide useful guidance to anyone planning, conducting, assessing, or reporting a mixed methods study.

Who is the audience?

Formats for reporting a mixed methods study vary from more formal academic publications and presentations, through reports to funding bodies and other stakeholders, to communication with the general public. Each form has its own requirements for style, content, and timelines for production. While readers of an academic publication expect transparency in the description of both the theoretical framework for and methods used in a study as a basis for interpreting the results obtained by the research, a report to funders and other stakeholders is likely to focus more on the actual results and the implications of those results for their constituent groups than on the theory and methods behind them.

Writing an article for an academic audience: If you're not sure where to publish, get an idea of potentially relevant journals from your reference list. Consider whether your work is of interest to a local or international audience. Visit the website of a journal you might publish in for information for authors. Check out copies of that journal. What kinds of articles do they normally publish? What length is allowed? Do you want to write for a discipline-based audience (with interest in what you've discovered), or does your writing focus on interdisciplinary concerns, or the methods you have used? To what extent will you need to justify and explain your use of a mixed methods approach, if at all? Be respectful of the conventions employed by the particular academic community served by the journal you choose.

Writing a report for (non-academic) stakeholders: Find out what is expected and how your report will be used. Non-academic stakeholders are less interested in academic justifications for methods of data collection and analysis than they are in whether you have produced information they can use. Beware political interference with the results of your work and ensure you substantiate your results and conclusions. Policy makers need numbers, but brief vignettes that are complete in themselves can also be a helpful addition. Use tables and models to present and/or summarize data. Busy stakeholders are less likely to read a full report, so it is critical to provide an executive summary at the start of the report (the evaluation section of the US Government Accountability Office limit theirs to a single page). Smith and Robbins (1982, 60) recommended starting each section with a summary, and putting the key message for each section into the heading for that section. This means it will show up clearly in the table of contents and again in the text where, usually, it will appear in bold and therefore catch the eye of the reader. Thus, instead of 'Parent Attendance Patterns,' a heading might read 'Few Parents Attended Parent Advisory Council Meetings.'

For more leisured readers and for a community-based audience: Provide additional illustrative detail through vignettes or mini case studies. Present your results as a newspaper commentary, novel, film, or documentary, while still incorporating information derived from both statistical and hermeneutic sources. For example, Al Gore's *An Inconvenient Truth* and Michael Moore's *Bowling for Columbine* draw on mixed data and analyses to reach a larger audience (Creswell and McCoy 2011).

Reviewers as audience: In the first instance, a mixed methods article for an academic audience needs to be acceptable to and understood by editors and reviewers who are not used to reading across different paradigms or methods and who might favor particular types of research (Brannen 2005). Authors can experience conflicting reviews with seemingly opposing requests for clarifications of philosophical and methodological approaches. This can delay publication for many months and may result in a less than clear exposition as the author tries to satisfy too many 'masters.' Joseph Teye, who wrote one of the more fully integrated articles published in the *Journal of Mixed Methods Research* for 2012, observed: "As the idea of using mixed methods strategy in this study was to enhance quality of explanations, it was thought wise to integrate the two components in the entire manuscript, rather than having two separate components" (2012, 386), yet he had problems along the way because reviewers wanted him to separate them. Dahlberg et al. (2010) provide useful guidance on understanding the mentality of reviewers (so you can preempt their criticisms). They also suggest working out your response to the reviewers before modifying the paper, to help you clarify what changes you need to make.

Publication (journal) limitations

Apart from disciplinary and/or methodological biases, journal policies that severely limit word counts do not allow the space necessary for reporting a study that involves multiple methods, approaches to analysis, and potentially complex results. Nursing and health journals, for example, often have 3,000 or 5,000 word limits on the length of articles. The consequence is that often only parts of a study can be reported in any one article.

A frequent response is to publish the quantitative and qualitative data components of a multi or mixed methods study in separate articles, but if a mixed rather than multimethod approach is the best one to take for the research purpose, then this solution defeats the purpose of having used mixed methods. Sometimes separate articles can be published side-by-side in the same journal issue (which rather begs the question of why a longer article could not have been allowed). O'Cathain (2010) provides an example of the latter, but observed with a tone of regret that it meant publication of the more illuminating and generalizable conclusion drawn from integration of the two sets of findings never happened.

