

1 Designing and Managing Research Projects: An overview

Topics covered in this chapter

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For many people, setting out to do a research project for the first time can feel like a voyage into unknown seas. Exciting, perhaps, but also a little bit scary. What dangers might lie lurking just over the horizon? What fate could befall the unwary or ill-prepared? Often this sense of trepidation is compounded by a lack of clear navigational aids for the journey ahead. By this we mean basic, easy-to-follow advice indicating how to design and initiate a new research project, and how to manage the various phases of a research project once it gets going.

This book aims to provide a straight-forward, practical introduction to some of the more crucial knowledge and skills people are likely to need when setting out to do a research project in the social and health sciences. It covers issues such as how to choose a research design for a project, how to write a research proposal, how to apply for research funding and how to think about a project's ethical dimensions. It also looks carefully at how to write up and disseminate research reports, paying particular attention to how to organise and present technical reports, student theses or dissertations, and manuscripts for journal articles. The book also offers a range of tips and suggestions on other important topics such as teamwork and supervision in research, the place of different types of computer software in research and the work options available for people interested in pursuing a career (or at least gainful employment) as a researcher.

A key goal of the book is to try to minimise the amount of trial and error that researchers have to use when learning how to design and do research projects. By considering the ideas and suggestions outlined here, researchers should be able to plan their projects more thoroughly and thoughtfully. This should help reduce the amount of precious time and energy expended on unnecessary tasks or solving unexpected problems, experiences that can be discouraging for the first-time researcher and often lead to projects being significantly disrupted or delayed, or even totally abandoned.

Origins of the book

The idea for this book was conceived over a decade ago when the first author, David Thomas, was operating a research methods advisory service and teaching graduate courses on social

and health research at the University of Auckland. Through this work, David encountered many students and staff in the early stages of developing their research skills and pursuing careers as professional researchers. In talking with these people, it became clear that there were certain aspects of the process of designing, conducting and writing up research projects for which people tended to require the most advice or support – aspects that they were most likely to come unstuck on or find challenging. In response, David began developing a variety of course handouts and short webpage articles providing advice on these and other key aspects of the work associated with designing and doing research projects. These handouts and articles included practical tips and examples drawn from David's own research experiences and reading. Later, the second author, Ian Hodges, also began contributing articles on selected topics based on his experiences of working as a researcher in government agencies and as a self-employed contractor.

After feedback from students and staff suggested the various handouts and articles had generally proved helpful, we decided there might be value in using the material as the starting point for developing a more comprehensive introductory workbook or guide for researchers. The structure and content of the current book has evolved out of this initial basic framework, with most of the original text now having been considerably expanded, updated and revised in the course of preparing the book for publication. This has included adding entirely new material on topics such as how to design a research project, getting ethics approval for research, working with colleagues and supervisors, and strategies for disseminating project findings.

Who is the book aimed at?

The book is aimed mainly at new and emerging researchers in the social and health sciences; these may be people who are just beginning their first significant research project, or making their first attempt to secure sizable funding for a research project, or are in the midst of writing up their first major project report. Many of these up-and-coming researchers will be based in universities or other higher learning institutions. Others will be employed in non-university research settings such as government departments or private sector businesses, or pursuing work as independent research contractors or consultants.

In our experience, most of these researchers are likely still to be coming to grips with many of the core tasks normally associated with designing and carrying out a fairly substantial research project. This includes tasks such as selecting appropriate research designs and research methodologies, preparing research proposals, submitting ethics applications, applying to external agencies for funding, managing project staff and resources, writing detailed research reports, and disseminating research findings to different audiences. This book is intended to help accelerate people's understanding and awareness of these and other key areas of the research process. In particular, the book is intended to serve as an accompaniment to more experiential or 'hands on' ways of learning how to design and carry out a research project, such as by working directly alongside a team of more experienced researchers or in collaboration with an academic supervisor.

