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## **Writing it up: getting your LIS research out there**

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## **ABSTRACT**

This paper grew out of a presentation at the 'Research for LIS Practitioners Workshop' organised by the ALIA Research Committees and held at The State Library of New South Wales. The workshop was a satellite event of the Information Online Conference held in February 2011 at the State Library of New South Wales. The goal of the workshop was to encourage practitioner research and publication in the LIS community and the goal of this paper is, (and the presentation it grew from was), to assist beginning LIS practitioner researchers by providing introductory information and tips about how to write up research for dissemination and publication. Basic information is provided about the components of a research report, and the different approaches required for different audiences and types of publication. In addition some personal observations about the practicalities of writing are provided. This paper provides practitioner researchers with a starting point for writing up their research.

## **1 INTRODUCTION**

This paper is intended to assist new practitioner researchers in beginning to write for publication. It aims to offer some concrete advice on ways to get the message of your research across. Carrying out the research is only beginning of the process: to be valuable, the findings, conclusions and lessons learned through research need to be disseminated both to internal stakeholders and a wider audience. Writing up research is the final stage of a research project. It assumes researchers have conducted the research project using appropriate research approaches, methods and data collection and analysis techniques. Many excellent texts exist to assist you in conducting research, some specific to the LIS field (e.g. Williamson 2002; Powell & Connaway 2004; Pickard 2007; Wildemuth 2009) and some more generally for the social sciences, but still very valuable (e.g. Bryman 2008, Leedy and Ormrod 2010; Neuman 2011). These texts also usually contain chapters or sections about writing up research, often directed to those writing dissertations and theses, but still extremely useful to all beginning researchers and writers. The readers of this paper are encouraged to follow up by reading more widely in this literature. Once you have completed the research project, you need to communicate and disseminate your results. Whether it is within your organisation, to inform organisational decision making or planning, or destined to be shared more widely through journals or conferences, wikis or blogs, developing a good, effective and concise research report is an art form in itself. There are many ways to do it, and different types of research reports contain different types of information, expressed in different ways. There are many aspects to consider, for example, will the audience want or require full technical details about how you conducted the research, are they looking for a summary of results that will help them plan or make decisions, or are they about to review your research for a journal? In choosing how to write up and where to publish the research you've done, consider how you have conducted the research, the topic you've chosen, and the audience you seek. This paper will now proceed to discuss the components of a research report. Following from that is a

discussion of some of the different types of publication in which research is published. Finally we look at some of the practicalities of writing, researching and selecting the right mode of publication, the writing itself, and finally, authorship and the ethics of authorship.

## 2 THE COMPONENTS OF A RESEARCH REPORT

Whether writing for an internal audience, for example writing up a report of evaluation research on an organisation service or process, or for wider dissemination, most research reports broadly follow a widely accepted structure (e.g. Bryman, 2008, Chapter 27; Leedy & Ormrod 2010 Chapter 12, Neuman 2011 Chapter 16; & Pickard 2007 Chapter 24):

- Abstract/Executive Summary
- Introduction
- Aims of Research
- Literature Review
- Methodology
- Findings
- Conclusions/Recommendations
- Appendices

While it is possible to vary somewhat from this basic structure and the length and character of these sections will vary depending on the intended audience, one would want to think very carefully before departing too radically from this familiar format, especially as a beginning researcher and author. While the text below provides an introduction to the components of a research report, space limitations for this article prevent the greater level of detail about the in-depth requirements of each of the components and detail on the organisation and structure of a publishable research report.

An **abstract** is a succinct summary of your article or report. It should be able to stand alone as a summary of the paper. An abstract should very briefly summarise the purpose of the research, its methodology, findings and any limitations or implications of the research and the value or contribution of the research. It should enable the reader to decide whether or not to read the full text and is often used as a reference tool in indexing and abstracting services. An **Executive Summary** is similar but provides the reader of a report (internal, business or technical) with an overview of a report's essential information. It is designed to be read by busy people who need to know what the report contains, but who are unlikely read the whole report. The contents are slightly different to those of an abstract, and an executive summary may be slightly longer than an abstract. It should briefly outline the subject matter, the background problem, the scope of the research, the methodology, the important findings, arguments and issues raised in the discussion, and the conclusion and recommendations. Both abstracts and executive summaries come at the beginning of your report but should be the last thing written.

The **Introduction** explains the purpose of, and provides the background to, the research project. As with the abstract/executive summary, it should presage the key findings and conclusions of the research.

While sometimes incorporated into the Introduction, it is more usual to include a separate section outlining the **Aims of Research**. This should clearly and succinctly state the aims and objectives of the research, while at the same time justifying them. Why were these particular questions and issues chosen? Why would they be of interest to the reader?