Mixed methods researchers have employed a number of strategies to deal with this problem, some of which are more satisfactory than others. Strategies, which need to be selected to suit the particular conditions of the study, include:

- Publish a methodological article first to describe the approach and data sources used in the study, then draw on this for reference in later articles. For example, Sharp et al. (2012) published an article that detailed the four-stage, mixed methods sampling strategy they employed for their multisite case study of the implementation of a statewide policy designed to improve student career choices and outcomes. In a government funded study of early career researchers that I led (Bazeley et al. 1996), a detailed description of design, sampling, and data collection for each of the multiple data gathering strategies used was provided in an appendix to the main report. As this report was freely available, it was then possible to present the methods relevant to each of several later articles in summary form with a cross reference to the report and its appendix for further details.
- Alternatively, provide an overview paper at the start of your publication program, and/or an inference paper drawing on the entire body of work from the study to 'wrap up' your program of publication.
- Focus separate papers on specific aspects of the subject matter of the study or issues raised by it, bringing together all relevant sources of data for the aspect or issue being discussed, as described below (framing your paper). Whenever papers are 'drawn off' from a larger study, it is important to locate them within the context of the larger study.
- Seek out journals that allow for longer articles. For example, the *Journal of Mixed Methods Research* allows 10,000 words for empirical reports, *Quality & Quantity* allows 5-10,000 words, and the *International Journal of Social Research Methodology* allows 8,000 words. Examples among journals with a disciplinary focus include *Social Science and Medicine* (8,000 words), *Academy of Management Journal* (40 pages – 10 to 12,000 words), and the *American Educational Research Journal* (20-50 pages).

Framing your writing

With the pressure on to start on a report and/or some academic papers, the task becomes one of deciding how to frame each of those reports or papers and then to work out what is needed from the data to make each necessary point. Unlike conventions for reporting experimental or other hypothesis-driven studies, there is no standard design framework for reporting qualitative or mixed methods research. Your approach to reporting a mixed or multimethod study could depend on the specific study design; the timing of the 'point of interface' (Morse

and Niehaus [2009] – the point at which methods are integrated in a project); the audience (as noted earlier); the nature of the information you are trying to communicate; and whether the paper has a methodological or substantive purpose. Over and above all of these is the question of the specific purpose or focus for each publication (or other form of output) – the 'take-home message' you want the reader to make note of and remember.

Focus writing on the message rather than the method

Your research program will have been closely aligned to your primary purpose(s) and question(s), adjusted to what you were finding in relation to those. These questions will have guided your analyses, but now, in writing up your study, you will need to decide on the focus for each sub-section of an overall report, or of each paper for presentation or publication. To help clarify the focus for any section or item of written output, think about it as determining the 'take home message' for the reader (or listener). Thus the first and most important question to consider in writing up any study, including one drawing on mixed methods, is 'What is the story I want to tell with this data in this publication – what is the message I want people to take away from reading it?'

A report to a stakeholder, such as a funding body, (usually) will necessarily cover the full breadth of the substantive subject matter and related issues encompassed within the aims and objectives of the research proposal, and it should be organized accordingly into sections that deal with each aspect of this subject matter or each issue arising from it, building toward the conclusions and recommendations being presented. Similarly, although written in a different style and with different emphases, a dissertation will comprehensively account for the study program that has been completed. Again, each chapter or section of the results will deal with a particular aspect of the subject matter covered by the research, to create a series of related chapters that contribute to arguing a thesis. View the different methods you employed in the research simply as the tools that allowed you to carry out your investigation, not as a basis for organizing the results generated through them.

Plans for academic papers from a mixed methods project will depend on the complexity and breadth of the project. The data and argument supporting the overall conclusion from the study might be written in a single article. For a more complex study, an overview paper (or published report) might be followed (or preceded) by other articles, each of which is crafted around one of several sub-components, questions, or related issues identified from within the wider study (see Table 17.1, introduced below). Each of these separate papers might embrace quite a deal of complexity, but each will be structured so that the reader finishes reading it with a clear picture of its particular take-home message as well as with a sense of where that fits within the objectives of the whole project.

The content *within* each paper also will be structured to lead to the conclusion by drawing on whatever information is available and useful, regardless of the method used to obtain it, as you build the argument. Not all articles reporting components from a more complex mixed methods study (or chapters within a report of thesis) will necessarily be based on all data sources used, but each will draw on whatever is needed to answer the questions and/or cover the issues raised for that paper.

For example, at the conclusion of our study on the career development and funding needs of early career researchers (ECRs) leading to a multidisciplinary definition of 'early career' for grant distribution purposes, we provided a comprehensive report to the commissioning agency – the Australian Research Council (Bazeley et al. 1996). Members of the research team subsequently published a number of academic papers, as outlined in Table 17.1. Each individual paper focused on or extended analysis of one specific issue covered by or arising from the broader aegis of the report; four of the six integrated data of more than one type and from more than one source, but the focus always remained on the issue being discussed. This is illustrated by the structure (shown in Table 17.2) of the last-listed paper, which was about the background and rationale for defining who is an early career researcher (Bazeley 2003). An excerpt from the text of this article can be found later in this chapter, illustrating writing based on a combination of statistical and textual data sources.

