Chapter 22

Research writing and dissemination

Mary Anne Kennan and Kim M. Thompson
Charles Sturt University, Australia

This chapter begins by reinforcing the integral role of writing and dissemination in the research process, while acknowledging that writing and dissemination practices vary from discipline to discipline, field to field. Despite these differences, there are characteristics and processes that most research writing and dissemination have in common, and these are discussed here. From the general structure of a research report to the importance of writing throughout the research process, key aspects of research writing are addressed after which dissemination and publishing are defined and major and emerging forms of publication are described. The chapter concludes with a discussion of peer review and the ethics of authorship.

Research Methods: Information, Systems, and Contexts. DOI: http://dx.doi.org/10.1016/B978-0-08-102220-7.00022-4

Introduction

An archaeologist who uncovers the remains of an ancient civilization, extracts the mummies, skeletons, artworks and other objects, puts them in a warehouse, studies them, and then locks the door and never shares insights or analyses with peers, the profession, or the public, could be said to be engaging in grave robbing, not research. Research is incomplete until it is communicated, used, disseminated and further developed within a community (Borgman, 2007). Research is used to inform policy, drive practice, expand understandings of related phenomena, and advance theory in order to further research. Decision-makers should be able to access and use your research to make decisions, improve services, understand the community and user needs, and to know of advances in the field.

Research is published and disseminated in many formats, for example: journal articles, conference papers, book chapters, research monographs, reports, and grey literature. Writing up research, whether for examination or for dissemination through publication, is different from essay or general report writing and the writing style, length, structure and format depends on the outlet. Conference papers are often shorter than full journal articles; dissertations or theses usually are much more detailed than monographs; a research website may include only general information about the project or findings. Each type of publication is written for a different audience. Knowing your audience and the expectations for research dissemination in your field is imperative because every field is different.

Some research writing is disseminated to a very specific audience. This applies to research proposals, discussed below; other research reports and papers may also be written for a very limited audience (such as proprietary or corporate studies). Although proposals and proprietary reports will typically have explicit structure and formatting instructions to which the writer must adhere, most research writing is unguided and so understanding general research writing and dissemination principles and practices will help beginning researchers confidently navigate the research dissemination process. This chapter provides an introduction to the research writing process, research dissemination and publication, and related ethical issues.

Where to start

It is important to become familiar with the key influential works in your field. Sometimes books are the resources that contain the seminal definitions, theories, and broad-brush overviews you will need to know, but journal articles may be where you can find the latest advances related to your area of study. When considering whether to publish your study findings as a book or as a series of journal articles, think about which venue would allow you to have a greater

impact on the field. In academe, it is thought to be important for researchers to try to disseminate findings to as wide a population as possible. However, some journals and book publishers are considered to have more credibility and/or esteem than others and so the ranking or reviewing of books, journals, or articles is not uncommon. Journals can be ranked based on number of subscriptions: a journal that has 5000 subscribers is likely to have a greater impact than the journal that has 50 subscribers. Citation counts can also be used to assess impact: if a book or article is cited in 150 other publications, the work is noted as having a higher impact than one that is seldom cited or not cited at all. (See Chapter 10: *Bibliometric research*, for a discussion of these issues.) Another way to assess the value of a manuscript is through peer assessment, where scholars in the field evaluate the overall quality of the work. When deciding where to publish your research, start by reading journals and books that you have found useful in the literature review of your research project, and discuss potential publication outlets with supervisors, colleagues and mentors.

When you decide to submit an article to a journal, read the guidelines for authors and the journal's aims and scope, read through the journal's tables of contents, and read some articles published over the last couple of years before deciding upon it as a publication outlet for your research. Look for journal trends: What has occupied the pages of the journal over the past few years? Is there a call for papers in which your research fits? Has the journal published other works that relate to the main themes or topics you research? Are there editorial pieces in past issues indicating an interest in your research topics? Finally, check whether the journal's style is a fit with your own style and that of your research. Are the articles written in plain language, highly theoretical, or somewhere in between? Is there a balance of theoretical work, literature review, and empirical research including case studies, or does the journal focus on one type of article, or one narrow domain? Does the journal have a particular methodological slant?

