Sage Research Methods

Writing Up

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Writing Up

Introduction

This stage will:

- Explain how to write academically
- Provide tips for writing up reports, dissertations, and theses
- Give guidance on how to write up the different sections of your research paper

Writing up your research is a crucial stage of any research project, and it's wise not to leave consideration of this step to the end. Writing as you go along can help to make the task seem less daunting, so start early!

How Do I Write Academically?

Academic writing has much in common with any good writing but there are particular requirements which apply when you are engaged in the production of knowledge.

Good Writing

Most universities have guides to good writing and to academic writing and these should be consulted. The following points need to be addressed always:

- **Is my writing grammatical?**

- **Is my spelling correct?**

  Beware the spell checker! A common spelling fault is to type homophones—words that sound the same but are spelled differently and have different meanings.

- **Is my punctuation correct?**

  Check these things by reading over your work. If you are not a native speaker of English, then get somebody who is to read through it for you.

Academic Writing

The following points apply specifically in academic writing:

- **Are my arguments warranted?**

  For my original claims to knowledge, I must present evidence generated by research. For claims based on pre-existing knowledge in the field, I must present citation of the authorities.

- **Have I concluded my work with a synthesis?**

  A thesis is an argument. A synthesis is an argument based on the integration of elements of knowledge. You should bring your evidence together in relation to your research questions and say what it all means. DO NOT conclude with a summary of everything that has gone before. This is one of the commonest reasons for PhD theses being referred for substantial revision.

Intellectual Property and Correct Behavior

- **Have you been careful to cite explicitly when you use direct quotations from the work of others?**

  You must do this. If you do not, then you are plagiarizing. If you summarize the argument or evidence of someone else in our own words, it is still good practice to assign that evidence or argument to them: “X has shown that (date and page number).”

- **Have you included in your bibliography references to all publications which you have directly or indirectly quoted in your work?**

Read more about referencing and citations

What Are Some Tips for Writing Up My Research?

- **It’s never too early to start**

  Do as much as you can as you are doing the research and analyzing/interpreting your findings. Anything you can write up at this stage is money in the bank. It may well be that you have to go back over things and change them. But it is much easier to edit than to write from scratch.

- **Be motivated**

  You have done this work. You need to get what it says out there so other

people can be informed.

- **Be systematic**

  It is good practice to set targets:

  - Have a timetable for getting the writing up done
  - Decide how many words you need to complete each day.

- **Look at examples**

  Whatever kind of document you are writing, find good examples and see how they are done.

- **Get started**

  Getting going requires effort. But once you are going, you have overcome inertia and can keep up a decent momentum toward completion.

- **Be good enough**

  Your examples will help here since they can show you what good work looks like. You need to do a good piece of work but remember that the best can be the enemy of the good. It has to be got done.

- **Don’t worry about length in your first draft**

  It is easier to cut than to put in. In writing a first draft don’t worry too much about word limits.

- **Cut to length in your final draft**

  Edit in the way a newspaper sub-editor rewrites a piece:

  - Write shorter and more focused sentences
  - Delete unnecessary diversions
  - Get your message across more clearly.

How Do I Write a Report?

A report is a document which tells somebody what you have done. You are reporting to them. It is usual for funding bodies to require a report on a piece of research completed and submitted relatively quickly after the completion of the work.

The account you give should include:

- An executive summary—a quick run through the essential elements of the whole document.
- If required (and it usually is), a summary of your use of resources. This is not full “accounting” in a financial sense—that will be done by finance staff—but some quick coverage of what you have done with the funders’ money is always helpful.
- An account of what you did. This is an account of process.
- An account of key findings.
- If relevant, an account of what you are going to do next. This might be a publication strategy if you are reporting on a piece of academic work.
- If relevant, a set of recommendations for action. This is often the end element of a piece of policy or practice research.

- If relevant, an account of how an intervention worked or did not work—a summary evaluation.

Reports are often constructed to a different format than traditional academic writing. They usually have numbered chapter paragraphs and sub-paragraphs as well as page numbers and contents pages and indexing make reference to these.