Table 17.1 Academic papers published following publication of an initial, comprehensive report

Publication	Focus/Primary question	Types of data used
Bazeley 1998	Who wins prestigious research funding?	Quantified administrative by-product data, supplemented by interviews with panel members, successful researchers and heads of departments
Grbich 1998	The effect of departmental socialization on ECR development and productivity	Qualitative (comparative) case studies
Bazeley 1999	Factors predictive of continuity as an active researcher after PhD	Survey of PhD graduates supplemented by survey of ECRs, interviews with ECRs, and responses to public advertising
Asmar 1999	Gender and discipline differences in academic ECR experience, post PhD	Survey of PhD graduates
Marsh and Bazeley 1999	Level of agreement in assessor scoring for grant applications	Administrative by-product data (assessor scores) contextualized within other project data
Bazeley 2003	Describe and justify a definition for early career status for use by academic research funding bodies	Document analysis (grants schemes), surveys of ECRs and PhD graduates, interviews (multiple sources), responses to public advertising.

Table 17.2 The structure of a substantively focused mixed methods paper (Bazeley 2003)

Abstract
The ‘problem’ of early career researchers
Research design [and data sources]
Milestones in an academic research career
Completion of high level research training
Obtaining an academic appointment providing a stable research environment
Balancing the demands of teaching with the need/desire to research
Maintaining a research profile when promotion brings increased non-research responsibilities
Achievement of established researcher status
Identifying research potential
Qualification as a criterion
Age as a criterion
Length or stability of employment as a criterion
The research ‘track record’ as a criterion
A definition for early career
Assessing early career status
Conclusion

Setting out the mixed methods paper

Although there is no accepted template to draw on for reporting mixed methods studies, there are certain expected inclusions. Several chapters, papers, and editorials offer detailed guidance on what to cover in each part of a mixed methods proposal or report for a variety of audiences (e.g., Creswell and Plano Clark 2011; Dahlberg et al. 2010). The degree of variability in how a mixed methods study is conducted is surely a factor contributing to the lack of standardization in the structure of written reports, and in this regard, mixed methods is similar to qualitative research. But perhaps this variability provides the opportunity, sought by Wolcott (2002, 102) to make academic writing “less pompous and less dependent on ritual, more searching and discovery oriented,” with literature, methods, and theory included on an as needed basis? For example, as well as providing introductory context, literature might be included in with other results (Morse 2007), especially if exploration of these particular items of literature was prompted by something found in the data.

Whatever system or convention you use to guide your writing, a clear and progressive structure to the report or article is critical to giving the reader a sense of direction and confidence in following the material presented. One of the ‘tricks’ to working out structure is to ask: What did the reader *already* need to know to understand the events being described or the point being made now; and what does the reader need to know *now* in order to understand what’s coming next? Review the table of contents (the document map in the navigation pane is a great interim substitute) to check the sequencing. In general, description will come before comparative and relational analyses, theory before application, and so on. The importance of structure runs right down to the level of the paragraph and sentence: thus, the first sentence in

a paragraph identifies the (single) point to be made in that paragraph, which is then developed in the rest of the paragraph, and (in general) a sentence starts with the words to which you wish to give most emphasis. Good linking paragraphs or sentences are another essential feature, to lead readers smoothly from one section or chapter to the next so that they always have a sense of knowing where they are going.

Having a plan so "the writer can focus on one sentence or one paragraph at a time, shifting back and forth between the details and the whole [means that] the task is reduced to writing paragraphs, each of which has a job, rather than writing an entire paper from beginning to end" (Dahlberg et al. 2010, 778). Planning of this nature is helpful when writing has to be built into an otherwise busy schedule, and is essential when a team is involved in writing. My strategy is to make extensive use of headings and the document map (Windows) or sidebar (Macintosh), so that as I'm preparing to write I can easily locate a heading and drop random ideas and bits of information under it (very messily!). I then gradually reorganize and rationalize these and fill out each section as I become confident I am close to having sufficient material for writing that section. Once I have a sense of the structure of the whole I will then work through, more-or-less completing sections from beginning to end. Final steps involve checking the consistency of each section with the goals and framework for the paper, checking the ordering and that each section links smoothly to the next, and then 'sitting on it' for a time before a final read through and edit.

Describing the design and methods

The number and arrangement of methods (each selected on the basis of how they will assist you to answer your questions) and the need to show how these various methods will be integrated in a mixed methods study complicates writing the methods section of a report or paper. Some suggestions for structuring the methodology or methods section follow.