It is also important to have an audience in mind when selecting a venue for publication. Some book publishers focus only on textbooks or only publish works related to particular topics or themes. With regard to journals, some have a deeply scholarly approach and require rigorous research methods, with deep description and often challenging applications of theory. These journals target experienced researchers and are generally best avoided by the novice researcher and those writing about practice-based research.

Book and journal publishers have different lengths of time from submission to publication. These time frames can vary from a couple of months to a couple of years. In summary, given that there are many issues to consider that can minimise the prospect of rejection, it is important to spend a bit of time on deciding where and how you will disseminate your results well before you reach the final writing up stages.

The research writing process

Research writing, as all writing, needs to be readable. Key terms need to be defined, theories and contexts clearly explained, the scope of the project delineated, and the significance and purpose of the study stated.

Research often commences with writing a proposal directed to faculty committees for dissertations/theses or to funding bodies for research grants. Research proposals are a specific form of writing and are not typically published or widely distributed. A research proposal is essentially a plan written to a specific audience of readers, so it is important to know how much your readers will know about your topic and how much to include and exclude. Proposals are intended to persuade the reader to support, fund, or approve a research idea or project. All research proposals must describe the topic to be researched, the specific research questions or problems, and why the research needs to be done. Proposals also explain exactly how the research will be conducted, including the methodology (which includes paradigm, method/s and technique/s), and outline in detail the resources that will be required and the estimated time each aspect of the research will take. Universities, the faculties within them, as well as grant funding bodies will each have their own guidelines and requirements for layout and content of proposals, which must be closely followed to increase the chances for the acceptance of proposals. The audience for the proposal therefore determines the approach to be taken.

In relation to the reporting of research, there are some normative structures and guidelines that can help new researchers navigate the research writing process, as discussed below.

Structure

Research outputs tend to have a standard structure. The most basic outline for research reporting is:

- introduction and background;
- literature review;
- methodology (which includes paradigm/s, research method/s and technique/s);
- analysis (which, in some fields, may be considered as part of 'methodology');
- findings and discussion; and
- conclusion.

The introduction will state the research problem and the purpose of the research, the scope and significance of the study, and provide a thesis statement or central

argument, including assumptions that guide the rest of the report. The literature review is a focussed summary of relevant publications and research that informed and guided the study. The methodology encompasses a critical analysis of the paradigm, the strategy for linking research problems and questions with a particular approach, and the particular research methods and techniques used to answer the research questions or understand the phenomena. Not every research report discusses its full theoretical framework. Some journals expect a detailed methodology, and others prefer just a methods section. The analysis section includes how the data were analysed, clearly specifying what statistics were used, if any, and, how theories or frameworks helped in understanding the data. Findings are what were discovered through the research process, and the conclusion is a wrap-up of findings and discussion, a restatement of the thesis, and sometimes a statement of where you think the next step in the research process should go.

Not all research writing must conform to the above writing structure. More creative representations can be found in such resources as Marvasti's (2008) chapter 'Writing and presenting social research' and Creswell's (2014) *Research Design*. New researchers will also see a variety of ways to formally present research as they read the literature of their field and work on their literature review.

Reviewing the literature

As the famed scientist-researcher Sir Isaac Newton (Feb 5, 1676) wrote to his colleague Robert Hooke, "If I have seen further it is only by standing on the shoulders of giants." In other words, by reviewing what others have contributed to the field already, the researcher can bring the research to a new and higher level. A literature review will be developed from books, journal articles, dissertations/theses, websites and, as available, reports, white papers and any other relevant material. It is important to remember that not everything about a given topic is retrievable using a *Google* or even a *Google Scholar* search. Academic library databases and catalogues should be used, and academic librarians, who are trained as experts with particular databases, can be called upon to ensure that the literature search is exhaustive. While it may not be possible to find or read everything on a particular topic, it is important to make your searching of the literature as comprehensive as possible and to continue to monitor the literature on the topic throughout your research project (Boell & Cecez-Kecmanovic, 2010; McKibbon, 2006).