Search for resources about writing reports

How Do I Write a Research Proposal?

Click here to view the online version of the project planner for an optimal experience of its multimedia resources.

> [MUSIC PLAYING] Malcolm Williams, thank you very much. Before we begin, could you just let us know who you are and what your role is? Yes. I'm a professor and Director of the Cardiff School of Social Sciences.
>
> My background is in methodology and methods, philosophical problems in social science and also secondary analysis of lost data sets. Thank you. We're going to talk about designing a research proposal today. And research proposals will always be shaped readily by whoever the funding body is but aren't
>
> there commonalities there? There are commonalities and they're impor-

tant commonalities. And I think I would suggest there are four. The first one is the importance of a clear research question. The second one is to be very clear about your research design. The third one is to be clear about the methods you

propose to use and they may change as the research goes on. And the last one is a realistic appraisal of resources. So when we're talking about design, research design,

are you talking about quantitative over qualitative? No, I'm not. I'm not talking about that. I think it's very important to get away from that. By designs, I think there are four main designs or subsets of those. The first one's experimental, the second one is longitudinal, the third one is cross-sectional, and the last one is case study. So let's take something like living alone.

If we are interested in exploring that, we might be interested in finding out how living alone has changed over time. You might want to follow, for example, cohorts of people through several years. Now, that could be quantitative or qualitative. You use a large data set to do that or you might actually follow some people over time.

But you might be interested, perhaps, in a case study of a group of people, any person or persons, to look at that in depth. So the design and the

method are not necessarily associated-- there's not one design fits one kind of method. They might be quite separate.

So what you're saying, though, is that the research question can imply the kind of designs that we use. Yes, it would. Yes. Again, taking my initial question of living alone, if you're looking for the kinds of things that are associated with living alone, there are very often things through time.

What was your previous household? What was the previous kind of household you lived in? What was the household composition? What was your marital status? How does that change? And in fact, in that particular example, it's different for women at different times in their life cycle. So that would kind of imply a longitudinal design there. But you might also want to go to a case study, which

might be a group of people. It could be quantitative then. Or it might be to look in some depth of the experiences and understanding who lives alone. So yes, the research question would imply the design to a great extent.

So how does design relate to methods? Well, again, it's about whether you are looking at things at the macro, meso, or micro level. Let's look at qualitative methods. Now, qualitative methods are obviously

very good at drilling down into the life experiences of individuals or groups. And to some extent, you can perhaps informally generalize from those away from those because there are commonalities because of the kinds of social backgrounds that the individual will have with a particular kind of community.

But there's a limit to that and you don't know whether you've got typicality or not. So at some point, you have to move towards quantitative methods and that might be cross-sectional It might be longitudinal data. So there is a relationship but the relationship is not a fixed one.

Then, indeed, take, for example, longitudinal research. Though there is a growing body of qualitative longitudinal data, actually, what we very often mean by that are the large data sets in Britain, such as millennium cohorts, which follow a large group of individuals at a time.

You've mentioned the need to appraise the resources that we have, as well, but what kind of resources do you have in mind for a researcher? All resources are finite and the most finite one of all is time. I think people don't often think about time. Time is what will constrain with every cohort.

Let me take it in a couple of extreme examples. Suppose someone said to you, look, you can have as much money as you need to do this re-

search but basically, what we want is a 2,000-sample survey and we want the data in by next week. You cannot do it. It's very difficult. If, for example, that survey required self-completion either

online or by post, you wouldn't have time to do the reminders to the non-responders then. And so your non-responders are going to be a problem for you. Likewise, if you do face-to-face interviews, you probably would be able to get your sample in that kind of time. At the other end of the kind of methodological scale,

you wouldn't have time to have focus groups or depth interviews with people in that time span. So actually, practice for lots of people's first experience with research is doing their PhD and you've got really around nine to 10 months to do your field work. What can you realistically do in that kind of time frame?