- Start with a reminder of the purpose and provide a one or two sentence overview of the study design. Avoid simply applying a design label from a textbook as it might not truly represent your methods.
- Follow with your rationale for why it was necessary to use mixed methods to achieve your specific purpose. You do not need to provide a history of the mixed methods movement or of decades of paradigm debates, nor do you need to elaborate on all the alternative approaches you considered – you are not writing a methods (or philosophical) textbook!
- Elaborate on the design features, making clear whether this was how the project was designed, or what actually happened. A visual model showing timing, relative importance, and how each element influenced others at each stage of the project is a useful presentation tool (Creswell and Plano Clark 2011). Diagrams were employed to supplement descriptions of methods by authors of 7 out of 12 research articles in the *Journal of Mixed Methods Research* in each of 2 sample years reviewed (2010 and 2012).
- While it might be possible to present a design neatly, what happens in fact is likely to be far more messy and so you will need to show where modifications occurred, or add some

descriptive-explanatory text accompanying the design visualization to explain complex details and/or to indicate what was changed during implementation.

- Provide the details of sample, data collection, and analysis strategies, as appropriate, for each phase of the research and/or each method employed, and the implications of your choices, e.g., in relation to your capacity to generalize from your study.
- Show when and how the methods and/or analyses were integrated, and (if mixed rather than multimethod) what kind of additional benefit was expected from that integration.
- Optionally, use a table to summarize the methods, showing their fit with your questions and, as in Table 17.3, perhaps also with your theoretical framework. A table of this type is useful for summarizing and clarifying the contribution of each component to the objectives of the study. It is especially valuable when you are writing an article or presenting a proposal for mixed methods research and you have limited space.
- Indicate both design and in-practice limitations of your study.
- Comment on the ethical implications of your study.

Transparency in reporting methods

Maxwell and Loomis (2003, 242) described a distinction between an author's characterization of his or her methodology (reconstructed logic) and the reader's reconstruction of methods (logic-in-use), claiming that, historically, there has been "widespread but relatively implicit use of methods, approaches, and concepts from both the qualitative and quantitative paradigms." They illustrated their point by citing a number of classic studies including those by Blumstein and Schwartz (1983) and Festinger, Riecken, and Schachter (1956), each of which claimed to be quantitative in design (a more 'acceptable' approach at the time) yet each relied heavily on extensive contributions from qualitative data in order to interpret and present their findings.

Transparency in describing methods employed in research is a major criterion for quality in reporting (O'Cathain 2010). It is important for a reader to know how results were generated and what problems were experienced as this can affect his or her assessment of the trustworthiness of the results. Transparency of methods also affects a reader's capacity to apply what has been learned from the study to other situations. In writing a *mixed* methods report, you need also to be quite explicit about where and how integration between methods occurred (O'Cathain 2009), particularly as your initial descriptions of methods used for data gathering and analysis are likely to be presented separately for each data type or source.

Table 17.3 Data collection and analysis procedures for a proposed study of immunization compliance*

Research questions	**Theoretical/ conceptual basis**	**Data sources and timing**	**Data analysis**
Disposition, coping style, experiences and beliefs of the parent	Self-efficacy theory; parental efficacy; health locus of control	Interview about background experience of diseases, and expectations and priorities for child – pre-birth. Survey questions and scaled items – pre-birth and 10 weeks post-birth.	Statistical analyses of scales and survey items; content coding of interviews; comparative analyses and interrelationships between variables and between qualitative concepts and quantitative variables
Social integration of the parent - information and social influence - availability of social support	Social influence – normalising. Social support theory	Social network analysis (ego-nets) and associated immunisation-related accounts re members of the ego net – 10 weeks post-birth	Extent, centrality, density, considered in relation to description given of belief and support from each network member; interrelationship with other data e.g., with self-efficacy, locus of control, needle phobia, support to attend clinic, compliance.
Assessing probabilities and decision-making under conditions of ambiguity and risk	Decision-making theory	Narrative re process of going (or not going) for immunisation; mapping of decision-making – 10 weeks post-birth.	Narrative analysis re story of the day; coding of decision steps and influences; comparative analyses and relationships with other data.

*Part of the first two of three phases, adapted from a proposal for public health research funding.

Strategies for integrating writing of results

While the content of your results will be determined by your purpose and your research questions, researchers using mixed methods are often advised that the structure of their write-up will parallel the design of their study (e.g., Creswell & Plano Clark 2011; Dahlberg et al. 2010). Thus in a concurrent design with a complementary purpose authors might be advised to present the results from each component and then bring them together; they will almost always be advised that results from a sequential design should be presented as a sequential write-up, revealing or expanding results in accord with the sequence of each method used.