A review of the literature not only provides you with knowledge of what research has previously been done so that you do not unintentionally repeat work that has already been completed, but it also sets up a basis for the importance of your study. You will note deficiencies in the current body of

literature. No research project answers all possible questions about a particular topic. Often these limitations will be identified by the author or authors in the 'suggestions for future research' or 'limitations of the study' sections. Your research should clearly state how your study fills the gaps left by others. When writing up your research, you will likely read many more works than you actually cite in your literature review. This is normal. Your literature review is not a reading log, but rather it should succinctly review that which is relevant to the actual piece that you are writing. Detailed instructions for writing literature reviews can be found in texts such as Hart (2014) and Bates (1992). Chapter 2: *The fundamentals of research planning* and Chapter 5: *The methodological landscape* (in this book) also discuss the preparation and writing of literature reviews.

Writing as you research

Rather than waiting until the research project is complete, writing about your research as you go will help you make certain that you are fair and accurate in your write-up, that you include all the relevant steps you have taken in your study, and ensure that your analysis is completely represented and has a logical flow. Writing as you go serves other purposes too. Latour (2005, p. 127) suggested that writing textual accounts are the social scientist's laboratory, that the writing up of research not only prepares the research for others to read, but also is a part of the research process. You should expect to revise sections of the report as your analyses unfold, rewriting your introduction or literature review to include more background or deleting some as the focus of your research evolves and changes. You may need to add more detail to your methodology section to support your findings and analyses as the writing progresses. This is part of the research writing process and should be expected; give yourself enough time to draft and redraft as required. Writing well can take weeks or months of time and requires many revisions and a piece of written work may have many iterations before it is 'finished'.

Study significance

Research writing needs to clearly delineate what is learned from the research and answer the 'so what?' question. So what if 90 out of 100 users can find the needed document from the database? So what if a reference interviewer asks leading or biased questions? So what if the software crashes 0.01 percent of the time? Be explicit in your discussion of how these findings can and should be interpreted and why they are important. What effect might the research have on users? While it is important to be aware that not all research is generalisable *per se*, how might your research affect general practices? Be conscious and clear about who benefits from the research. Do the findings imply changes to services and practice? Do

they contribute to better theoretical understanding? Can policy be affected or practice improved by what you have discovered from your research? What further research questions arise from these findings?

Guides for authors

At some point during the research process you will need to decide where you will send your paper for review and publication. The review process will be discussed further below, but at this point it is important to note that each journal or conference and each book publisher has a different scope, different audience, and could have different submission and review processes. Guides for authors are usually found on the front or back inside covers of journals and on conference and publisher websites. You will want to be familiar with the publisher's guidelines for author rights and copyright, structure and citation guidelines, how tables and graphs should be presented, and other ethical and formatting issues.

Formatting, style, and citation

Editors of books and journals usually have standardised formatting and style guidelines. Common guidelines include the American Psychological Association (APA), Chicago, Turabian, Harvard and Modern Language Association (MLA). Handbooks for each of these well-known styles are available in libraries and some very basic formatting instructions can be found online, for example via university learning centres. Publishers and editors will specify the citation style in the guide for authors.

Citation is the way we demonstrate that we are familiar with relevant literature and acknowledge the intellectual parentage of, and relationships between, our research and the research of others. It also provides a method of supporting our arguments with the work of others who have done research in a similar area. Tracking the use of seminal works in the field is another purpose. Discovering whom key authors have cited and who has cited key authors will lead you to other, related literature.

You will need to be sure you do not plagiarise others or yourself in your different outputs. Cutting and pasting large chunks of text (even if it is from your own work) to use in multiple publications is not generally acceptable. When you refer to or use your own and other published works, you must provide a formal citation (AIS, 2015; NHMRC, 2007).

Revising, editing and proofing

> ***Interviewer:*** *How much rewriting do you do?*
>
> ***Hemingway:*** *It depends. I rewrote the ending of* Farewell to Arms, *the last page of it, thirty-nine times before I was satisfied.*

> ***Interviewer:*** *Was there some technical problem there? What was it that had stumped you?*
>
> ***Hemingway:*** *Getting the words right.* (Plimpton, 1958)

It is not just writers of fiction who have to revise their work. All authors need to examine their work over and over again until it accurately communicates the message the text is intended to impart to the reader. Revision may involve changing the order of the content, including more or less information, or otherwise making the writing better able to convey the intended message and more understandable to the intended reader.