So that's the first one is time. The second one is expertise. Do you have the expertise or will someone in your team have the expertise to do the kind of research you want to do? So for example, you might want to use multi-level modeling. Have you got someone who can do multi-level modeling--

not just understanding what the results are, understanding what it is, but to actually do it? So you do need to have that. You need to have perhaps

statistical expertise. You might need to have expertise in doing in-depth interviews. There's a range of things you will need. Have you got those and can you get them? If you can't, then you have to try

to think of answering the question in a way that will fit with your portfolio of expertise. So be pragmatic. And the third one, then-- and of course, this is less of an issue for PhD research-- labor costs. When you're doing PhDs, you possibly will make some help with transcription and so on and so

forth-- [INAUDIBLE]. But your labor costs are always by far the biggest costs in the social sciences. We don't have lab costs as the natural sciences as such. Our lab costs are relatively smaller, a few computers and so on. But your biggest costs are your labor costs. And if you're designing a study, it's

very important that you make sure you've built in enough money for all those labor costs. And then, after that, the other kinds of things are all relatively straightforward and simple. They're things like travel, consumer rules and so on. They're not so much of a problem. But time, expertise, and labor costs are the most important things to think about.

You're painting a picture there, Malcolm, of quite a lot of compromises going on. And I want my PhD to be the best PhD it can possibly be but that

does feel like compromises in what you've said there. It is compromises and there will always be compromises, even in the most well-resourced research.

But a PhD, as much as anything else, is about research training. No, you obviously want to do the very best work that you can but it's about learning from our experience and I can show you what you can do with those resources in a relatively short period of time. So that is OK. And it depends on the con-- if you

wanted to do a national study of a particular social phenomenon and make claims that are going to hold up across a large number of cases, then that's a very difficult construct to patch up a local transport study, where it's very pragmatic and simple and straightforward

answers. So it's about being fit for purpose, really. So there are compromises, yes. And coming back to the whole idea of constructed answers, there's one thing we haven't talked about

is how that might build on what might already be written. How do you build on previous research? This is also related to resources because there's very few areas of research that people have not done work on.

Usually, it's a fairly well-trodden path. What you're doing is answering the

very specific question, whether slightly pulled of context. And sometimes, you may work on a research proposal and then suddenly find someone's actually done almost exactly what you're looking for. And there's nothing one can do about that. But you can start by first of all

conducting a very thorough literature review. Who has done what, how have they done it, and how well have they done it? And how far can it answer part of your question or all of your question? So sometimes, market research, we've got desk research. So get your desk research done first.

The second thing them is to look at the data that the model will be there, the available data. You don't want to be spending time and money on developing a large survey, several thousand cases, when there's already a perfectly good set of data existing.

Can secondary analysis do part of the job for you? And obviously, again, coming back to PhD students, the skills are different but they are nevertheless still important. To be able to do that kind of analysis is still an important skill. So you shouldn't think somehow-- because you're

doing secondary analysis as opposed to primary work, you shouldn't denigrate that. That's actually terribly important-- same goes for qualitative data sets. A re-analysis of qualitative data sets can often give you better

answers than going out and collecting original data. Then, when you've done what you can in those kinds of ways, then think about where there's a deficit in terms of the data, when you need to actually go out and handle

more. Malcolm Williams, thank you very much. You're welcome. [MUSIC PLAYING]

Types of Research Proposal

A research proposal is a statement to somebody else, telling them what you want to do with your research, so that they will let you do it. It can be:

- A proposal from an undergraduate to a dissertation module organizer
- A proposal from an MA student to a dissertation module organizer
- A proposal from a research student in relation to an application for admission and/or funding to a university
- A proposal from an academic to some external funding body asking for the money to carry out a research project
- A proposal from a social researcher in an organization to the resource allocators in that organization asking for the resources to carry out a research project.

Research Proposal Guidelines

Almost all research proposals should be based on a format as specified by the person or body to whom the proposal will be submitted.

Students at any level will have a set of guidelines made available to them. Research councils generally require proposals submitted in electronic form according to a set of protocols and issue detailed guidelines. Some charitable funders and many organizations require much shorter proposals in an outline form but even then there are generally guidelines available which specify what is required and in particular specify lengths of the proposals.