Rather, I would argue, the *methods* section is the place to show details of the methods used for each component and how methods are expected to interrelate. In the *results* section for a substantively focused empirical study, as noted earlier, the emphasis and consequently the rationale for organization will be on the substantive questions and issues that were raised as the subject of the investigation, even if the methods were conducted separately or sequentially. For example:

- When preliminary work is designed to generate appropriate design and wording for questions in a survey, there are two possibilities: (1) If that preliminary work is minimal, regard it as a routine element of designing a survey, historically not seen as warranting classification of the study as a whole as mixed (or even multiple) method. (2) 'Serious' qualitative work undertaken as a foundation for a quantitative survey will be foundational to describing and explaining what was found through the quantitative survey. The various questions or issues raised in the initial qualitative work and further explored through the survey should be discussed as interrelated aspects contributing to the primary purpose of the whole undertaking.
- If the design is one in which qualitative work is undertaken to complement or expand on questions raised by a previous quantitative tool, then the expanded understanding needs to be reported along with the initially gained information, with the two sets of information being integrated point by point.
- In a confirmatory design it might have been necessary to keep the methods independent during data gathering and analysis, but that does not necessarily mean they should be reported separately. Rather, show how each element of the study was confirmed (or contested) as you go using phrases like: 'both sources of data showed that …' or 'this was confirmed by … from the [alternate method].' Further joint analyses might be found necessary to resolve discrepancies or explain results.

Having made a case for integration and having described some aspects of what that might look like, I now turn to examples of both routine and more creative strategies that have been used to achieve integrated reporting of results. Reports of analyses (including interpretation of the meaning of specific results as they are presented) should always be completed within the results section(s) of a dissertation, article, or report. The discussion section is then reserved for elaborating on the significance of the results as a whole in relation to the original objective and in the light of the literature – it should not include any new results and it should not be the place where the results are integrated.

Juxtaposition of statistical and textual data

This is perhaps the most common and most important approach to integrated reporting, where data from different sources are reported side-by side. Qualitative data might extend understanding of a statistical pattern, a statistical pattern will add breadth to the qualitative data, or the two might come together as "warranted assertions" based on a review of all available evidence (Greene 2007). Hall et al. (2010) juxtaposed insights from interview, survey, diary, and observational data to produce an excellent example of an integrated evaluation report that was prepared for both government and community audiences.

Similarly, the following extract from Bazeley (2003) includes a "marbling" of comparative analyses of text, statistical analyses, illustrative quotations, relational statements, documentary data and explanatory comment. Together these supported the argument for the second milestone to be passed in building a research career (as outlined in Table 17.2) – the need to gain stable research-oriented employment.

> While the majority of PhD graduates were in full time work or further study within a short time of graduating, many were unable to find employment which allowed further research or which fostered the development of a career in research, frustrating to those who had spent years pursuing that as their goal. Frustration amongst those who were unable to gain academic employment was most evident in the physical sciences and the humanities, disciplines in which the majority of graduates had to seek new employment and in which the shortage of new academic positions was most acute.
>
> > *I cannot convey to you how very disheartening this situation is: to be keen to embark upon an academic career but to be, as so many others are, unable to make a small entrance into a teaching position.*
> >
> > *My ambition was to become an academic, but I have now almost given up hope of attaining that goal. Hardly any positions in my field have been advertised in the last four years.*
>
> Social science and health graduates were least likely to express problems regarding employment. For the social scientists at least, this was related to their generally being in employment already by the time they graduated with PhD.
>
> The perceived lack of a career structure for young researchers can remain an issue even if employment is obtained. Many seeking academic appointments in particular complained of having to "continually move from institution to institution on contracts lasting one year or less" with consequent impact on ability to apply for research grants. While university internal granting schemes were generally designed to benefit new or recently qualified staff, some required a minimum guaranteed period of continuing employment as a condition for award. In such cases, those on one year appointments or in the last year of a three year appointment found themselves unable to apply for research support at the time when they most needed it.
>
> Lack of security in university employment posed some, considerable or a major problem to their research for 42.5 per cent of the early career academics surveyed while the majority (64.5%) rated the prospects for someone wishing to pursue a research career in their field to be only fair or not good at all. Those in postdoctoral research positions experienced particularly high levels of job insecurity, stating that this was a major problem causing them difficulties in their research or in the development of their research career (mean 4.7 on a scale of 1–5). Of the six disciplines specifically studied, physicists consistently rated their employment prospects and future research prospects most poorly ($F=4.63$, $df=5,267$, $p<.001$ and $F=3.37$, $df=5,285$, $p<.01$ respectively), followed by historians, with those in nursing/health being most optimistic.…(Bazeley 2003, 264-6; used with permission from Springer)

As I reflect on this extract twelve years after writing it, I am thinking that I would now attempt to interweave the statistical data even more effectively with the qualitatively derived text. I would also note (in brackets at the end of each quote) the disciplines of the two quoted graduates (humanities and medical sciences, respectively), as relevant demographic information.