Once the revision is completed, the next task for the author is editing, that is, preparing the written work for publication. Editing involves the correction of spelling, punctuation, and grammar. Through self-editing, you may also find additional revisions are required. At this stage you will want to check your work against the publishers' guide for authors to ensure your work meets all the requirements in terms of style, format, length, and citations. This is not a quick process and so sufficient time should be allowed for these formatting and other self-editorial revisions.

The final step in this process is proofreading. This is where you give the work a final close read to correct any typographical errors or mistakes. It is important to do this before you submit your work for review or examination. Journal editors and reviewers do their work on a voluntary basis, so offer them the courtesy of making it less of an onerous task. Furthermore, a well written, revised, and edited work is easier to read and its message is clearer. Authors may go through many iterations of revision, editing, and proofing before they are satisfied with their work. It is also valuable at these stages to ask peers and mentors to provide feedback, to offer what is in essence a 'friendly review'.

Dissemination and publishing

To disseminate in the research context means to communicate, share or spread information or knowledge widely. This is referred to as scholarly communication. Scholarly communication can occur through formal and informal channels. Graham (2000) characterised scholarly communication as flowing through three channels: 1) informal networks, such as through conversations and seminars; 2) initial public dissemination, for example, via conferences, preprints or working papers; and 3) formal publishing through journals, books, and other similar outlets. Publishing has many meanings, the simplest is to make public. Usually, however, the term publishing refers to the process of the production and dissemination of literature or information. Sometimes it can also refer more specifically to the activity of preparing and issuing books, journals, and other written material for sale.

Types of formats

As mentioned earlier, research is disseminated in many formats. The different formats and dissemination methods serve different purposes and address different audiences. The most common ways to disseminate research in the information field include:

1. research reports
2. dissertations or theses
3. monographs or books
4. journal articles
5. conference presentations and papers.

Each of these types of dissemination routes has a different purpose and different audience and so needs to be approached in different ways. A single research study may result in multiple publications. You may end up with a conference presentation based on your literature review, one article focussing on methodology, and one or more additional articles arguing how your findings might influence policy, practice, future research, or theory. Journals, dissertations/ theses, and other publications usually have a word count specified. A dissertation may run to 100,000 words, but a full journal article reporting findings from the dissertation could have a limit of 6,000 to 8,000 words. Rather than try to encapsulate your entire dissertation in one journal article, consider which audiences might be interested in different aspects of your findings or theories and plan to disseminate those particular pieces in appropriate outlets.

Research reports

Organisations providing grants, fellowships, scholarships, and other financial or data support will expect to receive reports of the research and results. Research partners external to your organisation may also request research reports as the study progresses. Reports can be written periodically throughout the research process. For example, quarterly reports may be written to keep associates informed about how the research is progressing and to let them know of interim findings and analyses; annual reports may be required for multi-year studies to demonstrate to funders that the research is on target and progressing at a reasonable rate and that the monies are being used wisely. These research reports are usually written for internal readers, those who have interest in how the money or data they have contributed is being used. The audience may consist of experts in the field, other researchers who have little or no knowledge of the field of your study or the methods you are using, or the reader could have no background in research whatsoever. It is important to

know your potential reader and write at a level that will satisfy that group of individuals.

Dissertations/theses

A research dissertation or thesis will be expected to cover every aspect of the research process. Every university will have their own guidelines about how a dissertation or thesis should be structured and presented; when writing it is important to consult these guidelines in addition to consulting the members of your supervisory team. It is also very useful to read a selection of theses or dissertations in your field from your own institution and also from other universities. Dissertations and theses are available in academic libraries and online databases. Some universities ensure that electronic versions of new theses and dissertations are on open access.

The audience for a dissertation or thesis is primarily a committee or selection of expert examiners. Some of these readers may be experts in fields related to yours but not particularly familiar with exactly the same literature or topics you are reviewing and addressing with your research. Because of this, even dissertations and theses should be written in a readable fashion, defining all key terms and concepts and clearly explaining methods used, statistics presented, and all figures, charts, and graphs. The copyright of a dissertation or thesis is usually retained by the graduating doctoral or master's student.