The length of the **Literature Review** section may vary considerably, depending on the audience, but is always a vital component if your report is to have credibility as research. A good literature review will include discussion of existing research relevant to your study as well as the theoretical and methodological literature that influenced your approach. It is important that the review be purposeful, focussing on the importance of this literature for the study, rather than simply summative.

The **Methodology** section describes how the data collection and analysis was carried out. It is important that this section be more than simply a discussion of methods. Rather a methodology section should describe why the approach taken was an appropriate way to investigate the research questions, why you have chosen your theoretical approach and to address organisational concerns of the research in this particular way.

The **Findings** is usually the largest and perhaps the most important part of any research report. The format of this section will vary depending on the type of study. A quantitative study will need to use tables, graphs and other tools to make the data clear and accessible, while qualitative studies may use interview quotes, vignettes or even photographs to connect the reader to the data. Looking at the published reports of other similar studies will give you a good idea as to what are acceptable practices in terms of presenting findings to the communities you wish to reach. When writing up this section, it is important to consider what the most important findings of the study are, and to highlight them appropriately.

The **Conclusions/Recommendations** section is in many ways even more important than the Findings. This section is your opportunity to discuss the significance of your study and to explore its implications. Do not introduce any new findings or concepts in the conclusion. The nature of the discussion will vary depending on the intended audience; while an academic study might focus more strongly on the theoretical and/or methodological implications of the study, a professional report will tend to focus on organisational and/or practice implications.

While not all research reports include **Appendices**, they can be useful for including research instruments (interview guides, questionnaires etc.), consent forms, data sets

etc. that readers may wish to see but which are too large or marginal to be included in the main body of the report.

### **3 AUDIENCE AND CHOOSING THE RIGHT TYPE OF PUBLICATION**

All “written up” research will include the above components, or at least most of them. However, all research is not the same. Research is conducted for different purposes, using different methods and for different audiences. This section describes some of the different types of publication outlets, and how to select them. There are many aspects to consider when selecting a format for your research and a publication outlet. To help us make these decisions we need to consider:

- Who are the intended readers?
- What tone, language and aspects of our findings are appropriate for these readers?
- How do we balance readability and research rigour?
- How might the readers use the text?

Important to note when publishing research is that there are many ethical issues which much be addressed. When academics and research students begin research, they are required to go through a stringent process of seeking and gaining ethics approval. This is not always a requirement in practice based research. However, all researchers need to be aware of their ethical responsibilities. Some are considered in Section 4.4. of this paper and a valuable resource for all researchers is the *Australian Code for the Responsible Conduct of Research* (2007). An ethical issue that should be considered at this stage, especially if you are publishing internal research for a public audience is that you may need to seek permission from collaborators, funders, and the parent organization in order to publish your research. Also consider making acknowledgement of the contributions of those people and organisations.

#### **3.1 Internal (organisation) reports**

Internal reports, which aim to report research within an organisation, are an important publication type. An internal report might be appropriate because the information is commercial in-confidence, or because the organisation needs to make decisions based upon your research. Sometimes research published in internal reports is also later published externally, but what is contained in an internal report and its related journal article might be quite different. Reports are texts written to communicate information to busy professionals and managers.

Research conducted in an organisation and destined to be disseminated in a report will contain all, or most of the components of a research report discussed above. However it will have a number of content and stylistic differences. For example, in the

organisational context, reports usually analyse and evaluate that information from the point of view of the particular organisation. Reports will have an executive summary of the whole report which in one page or less should summarise the report's purpose, findings, conclusions and recommendations. It should also have a table of contents which lists the sections of the report as well as the second and third level headings with the page number on which each occurs. This enables busy people to go directly to the bits that are important to them. Importantly, reports should have recommendations which are a summary of solutions or courses of action that follow logically from your interpretation of the findings. Recommendations are usually "should" statements. They are specific and indicate what should be done, who should do it, where, when, how and (sometimes) at what cost. Finally, because reports are not limited by journal word counts or page limits, they can include appendices of the actual data (often in the form of tables, charts, images and examples) upon which your report is based.

### 3.2 Journals

As well as disseminating your research to internal stakeholders, you may well feel that your research has implications for other people outside your own organisation. Writing up your research as a journal article is an effective way to reach a much broader audience.

Different journals have different audiences – and different foci and interests, so it is important that you think about what kind of journal is most appropriate for you. Are you looking to reach a most local, national or an international readership? Is your message aimed principally at other information professionals or are you trying to reach a different audience, such as academics, students, policy makers or members of the professional communities you serve (e.g. legal or health professionals)? Perhaps, a trans-disciplinary journal with a broad and diverse audience, such as *First Monday*, might be appropriate? Who you want to speak to should be your most important consideration when choosing a journal.