Inclusion of numerical data is integral to conveying patterns, to showing you have accounted for all data, and observed absences, but "acontextual counting" needs to be

accompanied by details of what was said (Sandelowski 2003). Statements supporting the observation of a broad pattern should precede illustrative quotes so that the quotes can be seen in context. One of the distinct advantages of using qualitative computer software when analyzing data is that matrix displays of patterns in the data provide both numerical results and give access to the text that supports those numbers, thus supporting integrated reporting of both ‘how many’ and ‘in what way’ (Bazeley and Jackson 2013).

For example, Dockett and Perry (2004) used a table, a graph, and descriptive text when they reported differences in parents’, teachers’, and children’s experience of issues relating to the children’s transition from home to school. They were able to show numerically that both teachers and parents rated adjustment as the predominant issue (of eight altogether) in transition to school, but that in their responses teachers focused on the organizational aspects of adjustment (being able to follow directions, demonstrate independence), while parents focused on the social aspects of their child fitting in to the group. Numbers and text provided valuable, if different, insights into the issues of transition; both were necessary for a rounded understanding of those issues.

As well as elaborating on patterns, qualitative data might help to *explain* statistical patterns, with the explanation logically accompanying the statistical report. A paper derived from the aforementioned study exploring who received research council funding and how accessible it was to early career researchers (Bazeley et al. 1996) provides an example:

> Applicants who had recent ARC or NHMRC funding were significantly more likely to gain funding for their current project (at 26.0%) (particularly if it was for a related project) although it was by no means a guarantee of continuing support, while those who had 'other external funding' in the absence of ARC or NHMRC funding had a reduced probability of success (at just 3.8%) (χ^2=24.51, df=7, p=.001). When chairs of the discipline panels were asked about this latter apparent anomaly, they suggested that much of what is funded by other external sources might be regarded as 'consultancy' or 'development', rather than 'research', indicating that it is therefore questionable that it constitutes a legitimate research activity resulting in the advancement of knowledge rather than merely the application of that knowledge. For track-record recognition to be gained (within the ARC network) from research undertaken with non-ARC funding, publications emanating from that research must include a basic research component and be widely disseminated or, preferably, be presented as peer-reviewed scholarly publications that will contribute to the development of the discipline. (Bazeley 1998, 444)

Conveying results using alternative modes of representation

Noting that each inquiry tradition has its own mode of persuasive writing and voice, Greene offers “multiple representational forms … as one valuable strategy to both respect and integrate different writing traditions” (2007, 179). She reports a study that demonstrated audience preference for mixed forms of presentation (for the same information) over single forms, hence her recommendation for ‘marbling’ different forms within a presentation, as noted earlier. This means, for example, that statistical data might be accompanied by a (co-located) vignette, or an image, or even a poem to provide contextual understanding or to engage the emotions as well as the intellect. Picture the child in poverty, while taking in statistics about prevalence. Support a narrative account with a visual map of interrelated concepts, perhaps with strength of relationships indicated numerically (Bazeley 2013).

Combinations of these different modes of presentation, as with the harmony created by different instruments in an orchestra, will communicate to a wider audience as different elements engage different facets of the reader's or listener's capacity for understanding. Whether the approving audience would necessarily include the 'wardens' of a dominant scholarly journal is uncertain; it would be likely to depend on the forms chosen, their relevance, and the skill with which they are interwoven.

Presenting and reconciling alternate versions

The results of a study might be presented in alternative accounts that convey different understandings of the same event or situation. John Jermier (1985, cited in Frost and Stablein 1992) presented the same characters differently in two short stories to convey contrasting theoretical perspectives on worker alienation derived from field observations in a phosphate factory. He followed the two stories with a reprise and a tabulated review of the contrasting theoretical implications. The telling of a story or description of an event from different perspectives has been referred to as the Rashomon Effect (Heider 1988), a term derived from a film of that name. The film is based on a 12th Century Japanese story in which four witnesses to an event each gave contrasting but entirely believable evidence about it, with no attempt to resolve the differences. Differences in understanding of an event might cause a problem for a jury in a legal case, but value is created for the mixed methods researcher when the dialectic between paradigms or methods initiates further analysis and attempts are made to reconcile them (Greene 2007). Even just the actual process of attempting to write a report from a study with divergent results, through consequent immersion in the problems of the data, helps the writer to work through the differences and reach some resolution.