Monographs

Research monographs can be reformatted editions of dissertations, theses, or other significant research reports. Monographs are published by university presses and commercial scholarly publishers. A point of difference is that authors may get a royalty payment for monographs, whereas for most other research dissemination, such as journal articles and conference papers, authors do not receive direct payment. As a commercial work, a monograph will typically be edited to be readable to a more general or specific audience, depending on to whom the publisher will be marketing the book. The readership of a research monograph will likely be individuals with varying levels of expertise in the field, ranging from students to academics, practitioners to lay people. When writing, you can assume the reader will have some interest in the topic, but he or she may not have much background in the field. Research monographs are usually peer-reviewed.

Edited books and chapters

Research can also be published as chapters in edited books, a compilation of articles or other material on the same subject but by different authors collected together in one book by an editor or editors. Edited books may be compilations of

seminal articles previously published or can consist of previously unpublished chapters about new research findings. Editors may invite researchers to write one or more chapters about specific research findings or methodologies based on the invitee's expertise. Editors may also send out a general 'call for chapter proposals', on a topic around which a book is to be focussed. In this case, any researcher can submit a brief proposal. These proposals are then reviewed by the editor/s or peer-reviewed and, if accepted, the chapter is written by the researcher and then re-reviewed before publication.

Journal articles

Journals are aimed at a particular audience and may have specific topic or subject coverage, target explicit types of methodologies, and may even have a distinct tone. Each journal has different submission and acceptance rates, reviewing procedures, and editorial boards. Prestige is related to these factors. The articles in journals categorised as scholarly are peer-reviewed and relate to a particular academic discipline, field, or sub-field. Professional journals or magazines take articles that may not be peer-reviewed and may not always be research-based. Researchers can be very strategic about selecting journals in which to publish their work based on carefully considered criteria. Established authors understand that there are complex relationships between journals in their field and differentiations in rankings and reputations. Beginning researchers are advised to research these relationships in their field. In many fields there are articles discussing and ranking different journals, and often research evaluation exercises such as the Research Excellence Framework (REF) in the United Kingdom and the Excellence in Research for Australia (ERA) list or rank journals in different fields (c.f., ABDC, 2016; Nisonger & Davis, 2005; Haddow, 2008; Pember & Cowan, 2009).

Conference presentations and papers

Many researchers present their findings at regional, national, and international conferences. There are many different types of conferences – some professional, some scholarly, some combining research and practice. For conferences with a scholarly bent, full research papers are submitted and peer-reviewed, whereas at other conferences a paper is accepted after receipt of a proposal or abstract, and is more of a presentation than a paper. Most professional associations hold conferences which, among other things, disseminate research associated with that profession. Large international conferences are worthwhile dissemination venues. For library and information science, for example, the International Federation of Library Associations and Institutions (IFLA) is aimed at practising librarians, the Association for Information Science and Technology (ASIS&T) annual meetings are where practitioners and scholars come together, and then there are more academic conferences like Conceptions of Library & Information Science (COLIS).

Key information systems conferences are those affiliated with the Association of Information Systems (AIS) and can be international (The International Conference on Information Systems), regional (Pacific Asia Conference on Information Systems), or focussed on particular sub-fields. The archives field disseminates research at the Research Forum associated with the Annual Meeting of the Society of American Archivists, at the annual conferences of the various national societies of archivists, and at the International Conference on the History of Records and Archives (I-CHORA) every two years and the International Council on Archives Congress every four years.

In general, a good way to find out about appropriate conferences at which to disseminate your research is to talk to other people researching in your area of interest and to note which ones produce articles on your topic of interest. Note that, as with journals, conferences can vary in audience, approach, and quality. Even if your conference paper has a formal written component (which would generally be similar to a journal article), you need to think of the oral presentation component as being related but separate, concerned with keeping the audience's attention and fitting the time frame, as well as presenting the research.

