

# Chapter 1

## Introduction

Doing research, whether it's gathering information on an archaeological dig, examining the behavior of bacteria through a microscope or exploring the role of song in indigenous cultures, is exciting and rewarding. Making a contribution to knowledge and satisfying our curious natures provide the impetus for many a research project. However, no matter what the field of inquiry, ask any experienced researcher what doing research day to day is really like, and they are likely to tell you that it is much less about flashes of insight and fine theoretical abstractions than it is about methodical, organized activity. Behind every piece of efficient and cost-effective research is a sound and efficient organizational system.

It is this behind-the-scenes aspect of research that is the subject matter of this book. No matter what stage of the research process you are in, whether you are just thinking about doing a postgraduate research degree or are well into your research career, this book will assist you to manage your research more efficiently and overall to become a more effective researcher. Through offering many practical tips and suggestions we aim to help you develop effective organizational systems that use not only common sense strategies that have stood the test of time, but also to introduce you to readily available computer technologies that have revolutionized the way that research can now be done. By developing skills and strategies that allow you to be more efficient in your day-to-day organizational practices, you will save time, increase the effectiveness of your research practice, improve the quality of your research output and, most important of all, keep you sane throughout the process.

### **How do you become both an efficient and an effective researcher?**

In this book we emphasize the value of research being done both efficiently and effectively. Being efficient means making the most of your available resources, particularly time, while being effective involves achieving your research goals and producing quality outcomes. We all know researchers

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who might well be very organized and efficient but whose research outcomes fall below their potential. We can also all think of researchers who have produced wonderful, ground-breaking research, but it has taken double the time it could have due to their inefficient work practices.

To become *both* an efficient and effective manager of your daily research activities, you need good strategies, in particular:

- **time, project and process management skills and strategies;**
- **systems for organizing your hardcopy and electronic resources** and your physical workspace;
- **information literacy skills**, such as efficient and effective library database and Web searching, as well as strategies for continual monitoring and management of the huge quantity of information you are likely to access;
- **professional networking skills**, including the use of a range of communication technologies;
- **skills in collecting, managing and analyzing (often) large amounts of data**, whether quantitative or qualitative, and the ability to make a decision about what data analysis software to use;
- **efficient writing and word processing skills**, including those that support the creation and management of large documents such as theses and reports;
- **skills in presentation and publishing** of research and research in progress, including public speaking, presenting to the media and planning a publication strategy.

### Why become an efficient and effective researcher?

Our response would be “Can you afford not to?” Developing these skills will allow you to:

- **save time** by creating systems that stop you from spending many hours in unproductive or tedious activity;
- **maintain your sanity** by, for example, being able to find things quickly when you need them or effectively managing information overload;
- **maintain a balance** between your research, other work commitments and personal life;
- **pursue a career in research**, by building skills essential in an environment characterized by continual tightening of research budgets;
- **develop effective work practices** beyond your period of research training, benefiting both your professional practice and personal life;
- **work smarter not harder**. Academic and industry environments are constrained by the need to meet deadlines and be cost efficient. The days of

extended research timeframes are (sadly for many) coming to an end as governments and industry are increasingly reluctant to fund research that takes too long to produce an outcome.

## Who should use this book?

**If you are a research student** this book is an essential guide. Whether you are at honors, masters or doctoral level, and whatever your discipline (physical, biological, social sciences or humanities), you will find material relevant to your research process. This is certainly not a research design or methods text. In fact, it provides something completely different. It is a very practical resource that will enhance *all* aspects of your research activity. The book is also not a substitute for the guidance your supervisor can offer, but can be a valuable supplement to supervision as well as input from your peers. You might delve into sections of the book that are most applicable to your research. Alternatively, you may prefer to skim through several chapters to gain a general overview of the skills and strategies suggested, and then return to those most relevant as you travel along your research journey. This is certainly not a book that you are likely to read from cover to cover, nor one that you would engage with once and never pick up again.

**If you are an early career researcher** there are likely to be aspects of your research practice which you feel could be more efficient. While some systems, skills or strategies may be familiar to you, a skim through the various sections may reveal new ideas to enhance your practice.