As readers will appreciate, the boundaries of social and health research are wide, covering such diverse disciplines as social anthropology, sociology, social geography, economics and community psychology, as well as the many health science disciplines such as medicine, nursing, physiotherapy, midwifery, epidemiology and public health. However, what generally unites all these different fields is a broad concern with better

understanding the enormous array of conditions and factors influencing human behaviour, social interaction and well-being. Designing and undertaking research projects is central to this work, with the ultimate goal being to try to reveal new insights on these many different conditions and factors through the application of systematic, focused observation and inquiry.

Although new or emerging researchers in these various social and health research disciplines are often interested in very different research questions or problems, there are, in our experience, certain common principles related to designing and carrying out research projects that have general applicability across virtually all the disciplines. It is these common principles that we aim to focus on here, laying out some basic introductory guidelines and advice for up-and-coming researchers to think about and perhaps use as a foundation for their own work in the years ahead.

To make the book as accessible as possible, we have tried to write each chapter in fairly simple language, using only a minimum of jargon or specialist technical terms. In addition, for many of the core topics covered, such as designing a new research project, doing a literature review or organising and writing a research report, much of the information given is pitched at the level of the inexperienced beginner. Very little previous knowledge is assumed and quite a lot of text is devoted in places to spelling out basic principles and giving detailed examples of what we mean. We consider this approach to be appropriate in an introductory guidebook such as this, since in our experience new and emerging researchers are often looking for considerable detail and structure in the advice they get from others. In time they will almost certainly develop their own distinctive approaches for handling different research tasks, but in the beginning they tend to want very specific and unambiguous advice on how to do things.

Of course, we would like to think the book will have some value for more experienced researchers, too, especially researchers looking to refresh their knowledge or reflect on aspects of the research process in which they are particularly interested. Although much of the information presented in the book is quite pared down and simplified, and therefore may not always appeal to the more seasoned investigator, nonetheless many of the points we make could help some experienced researchers to see aspects of their current practice in a new light.

Structure of the book

Perceptive readers studying the contents list will have noticed that the chapters in the book are laid out in a sequence that roughly follows the steps involved in carrying out a research project. Planning and doing a research project often involves a fairly standard set of steps or stages (although not always). These include designing the project, preparing a research proposal, obtaining resources for carrying out the research, conducting and managing the project, writing a research report and communicating research findings.

Table 1.1 outlines in more detail the steps or stages that we believe most experienced social and health researchers tend to follow when designing and running research projects. The table also lists the main activities usually done in each stage. The right-hand column of Table 1.1 indicates which chapters in the book cover skills and knowledge relevant to each research step or stage. For example, information on how to prepare and write a research proposal is in Chapter 4 and information on how to get funding for research projects is in Chapters 5 and 14.

TABLE 1.1 STAGES IN PLANNING AND CONDUCTING A RESEARCH PROJECT

Research stage	Accompanying activities	Chapters in this book
Designing a new research project	Selecting a research topic	Chapters 2, 3
	Choosing research objectives or questions	Chapters 2, 3
	Identifying the rationale for the project	Chapter 2
	Choosing a research methodology	Chapters 2, 3
	Searching existing literature for ideas	Chapter 7
	Thinking about resources (money, people)	Chapters 5, 10
	Discussing ideas with colleagues and/or supervisors	Chapter 10
Preparing a written research proposal	Writing down and finalising details of the project's research design	Chapters 4, 12
	Writing down research objectives and questions	Chapter 3
	Incorporating ideas from previous research	Chapter 7
	Doing a literature review	Chapter 7
Applying for project funding	Identifying possible funding sources	Chapter 5
	Writing and submitting funding applications	Chapter 5
Applying for ethics approval	Thinking about ethical responsibilities	Chapter 6
	Preparing and submitting an application for ethics approval	Chapter 6
Project start (beginning of data collection)	Organising resources and people	Chapters 8, 10
	Managing project tasks, timetables and budgets	Chapter 8
	Working with colleagues and/or supervisors	Chapter 10
Data analysis	Arranging software needed for data analyses	Chapter 9
	Organising data entry and data cleaning	Chapter 9
	Conducting data analysis	
Communicating project findings	Identifying strategies for communicating findings	Chapter 11
	Planning and writing an end-of-project report	Chapters 12, 13
	Preparing manuscripts for journal publication	Chapters 12, 13
	Preparing a conference presentation	Chapter 9
Assessing options for further research	Exploring options for a career in research and possible sources of funding	Chapter 14 Chapter 5