Open access

Open access is a term that refers to using the internet and other technologies to deliver research publications freely to potential readers, not all of whom will have access to subscription-charging journals, books, or conference proceedings. There are two general types of open access publishing: gold and green. Gold open access or open access publishing is when authors deliberately select an online open access journal, conference or book publisher. There are many examples of open access journals listed in *The Directory of Open Access Journals* (DOAJ) supported by the Lund University Library. DOAJ (http://www.doaj.org) covers free, full text, quality-controlled scientific and scholarly journals.

Another route to open access is called green open access or self-archiving (Kennan & Wilson, 2006). Authors publish their work in traditional (subscription) access journals, but then also make a version of their work freely available through an open access repository. Repositories manage and disseminate digital works. Publications can be self-archived at either the pre- or post-peer review stage depending on the copyright agreement authors have with a publisher. You can check Sherpa RoMEO (http://www.sherpa.ac.uk/romeo/) for publisher policies on copyright and self-archiving. On doing so you will find a good proportion of publishers permit self-archiving. Alternatively when you sign the copyright or distribution agreement with a publisher you may negotiate for self-archiving rights. The focus of green open access is to provide access, not to provide all the

functions provided by a journal. For example, the journal will still coordinate peer review.

Many institutions have their own open access repositories, often called institutional repositories. If yours does not, then disciplinary repositories cater for specific fields, for example: *E-LIS: E-prints in Library and Information Science* (http://eprints.rclis.org/) run by an international group of volunteers and supported by various organisations, and the Social Science Research Network (http://www.ssrn.com) co-hosted by a number of universities and other organisations, which has an information systems network.

Emerging forms of dissemination

Other internet-based online developments, such as e-lists, blogs, wikis, RSS Feeds, chat technologies and other Web 2.0 tools, also enable wide dissemination. Works published using these informal research communication and dissemination platforms do not undergo traditional peer review or other institutionalised certification, and so there is debate about their value. However, as their use matures, new forms of more informal, dynamic peer review may emerge (Hey & Trefethen, 2008). These tools can do more than just disseminate or make available the full text of research papers. With these new tools, research data can be integrated with books and journal articles to create a world that allows researchers and readers to see the whole knowledge production cycle (Fink, Kushch, Williams, & Bourne, 2008; Hey, Tansley, & Tolle, 2009). For example, readers of publications can not only see and use the original data, but also redo the analysis or combine the data with other data for other purposes. Moving images and visualisations could report research in ways other than textual formats. New ways to disseminate or make research public are constantly emerging and being evaluated by the research community (Markauskaite, Kennan, Richardson, Aditomo, & Hellmers, 2012).

Peer review and ethical writing

In any field of research, peer review is an important part of the research process, as it is used to uphold standards and offer credibility. The idea is that peers familiar with the literature, methodology, and the area of study of your paper can read for quality assurance. When a paper is submitted to a journal or conference, the editor generally sends it to two or three expert reviewers or referees. Multiple reviewers may give similar or contrasting reviews. For example, one reviewer may note that the publication needs more exploration of the literature, while another reviewer may consider the research to be sufficiently rigorous and well written for publication. In this case, the editor often makes the final decision, and a good editor will guide authors with regard to which of divergent paths suggested may be the most appropriate.

Before any research article or paper is accepted by a journal or conference, it will need to go through a peer review process. There are different kinds of review, for example:

Editorial review is when the editor or editorial board read and review the work, deciding whether or not to accept the paper, sometimes suggesting changes before the work will be accepted.

Blind review is when the author does not know who the reviewers are, but the reviewer is allowed to know whose work is being reviewed. The idea is that this allows the reviewer to be candid with recommendations.

The standard reviewing process among high quality journals and conferences is to use the *double blind review*. The author does not know who will be reviewing his or her work and the reviewer does not know whose work is under review. In this, an anonymised version of your submission is sent to at least two outside reviewers whom the editors regard as having appropriate expertise in the area of your research. The reviewers then assess the submission, providing detailed feedback, and make a recommendation as to whether it should be accepted or not and what changes, if any, are needed before publication.