Journals can be loosely divided into professional and academic journals. Professional journals, like *Australian Library Journal* and *Australian Academic and Research Libraries*, see their principal audience as members of the profession and are consequently interested in professional development and practice issues. These journals might be interested in research papers about how professionals can optimise delivery of services and research that evaluates processes, technologies, or practices, and enables the transfer of learning to their own organisation (Fox et al 2007).

Academic journals, like *Information Research* or *Journal of the American Society for Information Science and Technology*, see their primary audience as academic researchers – although, ironically, the majority of their readership is actually students! Their focus is more overtly scholarly, with a strong focus on the broader implications of the research. How does it engage with and extend theory in the field? In what ways is it

methodologically innovative? How does it contribute to our understanding of the relationship between people and information?

Perhaps the most important thing to bear in mind when sitting down to plan your journal article is that although it may follow a structure broadly similar to that of a research report, its focus needs to be quite different. A journal article is shorter and needs therefore to be more purposeful – it cannot be simply a shorter version of research report. The aim of a journal article is not to provide a comprehensive record of every aspect of your research but rather to highlight those aspects that are of particular significance to the journal's readership. Many inexperienced writers get caught up in minutiae and fail to get their major point across. When writing a journal article one must always bear in mind one key question - "Why should the readers care about my study?"

Inexperienced authors also often make the mistake of trying to cram too much into one article. By casting their net too widely, they cannot cover any of their points in adequate detail and consequently, the article feels superficial. Instead, it is important to recognise that a good article will focus on only one or two key points, thus having the space to develop a coherent narrative expounding them.

### 3.3 Confer ences

Conferences offer another useful way to bring your research to the attention of a wider audience. Conferences are all the more important because they are dialogic – offering an opportunity not only to present your research but also to discuss it with other researchers and information professionals.

As with journals, there are many different type of conferences – some professional, some academic. Some are essentially local or state events and these can be a good venue for a neophyte to have their first foray into conference presentation. If you want to reach a larger audience, then you might consider ALIA's *Information Online*<sup>1</sup> conference held in Sydney each year or their bi-annual meeting. Those new to the profession should consider presenting at ALIA's *New Librarians Symposium*<sup>2</sup>. Top of the conference tree are large international conferences, like *The International Federation of Library Associations and Institutions* (IFLA)<sup>3</sup> and the *American Society for Information Science and Technology* (ASIST) Annual Meetings<sup>4</sup> and prestigious academic conferences like *Conceptions of Library & Information Science (COLIS)*<sup>5</sup>.

One of the great strengths of a conference is the opportunity to give a presentation about your research, as well as write a paper. When preparing for a conference, you need to think of your oral presentation as being related to but separate from your written

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<sup>1</sup> <http://www.information-online.com.au/>,

<sup>2</sup> <http://conferences.alia.org.au/nls5/index.html>

<sup>3</sup> <http://conference.ifla.org/>

<sup>4</sup> <http://www.asis.org/conferences.html>

<sup>5</sup> <http://www.iva.dk/english/colis8/>



paper. Your presentation will need to be even more focused than your written paper. An effective conference presenter is one that recognises the importance of focussing on only one or two key points. A conference presentation is a performance, and any experienced performer will tell you that it is vital to grab your audience's attention in the first minute. Many inexperienced presenters spend far too long on preamble and lose the audience's attention. As with a journal article, your first thought must be "Why should these people care about my research?"

A conference presentation can be a good opportunity to use more than text to represent your research, so think about how sound, graphics, photos and video might be used to bring your presentation to life. It is always important, however, to ensure that your use of media enhances the message you are trying to get across and doesn't overwhelm it. Similarly, it is vital that you do not cause your audience to succumb to 'Death by PowerPoint' – a tool all too easily misused. Don't have too many slides – a maximum of one slide for every 2-3 minutes of presentation is a good rule of thumb – and ensure that they don't contain too much text – a few dot points are far more effective than great slabs of text.

### **3.4 Web 2.0**

Research has long operated within the system of scholarly publishing. Many see research as incomplete until it has been peer reviewed by a group of anonymous experts and published in a journal or scholarly monograph. However, what we commonly call web 2.0 offers many opportunities to researchers for disseminating their work. These forms of dissemination may not currently provide the demonstrated legitimacy of peer review required for academic advancement, but they certainly provide excellent methods of dissemination beyond small disciplinary groups or journal readerships. Research published through social media often does not contain all the components of more formally published research discussed in section 3 above, as it may be reporting research in progress, ideas from research, be intent on provoking discussion and response and so forth.