If you are a largely a newcomer to research and have never designed or undertaken a research project before, it is probably wise to start the book at the beginning and work through each of the chapters systematically. This should provide a fairly good general introduction to the main aspects of doing a research project. However, each of the chapters in the book can also be read as separate, stand-alone pieces. This might be especially handy for people already in the midst of doing a research project who are looking for specific

tips on how to do certain things, such as how to structure a research proposal or lay out a technical report.

Overview of chapters

This section provides more detail on the content of each the chapters in the book.

The next two chapters (Chapters 2 and 3) provide some guidance on how to identify and develop new ideas for research. Chapter 2 provides a framework for thinking about how to design a new research project, highlighting some of the key issues to consider. This includes looking at some of the different kinds of research questions, data collection procedures and data analysis techniques commonly used in social and health research. The chapter also introduces some basic research concepts and terms that will be used throughout the book.

Chapter 3 expands on some of the points touched on in Chapter 2, looking in particular at how to logically and succinctly define and write down a research project's aims and objectives. In our experience, newcomers to research often do not pay sufficient attention to ensuring their research aims and objectives are well thought out and clearly expressed. This chapter offers suggestions on how to effectively conceptualise and frame statements describing a project's research aims, objectives, questions and/or hypotheses.

The next four chapters, Chapters 4 to 7, focus on key tasks often vital to getting a new research project up and running. These include preparing a project proposal, submitting a funding application, preparing for an ethics review, and developing and writing a literature review.

A research proposal indicates the aims of a research project, why the project is important and how the project will be organised. Writing a research proposal is an opportunity for researchers to carefully plan a research project before it starts. Draft or completed research proposals can be given to other people for feedback or to raise interest in a project amongst colleagues, supervisors or potential project sponsors. Chapter 4 provides advice on how to organise and write a general research proposal. This type of general proposal could be written as part of planning for a PhD or Masters thesis, or for a similar research-based student project (including those submitted for ethical review). An example of a research proposal is shown in Appendix 1.

Some research projects will only be viable if adequate financial support is obtained from funding organisations. Chapter 5 provides advice on how to identify possible research project funding sources and strategies. It indicates the type of organisations that fund health and social research, how to select suitable funding sources and how to prepare and submit written applications for project funding. Strategies for getting funding for researcher-initiated projects are covered, as well as strategies for identifying and bidding for client-initiated or commercial research project contracts.

All research should be conducted ethically and with sensitivity to the needs of research participants. Chapter 6 sets out the key ethical principles and standards that health and social researchers should know about. It describes examples of the types of ethical requirements stipulated by organisations overseeing the conduct of research. The chapter also provides advice on how to prepare research proposals for scrutiny by ethics committees.

Preparing a literature review is often one of the first things a researcher will do in the early stages of a project. Literature reviews can be useful for detailing the findings of previous

studies, identifying gaps in current knowledge and deciding which research methods are the best to use in new projects. Chapter 7 provides advice on how to research and write a literature review. It indicates how to find and critically assess relevant literature. It also outlines a model format for structuring the information presented in a literature review.

The next three chapters, Chapters 8, 9 and 10, are concerned with aspects of the day-to-day running of research projects. Chapter 8 outlines key skills and strategies for managing the ongoing work of a research project. This includes planning the timing and sequencing of tasks, monitoring the use of project resources, and managing the work of project team members. We highlight problems that can arise in these areas, as well as possible ways to prevent or resolve them.