Revisions post-review

It is rare for any submission, even those from experienced authors, to be accepted without change. The majority of articles require *some* amendments before they are ready to be published. Most reviewers work very hard to provide constructive feedback and authors should try not to take the critique personally. When you receive your referees' reports, you should go through them in detail and use them to develop a plan for revising your manuscript. You do not necessarily have to follow all the reviewers' instructions. As intimated above, sometimes reviewers' advice may be contradictory, or sometimes there may be compelling reasons not to make a suggested change. After you have completed your revisions, you should respond to the editors saying which changes you have made and where, and which changes you have not made and why you have not made them. They will then let you know whether they find this acceptable, require you to revise further, or find the article not acceptable for the particular outlet.

Inevitably some submissions are rejected. Read the referees' and editor's reasons for rejection carefully – it may simply been an indicator that you have not chosen the appropriate journal for your work, and you may need to search elsewhere for the right audience. After considering the reasons for rejection, think about whether another journal or conference might be a suitable alternative and if so, revise the manuscript accordingly and resubmit.

A dissertation or thesis does not go through peer review in the same sense that journal articles do; however, it is examined by experts in the field. Examiners are given specific instructions that may vary slightly institution by institution, and the process of examination is related to that of peer review.

The ethics of authorship

As an author writing up research you take responsibility for the research and how it was conducted. Authorship also confers ownership of the written work. Therefore it is important to exhibit honesty and integrity in all your research communications. It is important that new researchers make themselves aware of the particular ethical requirements that surround the dissemination and publication of research. A brief discussion of some of the issues follows. A plethora of ethics statements and codes of conduct with substantial sections on dissemination, publication and authorship (c.f. NHMRC, 2007; ICMJE, 2016) reflect the importance of the issue.

Examples of practices generally considered to be unethical include:

- publishing the same data in different forms in different journals unless it is acknowledged, as in the case of a research program where research is ongoing and later work builds on earlier work, or where the data is published in different ways for different audiences;
- submitting the same paper simultaneously to more than one journal in the hope of having at least one journal accept it or with the intent of withdrawing it from the journal that responds last;
- submitting works without all authors giving their active consent to being authors and approving both the submitted and published versions; and
- not acknowledging people who, and organisations which, contribute in substantial ways to the work, without actually being authors.

Sometimes determining who should be listed as an author and in what order authors should be listed can be difficult, especially where there are power relationships between the authors or where the research is conducted by teams comprising members from difficult disciplines with different research cultures. The first author gets the most credit and so they should also do most of the work.

Conflicts can arise over authorship, so it is best if the order and role of each author is discussed openly and agreed upon early in a research project. As conflicts can arise, the *Australian Code for the Responsible Conduct of Research* (NHMRC, 2007) has a section on dissemination and authorship based on the

earlier Vancouver Convention (ICMJE, 2016). The most important sub-section is as follows:

> Attribution of authorship depends to some extent on the discipline, but in all cases, authorship must be based on substantial contributions in a combination of:
>
> - conception and design of the project,
> - analysis and interpretation of research data, and
> - drafting significant parts of the work or critically revising it so as to contribute to the interpretation.
>
> The right to authorship is not tied to position or profession and does not depend on whether the contribution was paid for or voluntary. It is not enough to have provided materials or routine technical support, or to have made the measurements on which the publication is based. Substantial intellectual involvement is required (NHMRC, 2007, section 5.1).

Conclusion

Writing up and disseminating research is a key component of the research process. This chapter has discussed the importance of dissemination, the research writing process, and the essential components of a research report. The practicalities of writing and dissemination were also addressed, including selecting the right publication outlet, the writing itself, reviewing, and the ethics of authorship. Writing may not be an easy task for beginners, and even seasoned researchers may find it difficult at times, but the importance of disseminating the insights, findings, methodologies, new and modified methods, theories, and analyses that result from our studies makes it a necessary part of the research process.

References

Association of Information Systems (AIS). (2015). AIS code of research conduct. *AIS Administrative Bulletin, 2014.0224.01*. Retrieved from https://c.ymcdn.com/sites/aisnet.org/resource/resmgr/Admin_Bulletin/AIS_Code_of_Research_Conduct.pdf.

Australian Business Deans Council (ABDC). (2016). *ABDC journal quality list*. Retrieved from http://www.abdc.edu.au/pages/abdc-journal-quality-list-2013.html.