**If you are a supervisor** (or advisor<sup>1</sup>) of postgraduate research students, you will see your role as a teacher and trainer of the next generation of researchers. Like most supervisors, the time available to work individually with your students will be limited and very valuable. You probably do not want to spend it introducing students to basic technical and organizational processes. Nor would you want to discover that they are simply not employing good strategies to manage their (and your) time, resources, and effort. For you, this book can provide a valuable point of referral for your research students.

**If you are an experienced researcher** you already know the benefits of good practice and the necessity of using efficient tools. You might find this book a useful resource if you want to hone your skills, improve your organizational strategies or be updated on innovative developments in research practice.

**If you are teaching a course in research methods**, you may find this a useful text as specialized methods texts usually don't cover organizational systems and strategies. The reflective questions and suggested activities provided at the end of each chapter offer a stimulus for your students to critically examine the impact of their personal work practices on the effectiveness of their research.

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We do recognize that different research cultures give rise to significant differences in expectations and experiences of staff and students involved in research. The level of collaboration, explicit discussion, training, resource availability and emphasis placed on technical and organizational aspects of research will vary between countries, between research institutions, between faculties (not just disciplines) and between individual supervisors and students. In some contexts, technology is embraced, emphasized and readily available, creating a culture of support for using specific software. In other contexts few people may use or even be aware of such products resulting in research students having minimal exposure or opportunity to make an informed decision about their relevance. In these contexts this book could be particularly valuable.

### What does the book do (and not do)?

The approach we take in this book is to:

- **provide very practical advice**, resources and tips;
- **build your *capability*** as a researcher, i.e. our philosophy is to focus on skills that allow you to adapt and build on knowledge, rather than just become competent in a particular area;
- **provide references** that encourage you to seek out further information;
- **outline the broad features of particular software** but then refer you to the software manufacturers' websites for the most up-to-date information, since such information changes rapidly as new versions are released;
- **assume that you are relatively familiar with general research processes** and management but may be less familiar with the use of technology to support these activities;
- **assume that you will be familiar with basic computer functions**, but like most people may not have considered the many ways that technology can enhance your research;
- **provide you with online, downloadable resources** via the book's website.

However, this book:

- **is NOT an introduction to research methods** or approaches to writing a proposal or a thesis<sup>2</sup>;
- **is NOT a "how to" manual** and does not deal in-depth with particular software or statistical techniques;
- **DOES NOT cover technologies or techniques specific to particular disciplines**, but instead focuses on those common and relevant to all researchers;

- **DOES NOT recommend any specific software products**, providing instead short summaries and references to a wide range of programs.

### ***How is this book organized?***

The book is organized around broad aspects of researchers' everyday practice, whatever the discipline. While to some extent a research sequence is implied in the arrangement of chapters, you can read them in any order.

- **Chapter 1: Introduction** emphasizes the importance of being efficient in your everyday research practices. Without understanding the value of good technical and organizational systems, skills and strategies you are unlikely to be motivated to read on.
- **Chapter 2: Establishing Technical Fundamentals** defines and explains terms and concepts used throughout the book as well as outlining some basic skills, all within the framework of an exploratory learning philosophy.
- **Chapter 3: Managing Yourself, Your Ideas and Your Support Structures** suggests you take a critical look at your personal work practices and identify areas for improvement in aspects such as managing time, notes, ideas, your supervisor and your support systems.
- **Chapter 4: Organizing Your Work Environment** explores a range of suggestions for managing your physical and electronic research environments, particularly through using consistent file management strategies.
- **Chapter 5: Overseeing Progress of Your Project** addresses aspects of research such as establishing timelines and milestones, budgeting, applying for grants and managing other resources, including the use of project management software.
- **Chapter 6: Communicating and Networking Electronically** covers a range of synchronous and asynchronous communication technologies that can support your professional networking.
- **Chapter 7: Effective Literature Searching** covers a range of literature searching tools and emphasizes those strategies that are essential in making searches both effective and efficient.
- **Chapter 8: Strategic Web Searching** focuses on sophisticated and informed approaches to locating, managing and monitoring Web-based information.
- **Chapter 9: Managing and Organizing Your Literature** is the essential companion to Chapters 7 and 8 and considers the role of bibliographic software for filing, sorting and summarizing print and electronic literature.
- **Chapter 10: Designing Data Collection Systems** presents a range of issues, challenges and solutions encountered in collecting and managing both qualitative and quantitative research data in a range of multimedia formats.