Essential Elements of a Research Proposal

Some essential elements of a research proposal are:

- A statement of the issue(s) to be investigated
- An account of how the research will be done
- A review of all ethical issues associated with the research
- A specification of the resources required to do the research
- A timetable for the research
- An outline of what the products of the research will be.

Additional elements for larger scale research typically include reference to:

- The potential impact of the research
- Proposals for disseminating the findings of the research.

Search for resources about writing a research proposal

How Do I Write an Undergraduate or Master's Dissertation?

Students undertaking taught courses in the social sciences are typically required to write dissertations as part of their final element of assessment. Dissertations are regarded as "craft pieces" in which students demonstrate their achievement of the learning objectives of the program of study they have undertaken.

Although there is never a requirement for an undergraduate or taught Master's student to "make an original contribution to knowledge," there is an expectation that a research-based dissertation will demonstrate competency in the doing of research and in the interpretation and analysis of that research.

In writing dissertations of this kind, students should:

- Pay careful attention to the learning objectives for the dissertation module in their program
- Make sure that they structure their writing so as to demonstrate achievement of those learning objectives
- Read carefully through guides produced by their departments on how to do the dissertation and follow the advice given
- Consult their dissertation supervisors to the full extent permitted about the organization and layout of their own dissertation
- Look over examples of good dissertations which are available to them
- Work to a plan
- Work to a timetable.

Search for resources about writing a dissertation

How Do I Write a PhD Thesis?

Requirements for a PhD

A PhD thesis must “make an original contribution to knowledge.” Usually the regulations of a university also specify that the thesis must contain material of publishable quality but not necessarily in publishable form.

There are now also professional doctorates, Doctor of Education, Doctor of Business Administration, Doctor of Psychology, and Doctor of Applied Social Science. These combine advanced course work in a professional field with the production of a thesis which is somewhat shorter than a PhD thesis but is expected to be of the same standard.

Writing Up a Doctoral Thesis

Students writing up a doctoral thesis must:

- Carefully consult the regulations for the award of the degree and make sure that they understand what they have to do to get the degree.
- Consult all advisory material produced by their university in relation to the actual format of the degree.
- Read through successful theses in the same general area as their own and see how these are done in terms of:
    - Organization

    - Standard of writing
    - Form of argument
    - Articulation of a conclusion.
- Discuss with their supervisor:
    - A plan/outline
    - All material as it is written
    - A preliminary draft
    - A final draft.

A Simple Model for Writing Your Thesis

A simple model for any doctoral thesis is to see it as a sandwich:

- The introduction and the literature review are the first piece of bread
- The methods section is the butter on that piece of bread
- The findings, as presented, is the filling
- The analysis and interpretation of the findings are the butter on the second piece of bread
- The conclusion is that piece of bread.

Essential Elements of a Thesis

However the thesis is arranged, these are the elements that it should contain:

- Introduction
- Literature review/problematic
- Methodology/Methods section

- Account of the findings
- Analysis/interpretation of the findings
- Conclusion
- Bibliography.

Helping the Examiners

Remember that the thesis is written to be read and that the crucial readers are the examiners. Make it easy for them by explaining in the introduction:

- What you are doing
- Why you are doing it
- How you are going to do it
- How the thesis is arranged
- What each section does.

Search for resources about writing a thesis

How Do I Write the Chapters of My Thesis, Dissertation, or Journal Article?

Are you struggling with a certain part of your thesis or dissertation? Click on the links below to find more useful guidance and tips on writing up your research.

- Writing your literature review
- Writing your abstract

- Writing your introduction and conclusion
- Writing your methodology section
- Writing your theory section
- Writing your bibliography
- Writing about qualitative research
- Writing about quantitative research
- Writing about mixed-methods research
- Data visualization

How Do I Write My Literature Review?

What Makes a Good Literature Review?