Integrate using a (borrowed) theoretical framework

In their article exploring the dynamics of health sciences mixed methods research teams, Curry et al. (2012) used representational group theory from organizational psychology to bring together a diverse set of literature and experiences to understand and provide constructive guidance for the tensions, conflicts, trust issues, and leadership issues that arise when dealing with disciplinary differences, methodological differences, and differences in language between team members. Their use of this theory provided a coordinated framework showing how mixed methods teams can move forward by separating the challenges experienced in the team from the level of interpersonal conflict.

After electronically searching seven years of studies (2004-2010) from the medical and health literature, Evans, Coon, and Ume (2011) found just 28 articles in which the authors reported using an *a priori* theoretical framework to guide their study, with 11 of these being in nursing. Seven of the 11 nursing studies effectively threaded the theoretical framework through the design, data collection, analysis and discussion. Those that did were more likely than the other four to integrate the qualitative with the quantitative components of the study (6/7 compared with 0/4). The authors of this review then demonstrated the usefulness of a "life course perspective," with its attention to "trajectories, transitions, turning points, timing of life events, adaptive strategies, and cultural and contextual differences"

(2011, 280) as an integrative theoretical framework for their longitudinal, multisite, case study of crucial moments in caregiving for Mexican American families. They juxtaposed data from interviews and scores on standardized measures, gathered over a 15 month period, with critical moments along a time line to create time-ordered summary profiles for each case. Having a theoretical perspective helped them to focus on relevant constructs and interrelationships as they designed and carried out their study. They expect that it will also contribute to the generalizability of their results.

Use of displays

Using a model to present results from diverse strands of a study forces the researcher to contemplate how the strands come together, enriching both the analysis and the writing. "You know what you display" was Miles' and Huberman's (1991, 91) famous maxim. With all forms of display, allow the display to do its work of communicating. Rather than repeating the content of that communication in the text, use text accompanying the model to explain or elaborate on the messages contained within components and connections in the display.

Udo Kelle (2006) used quantitative survey analysis, supplemented by understanding of economic circumstances and occupational culture gained through qualitative analysis, to study the "status passage" of school leavers moving into craft, office, and technical-industrial occupations. He found an anomaly in the data for industrial mechanics who, because of economic circumstances at the time, were restricted to less stimulating and less prestigious employment than they expected. Most came to accept good working conditions and good salary as a sufficient compromise, but a minority of mechanics who desired to optimize their career development took steps to further their education. Using the multiple data sources, and with this added insight, Kelle was able to develop and refine a visual model which supplemented his text as he explained the passage from school education through vocational training to employment for German youth in those occupations (Figure 17.1).

Figure 17.1

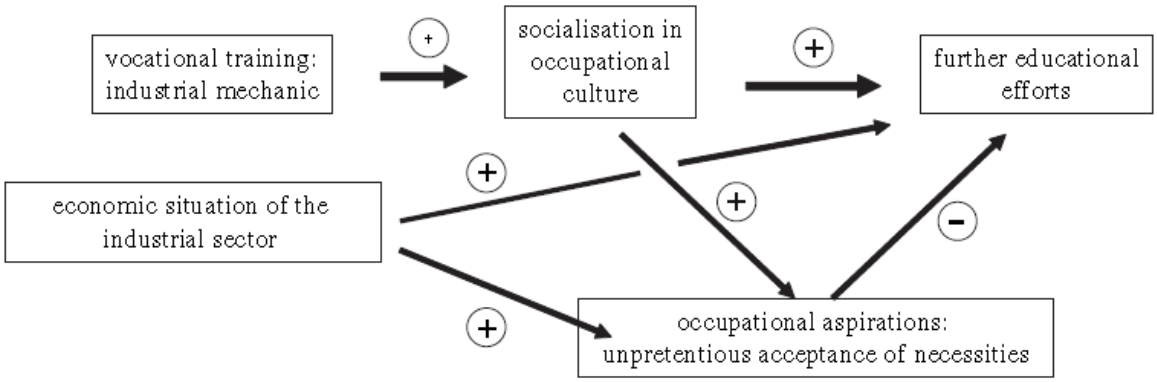

Figure 17.1 Causal model of the relation between vocational training, macroeconomic influences and educational efforts of respondents.
Source: Kelle 2006, 300; Figure 1. Reprinted with permission from Taylor and Francis.