Nowadays almost all researchers use personal computers for writing project-related documents, and storing and analysing project data. Chapter 9 describes the range of computer software programs likely to be required during a research project and the different functions they perform. It also provides tips on how and when to use these programs.

Chapter 10 focuses on the people-side of research. It offers suggestions on how researchers can work more effectively in team-based research situations or, in the case of student researchers, with the people supervising their thesis or dissertation. When two or more people are working closely together on a project, there is always the potential for relationships to get a bit frayed. The tips provided here should hopefully help to reduce the chances of this happening.

Chapters 11, 12 and 13 are concerned with writing and communicating research information. Chapter 11 looks at the different methods of disseminating research findings, from progress reports and conference presentations through to full-scale peer-reviewed journal articles. It indicates which communication methods are likely to be the most suitable for specific audiences and how to maximise their effectiveness. It also emphasises the importance of developing a well-thought-out strategy or plan for communicating a project's research findings.

Chapter 12 offers general tips on how to handle the potentially challenging process of writing research-related documents such as proposals and project reports. It describes important elements of effective research-related writing and suggests a range of strategies that could be used to help make the task of writing research-related documents less fretful and more enjoyable.

Chapter 13 provides specific guidelines and advice on how to organise, write and present three common types of research report used in social and health research:

- technical reports
- manuscripts for journal articles
- theses and dissertations.

Technical reports describe a research project and its findings in detail. Usually they are intended for readers interested in carefully scrutinising all aspects of a research project's design and execution, as well as its findings. Manuscripts for journal articles are usually submitted for publication in an academic or scientific journal. Normally they are shorter than technical reports and are generally read by a larger and more diverse audience. Theses or dissertations are typically written by students as part of qualifying for higher, postgraduate degrees. Usually they include a comprehensive review of previous studies and other literature, as well as reporting in detail on the student's own original research project.

The final chapter, Chapter 14, is concerned with career opportunities for working as a researcher either in a university, another kind of specialised research environment (e.g. a government or private sector research agency), or as a self-employed independent or freelance researcher. Some guiding principles and advice are outlined for those who may be thinking about pursuing a career as a researcher in these different settings.

Source material and literature

While the book aims to be broadly relevant to all research in social science and health, examples given in the text are mainly drawn from research on human services. In our experience, many researchers in social science and health are working on topics related to human services. Human services are services that provide assistance or support for individuals, groups or communities with particular needs. These range from large-scale services provided by government agencies (e.g., education, health, social welfare, police and justice) through to medium-scale services often provided by relatively large non-governmental organisations (e.g., services to reduce alcohol and drug abuse); to small-scale services provided by local organisations such as counselling services.

Given that readers are likely to come from a range of countries, we have tried to be eclectic in the choice of literature cited in the text. Many sources come from North America – probably the largest producer of social science and health research literature – but we also include material from the United Kingdom and Europe, and from our own part of the world, Australia and New Zealand.

A small number of illustrative case studies are also included in some chapters to highlight particular dimensions of being a researcher or doing research. Most of these cases studies are fictional in that they do not refer to real people or events, although they have been inspired by our own experience of being researchers and our dealings with students and colleagues over the years. The case studies are mainly intended to provide food for thought and encourage readers to think a little bit more deeply about certain topics or issues.

To assist readers using the book for the active learning of research skills, we have included a number of exercises at the end of each chapter. These can be used for self-assessment, or simply as a way to try out some of the ideas covered in the chapter. Each chapter also includes a final section listing references and further reading relating to the chapter topic. In some cases we have added Internet webpage addresses where these may be helpful.

Readers who wish to comment on any aspect of the book, including making suggestions for revisions or additional topics to include in the book, are welcome to contact the authors via their email address.