A good literature review does not take the form of a sequence of summaries of what other people have said. You should follow this pattern:

1. Establish themes which emerge from the literature.
2. Discuss the themes, especially conflict and difference in understanding of them.
3. Draw it all together to establish:
    a. The agreed state of knowledge on a topic—if there is one (agreement doesn't happen all that often in the social sciences!)
    b. The nature of disagreements and arguments.

Disagreement

Generally, the literature disagrees about one or more of the following in relation to any substantive social science issue:

- What the issue actually is.
- How we should investigate it. This is about methodological position.
- What general frame of understanding should be applied to that investigation. This is about both methodology and general theoretical framing.
- What we actually know about it.
- What we should do about it.

Often the most radical disagreements occur when you are working at the boundaries of disciplinary understanding. You will do this more often than not if you are working in an applied field.

Synthesis

Your literature review should synthesize arguments and debates rather than just summarize. You can then take a position yourself from those available in the literature. Most researchers do, more often implicitly than explicitly. It is better if it is explicit. Sometimes your research will be about comparing and contrasting positions expressed in the literature in order to judge between them.

What Should I Consider When Writing Up My Literature Review?

Here are five things to consider when writing up your literature review:

1. In writing up, the literature review normally goes straight after the introduction.
2. The literature review may be simply an account of the existing literature as a way of establishing existing knowledge to which this particular piece of research will add. This is very common in biomedical research.
3. More usually in the social sciences, it takes the form of an argument in which differing positions are articulated and contrasted. So it can be thought of as a synthesis, not just of agreed positions, but of contrasting arguments.
4. This form of discussion can be understood as establishing your *problematic*. This means not only what the issue being researched is, but also the way in which you are going to frame and investigate it.
5. The literature review should conclude with the specification of your research questions.

Read more about the problematic

Read more about methodological positions

Search for resources about writing a literature review

How Do I Write My Abstract?

What Is an Abstract?

An abstract is a brief notice, normally not more than 250 words, which gives a summary account of your full written-up piece. Abstracts matter because most

people will read the abstract before deciding whether something is interesting and important enough for them to be worth reading in full. You'll also be asked to submit an abstract to a conference if you want to present a paper there.

What Makes a Good Abstract?

A good abstract:

- Tells the reader what the research is about
- Tells the reader the key findings
- Tells the reader how the research was done.

Note that key findings come before a discussion of method.

You need to catch the interest of the readers. Be punchy! (But never exaggerate or mislead.)

Search for resources about writing an abstract

How Do I Write My Introduction and Conclusion?

The Introduction

How much you write in your introduction depends on the kind of piece you are writing and how much space you have. The introduction should always contain the first of the following, and, if you have space, the others as well:

1. An outline of the issue being investigated.
2. An explanation of why the issue interests you.
3. A summary of the argument and debate surrounding your research issue. You will expand on this in your literature review.
4. An explanation the organization of the piece as a whole. This is a reader's guide. The first readers are likely to be examiners or reviewers. So, make it easy for them to see what you are trying to do with the piece as a whole.

The Conclusion

A good conclusion is NOT a summary of everything you have written in your piece. What you need to do now is explain what it all means. Here are some ways to do that:

- It's often useful to work systematically through your research questions. If you have organized your "findings" elements by research question, then at the end of each findings section you will have already summarized what you now know in relation to that question. Return to this and present a synthesis of what knowledge you have generated.
- You can begin the conclusion by restating your research questions. You can then proceed to say what you now know that was not known before, your contribution to knowledge. This can be about empirical findings, the nature of debate and argument, or—and ideally—a synthesis of both.
- It is always useful to finish your conclusion with a statement of what new issues and questions have arisen in the course of the research. You can say something interesting about where we should go now.

- If your research has policy or practice implications, then your conclusion can be the place to lay them out in detail. Sometimes it is best to do this in a section or chapter which immediately precedes the conclusion. There is no rule about this. You must decide what works best.

How Do I Write My Methodology Section?

How Long Should My Methodology Section Be?