A table, like a model, is also helpful in integrating data from multiple sources to present as part of the results, either to unite elements that have been separately analyzed, or to provide the basis in the results for an integrated interpretation and discussion. Lee and Greene (2007) used a joint display of quantitative and qualitative responses as one of two integrative strategies for furthering analysis of their data on the predictive value of standardized test scores for proficiency in English and then to demonstrate discrepancies in scoring in their report of the study. The statistical results suggested a lack of overall correlation between test scores and grade point average, but the joint display of test scores matched with extracts from students' reports of their experience of language difficulties, faculty reports of students' difficulties, and assessment of their academic performance revealed the variability and complexity of this relationship in relation to both the primary discipline of the student and the kinds of difficulty experienced – aspects that were not taken into account in the overall statistical assessment.

Use of metaphor

A metaphor uses a concept or process that is readily understood to facilitate comprehension of something more complex. Mixed and multimethod researchers have creatively employed a wide selection of metaphors to describe and convey to the reader what they are doing when they combine data and/or analyses. These range from *sprinkling* one type of data through another, to constructing a *mosaic, bricolage,* or *jigsaw* where different forms of data are placed side by side or are *woven* together to complete a design or picture, through *mixing* or *blending* to *conversation, morphing* and *fusion* to capture the iterative, sometimes reconstructive, and generative nature of combining methods (Bazeley and Kemp 2012). Lawrenz and Huffman (2002) creatively employed the metaphor of an *archipelago*, for example, to show how the various elements of their study of the professional development of teachers came together to reveal a 'submerged' whole.

Triangulation is perhaps the most used, and misused, metaphor in mixed methods research. How many of those who use this term to explain their design or analysis have really checked either the history of the term or thoughtfully considered its meaning as a metaphor? (See, for example, Bazeley and Kemp's [2012] derivation of different metaphors for triangulating data, and the special issue of the *Journal of Mixed Methods Research* on triangulation [2012, *6*, no.2]. The latter includes Denzin's perspective, past and present, on the term he helped to popularize.) Triangulation has been used in at least two ways in the mixed methods literature: to describe assessment of the convergence (corroboration, validation) of results obtained by independently using two or more methods and, more commonly, to describe the concurrent use of more than one method in order to gain a fuller understanding of a research problem (complementarity). In neither sense is it a metaphor for mixed research in general. Each of these meanings has different implications for the conduct of research (requiring separation versus combination) and the way it is reported, so if triangulation is to be used as a metaphor when writing up a mixed or multiple methods study, it needs to be explained.

Narration and/or progressive focusing

Present what has been learned as an unfolding narrative, perhaps even a mystery, with a 'plot' that builds toward a climax, while drawing in both quantitative and qualitative elements of the data (Leech 2012). As you progressively focus, you might work from a broad overview of the topic through a more detailed view of its intricacies to eventually arrive at a coherent model, argument, or thesis.

Telling the unfolding story of the research is likely to be more appropriate for a methods-oriented rather than results-oriented paper (because the latter more often requires integration of what has been learned from the different methodological components). For example, Seltzer-Kelly, Westwood, and Peña-Guzman (2012) narrate in a deeply reflexive way the change in focus and shifts in their understanding that occurred through the research process as the three team members, with their different backgrounds, skills, and perspectives, attempted to generate 'reliable' coding and then sought to understand and learn from the differences that could not readily be resolved through simple review and discussion.

Conclusion

Despite attempts to classify them, mixed methods studies are infinitely variable in their design. Equally variable are strategies used to integrate the data, methods, analyses, and conclusions in a study that might be defined as having adopted a mixed approach. Explicit and tacit tensions serve to foster division within teams and between methodological components of a study. Paradigms, methodologies, and methods are relevant to choices about the design of your research and interpretation of research results, but they are not a deciding factor in how you structure the report from your research. Rather, in writing up a mixed methods study the substantive purpose of the study, reflected in its aims, objectives, and questions, can and should guide planning of the written product(s) from it, and the structure of sections within those products. Keeping this in focus will help to diffuse any tensions, and will ensure that the knowledge and understanding that was gained through the research – the message being presented – is clear to the reader. Only when all relevant data are brought together to bear on any issue or question being discussed will the full value of multiple methods or the added benefit from integrating mixed methods become available to readers.

The process of writing is a process of analysis. As you work to structure your writing and to determine what evidence you have to support your claims, you will inevitably be sent back into your data, to think about them further, to 'play' a little more, to reflect on what you are finding, until your message is coordinated and clear. This works to the benefit of your research outcomes and of your publications from them.

Questions for discussion

Review several articles written using mixed methods in your discipline area. Ask:

- What is the primary ‘take home message’ from each article?
- Is each article reporting an entire study, or part of one? If the latter, how is that part contextualized?
- How is each article structured (what is the organizing principle used) to present its message?
- What integrating strategies have been employed to help convey the methods and results from the study (if any)?
- Compare articles that are more or less successful in conveying their message:
    - In what ways do they differ?
    - How effectively do they communicate with the reader?

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