Bates, M. J. (1992). Rigorous systematic bibliography. In H. D. White, M. J. Bates, & P. Wilson (Eds.), *For information specialists: Interpretations of reference and bibliographic work* (pp. 117–130). Norwood, NJ: Ablex Publishing.

Boell, S. K., & Cecez-Kecmanovic, D. (2010). Literature reviews and the hermeneutic circle. *Australian Academic & Research Libraries*, *41*(2), 129–144.

Borgman, C. L. (2007). *Scholarship in the digital age: Information, infrastructure, and the Internet*. Cambridge, MA: MIT Press.

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Los Angeles, CA: Sage.

Fink, J. L., Kushch, S., Williams, P. R., & Bourne, P. E. (2008). Biolit: Integrating biological literature with databases. *Nucleic Acids Research*, *36*(supplement 2), W385–W389. Retrieved from http://nar.oxfordjournals.org/content/36/suppl_2/W385.full.

Graham, T. W. (2000). Scholarly communication. *Serials: The Journal for the Serials Community*, *13*(1), 3–11.

Haddow, G. (2008). Quality Australian journals in the humanities and social sciences. *Australian Academic & Research Libraries*, *39*(2), 13.

Hart, C. (2014). *Doing a literature review: Releasing the social science research imagination*. London: Sage Publications.

Hey, A. J. G., Tansley, S., & Tolle, K. M. (2009). *The fourth paradigm: Data-intensive scientific discovery*. Redmond, WA: Microsoft Research.

Hey, T., & Trefethen, A. (2008). E-science, cyberinfrastructure, and scholarly communication. In G. M. Olson, A. Zimmerman, & N. Bos (Eds.), *Scientific Collaboration on the Internet* (pp. 15–31). Cambridge, MA: MIT Press.

International Committee of Medical Journal Editors (ICMJE). (2016). *Recommendations for the conduct, reporting, editing, and publication of scholarly work in medical journals*. Retrieved from http://www.icmje.org/icmje-recommendations.pdf.

Kennan, M. A., & Wilson, C. S. (2006). Institutional repositories: Review and an information systems perspective. *Library Management*, *27*(4/5), 236–248.

Latour, B. (2005). *Reassembling the social: An introduction to Actor-network-theory*. Oxford: Oxford University Press.

Markauskaite, L., Kennan, M. A., Richardson, J., Aditomo, A., & Hellmers, L. (2012). Investigating eResearch: Collaboration practices and future challenges. In A. Juan, T. Daradoumis, M. Roca, S. Grasman, & J. Faulin (Eds.), *Collaborative and distributed e-research: Innovations in technologies, strategies and applications* (pp. 1–33). Hershey, PA: IGI Books.

Marvasti, A. (2008). Writing and presenting social research. In P. Alasuutari, L. Bickman, & J. Brannen (Eds.), *The Sage handbook of social research methods* (pp. 602–616). Los Angeles: Sage.

McKibbon, K. A. (2006). Systematic reviews and librarians. *Library Trends*, *55*(1), 202–215.

National Health and Medical Research Council (NHMRC). (2007). *Australian code for the Responsible conduct of research*. Retrieved from http://www.nhmrc.gov.au/_files_nhmrc/file/publications/synopses/r39.pdf.

Nisonger, T. E., & Davis, C. H. (2005). The perception of library and information science journals by LIS education deans and ARL library directors: A replication of the Kohl-Davis study. *College & Research Libraries*, *66*(4), 341–377.

Pember, M., & Cowan, R. A. (2009). *Journal quality: An analysis of archives and manuscripts*. Paper presented at the Australian Society of Archivists Annual Conference, Perth, WA, 6–9 August 2008. Canberra, ACT: The Society. Retrieved from http://researchrepository.murdoch.edu.au/2885/1/journal_quality.pdf.

Plimpton, G. (1958, reprinted 2011). Ernest Hemingway, the art of fiction no. 21. *Paris Review, 18*. Retrieved from http://www.theparisreview.org/interviews/4825/the-art-of-fiction-no-21-ernest-hemingway.