What you write here depends on what kind of document you are writing. This will fall into one of these categories:

- **For short journal articles**, typical of biomedical journals, you can do little more than name a conventional method.
- **For longer articles**, typical of the social sciences, you can say more but not a great deal unless the article is specifically about the methodology/method as opposed to the findings.
- **For undergraduate and taught MA dissertations** this is a very important part. The learning objectives will specify achievement of understanding of methodology and methods. This is where you demonstrate that understanding.
- **For PhD students** this is a very important part because you need to demonstrate that you are a competent social scientist. You must show that you can do research in a way which leads to the production of knowledge and is based on an understanding of how to validate that knowledge.

- **In all other forms of social science writing** it matters because a common sort of attack on your findings will be based on the assertion that you did the work “wrong” and that therefore the findings have no value. You have to say enough so that others cannot make that attack. You have to stand up for what you have done.

How Do I Set Out My Methodology Section?

1. Begin with a discussion of methodological position. How much you do here depends on the kind of document you are writing and how important the specification of methodological position is for your overall work.
    a. If you are doing something in a traditional way, then this may not take up much space.
    b. If you are arguing for an innovative and radically different approach, you need to say a lot.
    c. For taught students this is generally an important element because it is where you demonstrate understanding.
2. Then, turn to an account of the actual methods you will use in doing the research. This should be justified by reference both to your methodological position and by citation of the relevant methods literature. The latter is about saying this is a good way to find out what I need to know because the method(s) work to answer my questions.
3. Here the sources you cite to justify your approach will depend to some degree on the level at which you are writing.
    a. Taught students can perfectly well cite standard methods texts, partic-

ularly handbooks of social research. The idea of a handbook in science is to provide a general reference text which gives a decent account of key approaches and procedures.

   b. In more advanced work, standard texts can also be cited but it is useful here to refer also to more developed methods and methodological texts and to the methods literature in appropriate articles and chapters. A lot of advanced methods discussion is to be found in edited collections. Make sure you are aware of this material.

4. Usually you write the methods section in draft before doing the research because you need to say what you are going to do before you do it. However, you should always come back to this section after the research has been done.
5. You will then include a final part which describes the actual doing of the research in terms of experience and changes. Unless you work to a rigidly specified experimental or quasi-experimental protocol, things often change as you go along. You need to explain this straightforwardly. Process matters and you must describe it.

How Do I Write About Theory?

Grand Social Theories

Social research is seldom, if ever, concerned with the production or testing of grand social theories. In most cases, much of what you have to say about social theory will be handled in either or both your literature review and your discussion

of methodology.

Grand social theories are not theories in a testable sense, but rather they are much more general frameworks for understanding and engaging with the social world. So you may well draw on grand theory in a discussion of the works of the-orist(s), and by reference to empirical studies carried out in a particular theoretical tradition.

This kind of use of theory is really part of:

- Framing your problematic
- Your overall account of both the nature of the issue(s) you are investigating and
- the way in which you are going to do the actual research.

Your methodological discussion is of great importance to this section.

Theories of the Middle Range

The theories with which social science can engage empirically are “theories of the middle range.” This is a term used by Merton (1968). These are theories which seek to describe causation and causal process in carefully delimited social con-texts.

There is a difference between theories of the middle range and simple hypothe-ses. Hypotheses are almost always confined to a specific, single cause style state-ment. Middle-range theories can accommodate multiple and complex causation.

They necessarily pay careful attention to the causal implications of context.

Many people working in a realist tradition have drawn on this Mertonian framework in formulating theories which can be modeled in quantitative terms and handled by process tracing in historical/social modes.

Be Clear About What You Mean When Discussing Theory

Theory matters and has to be considered. You have to be clear about what theory means for you. It may mean both grand theory for framing and middle-range style theories for modeling.

Reference

Merton, R. K.(1968). *Social theory and social structure*. New York, NY: The Free Press.

How Do I Write My Bibliography?

Your finished work must contain a bibliography. Although it's usually at the end, it's important that you keep it in mind throughout your research.

Tips for Writing Your Bibliography

- Keep on top of your citations as you go along so you have them all to hand. Endnote or similar software programs enable you to do this easily.
- Adopt the bibliographical form usual in your discipline or field. This will be

specified in your university regulations or specified in the instructions to authors from a journal or publisher.