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- **Chapter 11: Managing Data Analysis** addresses the fundamental principles of both qualitative and quantitative data analysis, focusing specifically on issues you need to consider in choosing appropriate software.
- **Chapter 12: Improving Your Writing Efficiency** explores a wide range of foundational and more advanced aspects of word processing to support both individual and collaborative writing process, including online and nonlinear forms of writing.
- **Chapter 13: Presenting and Publishing Your Research** considers tools and strategies that allow you to communicate your findings to others in a variety of ways, in particular public speaking, poster presentations, using presentation software and planning a publication strategy.

Because the book is not designed to be read sequentially, you will find extensive cross referencing between chapters and chapter sections.

### ***Distinctive features used in this book***

Throughout the book we use a number of formatting devices to differentiate specific types of information and to guide you to the type of information you will find most useful.

**Practical tips** that we have drawn from our own experiences and from discussion with supervisors and other experienced researchers are highlighted using a box as follows:

	<b>Tips on...(for example)</b>
	Managing risk

**Feature examples of researchers and their practice, software or Web resources** that are illustrative of the book's practical approach to research are identified as follows:

	<b>Feature Website: (for example) StatCrunch</b>
	<a href="http://www.statcrunch.com">http://www.statcrunch.com</a>

**Forms and templates** that could be useful for you to use as they are, or to modify to suit your own needs, are found on the website associated with this book (see below).



See the **Organising and Managing Research website**

<http://xxxxx>.

“**Want to know more**” boxes provide, where appropriate, a list of print or Web-based resources for you to explore in more detail.



**Want to know more about....(for example)**

Simulation software?

**Software tables**, featuring a selection of relevant programs, appear at the end of relevant chapters. We certainly don't make any claims that these lists are comprehensive, or even that the specific examples that we discuss are necessarily the ones you might use. Rather, they provide a basis upon which you can begin your investigation of such research tools.

Information provided includes:

- the **name** of the software;
- the **manufacturer** or developer of the software;
- the **platform** for which it was developed at the time of writing (i.e. Windows, Macintosh, Linux, Unix);
- a **website address** where you can find further information. If the link does not work, try a search using the name of the software;
- **licensing** details, principally, whether it is freeware, shareware or commercial ware (as explained in Chapter 2);
- **demo** on website, i.e. whether there was a demonstration version of the software available at the time of writing;
- **points of interest**. These are aspects that caught our attention. Note that mentioning a particular feature does not mean that other programs do not also have that feature.

Software availability and features (including licensing) change so rapidly that you are the best person to assess what is most suitable for your particular research. Consider these tables as a starting point and conduct your own searches for more recent or relevant applications (see Chapter 2 for further advice).

Each chapter concludes with an “**Over to you**” box, with some questions and tasks designed to challenge you to consider the relevance of the content to your own research field and to apply your learning to your project.

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Over to you...

### ***Using the book's website***

This text is accompanied by a website which provides additional support if you want to follow up the issues and strategies outlined in the book. The website serves a number of functions:

- To provide **live links to the many web-based resources** that are mentioned in the book, allowing you to “point and click” to visit sites, rather than having to retype URLs. It also allows us to update links which might move or change over time.
- To provide **useful templates** referred to throughout the book, enabling you to download these directly rather than re-creating them yourself.
- To **supplement the resources mentioned in the book** with others that either have been identified since publication, or that we simply weren't able to incorporate here due to space limitations.
- To **give you the opportunity to provide feedback to us** and make further suggestions, which we can in turn share with others via the site.
- To **provide an opportunity for discussion** with other readers of the text and support the establishment of a community of researchers interested in issues related to organizing and managing research.

The Organising and Managing Your Research Website will grow and develop in response to the interests and needs of users. We hope that you will join us in contributing to this enhancement to the book.

Now that you are ready to explore more of what this book has to offer, start by reflecting on these questions:



Over to you...

1. In what ways do you think this book could be useful for you and your research?
2. What stage of research are you at now? What sections of the book seem immediately relevant?
3. Take a moment to visit the book's website and consider how you might make use of and/or contribute to this environment.



## Notes

- 1 Throughout this book we use the term “supervisor” to denote the advisory role taken by senior academics with postgraduate research students.
- 2 There is a wide range of such texts available to the beginner researcher, such as Rudestam and Newton 2001; Bryant 2004; O’Leary 2004; Oliver 2004; and Roberts 2004.