- There are two main systems which are used:
    - The Harvard system, in which citations are by author name and date and with page references
    - The Vancouver system, in which citations are numbered in order of appearance.
    - Generally, in the social sciences, the Harvard system is employed. Biomedical disciplines and fields and History tend to use the Vancouver system. But always check with your institution or publisher before you start writing.
- You must include in your bibliography any author and piece you have either cited explicitly or referred to by name in summary form.
- Reviewers and examiners have a tendency to look for their own work being present in your bibliography. You may want to remember this in doing your literature review!

How Do I Write About Qualitative Research?

Interpreting Data

No data speak for themselves. This is obvious when you are dealing with quantitative data where you always have to say what the data are telling you. However, with qualitative data, which exist generally in the form of text, there can be a temptation just to reproduce the text as if it does speak for itself. The point is that the

text has to be interpreted. It is interpretation which moves us from just reportage to social science.

How Do I Write Up My Interpretation?

How you write up your interpretation will depend on the mode of interpretation you have employed.

Thematic Analysis

The most common way of dealing with qualitative data is by thematic analysis. If you have done this you will have worked through your materials in order to see how you can answer your research questions. You will also have established themes from that procedure which relate to your research questions.

Elements Which Do Not “Fit” Your Research Question

You may well have also encountered important elements in this process which do not relate to your original research questions in a simple way and which must be addressed.

How to Organize Your Analysis

With an established *and* developed set of research questions, and a thematic analysis which relates to those questions, you have a good framework for organizing the writing up of your material.

In a thesis or a book, one straightforward way of doing this is to have a chapter per question with the sub-sections of the chapters being organized around the themes relevant to that question. Each chapter can have an introduction which develops the research question in relation to the theme and a conclusion which draws out the overall implications of what you have found.

Use of Text

It is very likely that you will use text derived directly from your findings. You will use:

- Direct quotations from interviews and/or focus groups
- Direct quotations from observational notes
- Primary source documents.

But these quotations will not stand alone to speak for themselves. Instead they will be used to sustain your thematic interpretation. They stand as evidence for *your* arguments.

Find Examples of Good Practice

The best way to learn how to write up your qualitative research is to find good examples and draw on them. You should read through several documents of the type you are writing—dissertations, theses, research reports, journal articles, monographs—and see what their authors did.

What Is a Thick Description?

The other approach to writing up qualitative research is some variant on thick description. This is writing which is meant to convey the meaning of something to the participants in the social world being described. The form is more literary—and to say that is not to criticize. This is a powerful way toward understanding. Again, the best way to learn how to write in this way is to imitate good examples.

Read more about interpreting qualitative data

How Do I Write About Statistical Data and Quantitative Research?

Interpreting Numbers

Numbers do not speak for themselves. You have to interpret them. You also have to present them so that others can challenge your interpretation of them. The numbers you present when writing up do not take the form of your raw data. Those are made available to others through data archiving.

Rather, you present numbers in a “cooked” form (which does not mean falsified!) with your interpretations being the product of “digestion.”

How Do I Present Numbers?

The numbers themselves are presented as the results of some form of statistical

manipulation. You can present numbers:

- As numbers, in the form of tables
- As pictures, in the form of graphs.

It is important to remember that many non-expert readers find the numerical interpretation of quantitative data difficult to understand and find visual interpretation much easier. They can see what they are looking at when they look at a graph.

Fortunately, all available statistical packages now include image-making modules. This makes data visualization easy.

Which Numbers Matter When Writing About Quantitative Research?

You have to decide which numbers matter and in what form they work best as the basis of your interpretation. These decisions should be structured around your research questions, both as you originally formulated them and as new questions emerged in the course of your research and analysis/interpretation.

You can use numbers in the following ways.

Description.

Often you will begin with descriptions of your population(s) and of your sample(s). Here you can use summary statistics presented in tables and graphs. Graphs are particularly useful for showing how things are distributed, how they are spread out.

A set of boxplots demonstrates very clearly differences in level and spread for a set of categories.

Classification.

Here the simplest way to present your data is in the form of tables which provide descriptions of the categories the process has generated. You should:

- Report both the values of variables for each category.
- Give some indication of the spread of those values within the category.
- Then you use this table as the basis for writing "pen pictures" (i.e.., textual descriptions) of each of your categories.

Testing hypotheses.

Typically, here you will be working with:

- The results of an experiment or quasi-experiment designed to assess whether an intervention has made a difference or
- Sample survey data where you are testing the hypothesis that observed differences within a sample are significant enough, given sample size, for it to be inferred, with a given level of probability, that they might exist in the population from which the sample is drawn.

Both involve statistical inference. Remember that any differences you observe when you have data for all the cases in the population are really there. You do not need to engage in statistical inference. Here your writing notes whether the differ-

ences are statistically significant *and* whether they are substantively significant.

Large samples can generate statistically significant differences which are not substantively significant. Substantive significance is a judgement call in which you answer the question: is this difference big enough to matter in reality?

Constructing Causal Models

We can never establish cause but we can see if a model we build is compatible with what the data are telling us. Most causal models are variants on regression and work in this way:

1. We specify some form of relationship among variables, in multi-level modelling with variables measured at different levels of reality.
2. We possibly include interaction terms.
3. We then see how well the model fits reality in terms of statistical significance and strength of explanatory power.
4. Then we comment on this, often seeking to establish just how much of the variation can be assigned to different “causal” variables.

Set theoretic models are somewhat different. We either report on the truth table which shows all existing configurations in the data and their relationship with an outcome, or on the configurations generated by a reduction process. These approaches allow us to deal with equifinality, with a range of causal processes toward an outcome. Here we report on:

- The nature of the configurations, raw or reduced
- The degree of association between them
- The presence or absence of an outcome.

Tip: Find Examples

In our writing, we are always attempting to say what the data are telling us. The data do not speak directly; we interpret them. Our interpretation is just a possible interpretation mediated through our existing knowledge and all the contextual factors which inform any interpretation.

The best way to learn how to write up quantitative research is to look for good examples of the kind of document you are going to produce and imitate them.

Read more about interpreting quantitative data

How Do I Write About Mixed Methods and Mixed Data?

The issue here is not how you write about material derived from a particular method, as you would do that in the normal way for that method. Rather, the issue is how you bring materials of different kinds together in a coherent way. This depends on what you want to do with the materials.

Description

Describing mixed data is straightforward. You present the data whether they are in the form of numbers, text, and/or images, and then you tell the reader what this material is describing. So, for example, you might use:

- Census data to describe industrial change in a locality
- Text taken from interviews/documents which describes that change in narrative form
- Images of the place at different times.

All these are ways of describing change and you bring them together in a narrative of change, drawing on them to illustrate your story as a whole.

Exploring Causation

Here the key idea is that of triangulation. If you have both

- a quantitative model which explains outcomes in a particular way
- and a narrative which through process tracing gives a narrative of cause(s) in relation to outcome(s) which accords with the form of the model

then you explicitly assert that the two forms of data have provided you with accounts which triangulate your general understanding of causation in relation to the outcomes.

Read more about interpreting mixed-methods data

Read more about triangulation

What Is Data Visualization and How Do I Use It When Writing Up My Quantitative Research?

Why Should I Use Visualization?

Most people understand quantitative information better when it is presented in visual form rather than as numbers in a table. It is very useful to turn as much as possible of your quantitative information into visual forms, particularly when you are writing for a non-expert audience, for example in a report which will be read by people without statistical expertise.

What Visual Tools Can I Use?

There are a range of visual tools that you can use. These include all forms of conventional graphs, including box plots and scattergrams. There are also more specific graphs, for example the dendogram, which shows the pattern of fusion in a hierarchical cluster analysis and the visual representation on three dimensions of a multi-dimensional correspondence analysis. These are both ways of showing relative differences. Being able to see differences helps people to understand their nature and scale.

Search for resources about data visualization

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