While many social media can be used to disseminate research, the most common type of social media currently in use is the blog. Three main types of research blog have been identified (Ward 2009). These types are: blogs used as forums for social debate based upon research; blogs used as research logs which serve as a record of research conducted and ideas to be pursued; and blogs about research life. Blogs can be maintained by individuals or groups, and may be open or closed to comments from without. Those open to comment can invite feedback, help create networks of people interested in similar fields of research, and spark interesting and controversial discussions. An example of a research blog in our own field is that maintained by the Australian Learning and Teaching Foundation funded LIS 2.0 project.<sup>6</sup>

Web 2.0 has also added another dimension to writing up research; it has enabled more collaborative writing. While traditionally people writing up together have either divided

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<sup>6</sup> <http://liseducation.wordpress.com/>

up sections of a paper, or written sequentially, new tools such as Wikis and Googledocs enable texts to be created more iteratively and synchronistically. There are, of course, issues to address such as coordination and cooperation, and even world view, but many authors are writing successfully in these types of environments. Many collaborative writing tools are restricted to the research project participants, but an example of the way they work can be seen at Citizendium.<sup>7</sup>

### 3.5 Open access

Open access ensures wide dissemination of your work over the Internet, to more potential readers, than just that of the particular journal or conference proceedings. Some authors deliberately select an open access (OA) journal. This form of open access is known as open access publishing. Good examples of open access journals in the LIS field include *Libres*, *D-Lib Magazine*, *First Monday*, *Ariadne* and *Evidence-Based Library and Information*. The Directory of Open Access Journals<sup>8</sup> supported by the Lund University Library supports this service which service covers free, full text, quality controlled scientific and scholarly journals.

Other authors choose to publish their work in traditional subscription access journals and instead make a version of their work available through an OA repository (self-archive). Repositories are combinations of software and hardware that together provide a set of services than manage and disseminate digital works (Lynch, 2003). The term commonly used for depositing ones work in a repository is to “self archive” (Kennan & Wilson, 2006). Research output (journal articles, conference papers etc.) can be self archived at either the pre or post peer review stage. Self archiving is commonly known as green OA and operates in conjunction with traditional scholarly publishing. Its focus is to provide access, not to provide all the functions provided by a journal. OA repository content exists to provide access for those who do not have subscription access to the journal and to provide additional visibility of the work through search engines. Repositories rely on journals for registration and certification through peer review (see below). The two systems, green OA and traditional publishing, at this point in time, require coexistence.

Many institutions have their own OA repositories. If your does not, then two disciplinary repositories cater specifically for the LIS field: *DLIST: Digital Library of Information Science & Technology*<sup>9</sup> based at the University of Arizona; and *E-LIS: E-prints in Library and Information Science*<sup>10</sup> run by an international group of volunteers and supported by various organisations. You can check *Sherpa RoMEO*<sup>11</sup> for publisher policies on copyright and self-archiving. A good proportion of publishers permit self-archiving, or when you sign the copyright or distribution agreement with a publisher you may negotiate for self-archiving rights..

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<sup>7</sup> [http://en.citizendium.org/wiki/Welcome\\_to\\_Citizendium](http://en.citizendium.org/wiki/Welcome_to_Citizendium)

<sup>8</sup> <http://www.doaj.org/>

<sup>9</sup> <http://dlist.sir.arizona.edu/arizona/handle/10150/105066>

<sup>10</sup> <http://eprints.rclis.org/>

<sup>11</sup> <http://www.sherpa.ac.uk/romeo/>

## 4 P PRACTICALITIES

### 4.1 Researching and selecting the right publication outlet

All journals (and conferences), whether practitioner or scholarly, are aimed at a particular audience and may have specific areas of coverage, target particular types of methods and may even have a particular tone. Furthermore they have different submission rates, acceptance rates, reviewing procedures and editorial boards. Prestige is related to these kinds of factors.

Become familiar with the journals in our field and even related fields. Investigate their different styles and approaches. One outcome of the Excellence in Research Australia (ERA) research evaluation exercise has been the production of lists of journals ranked by discipline or field of research (FoR). The FoR for library and information studies field (LIS) is 0807. You can check what journals the ERA ranks in LIS<sup>12</sup>. The journals (which must be peer reviewed) have been ranked in discipline-specific tiers of A\*, A, B, C. Getting published by an A\* or A ranked journal is considered to be an indicator of quality/impact for the purpose of the research assessment exercise, but a highly ranked journal is not always the best outlet for your publication. For example, you may seek a particularly Australian one, or one that publishes practitioner based evidenced-based research<sup>13</sup>. Another way to discover the wealth of journals in the LIS field is Scimago<sup>14</sup> which uses Google's PageRank algorithm (as an indicator of 'journal influence') to rank journals. While you may not be interested in rankings, these tools provide you with a list of titles in the LIS field. These resources list scholarly peer-reviewed journals, or journals which have scholarly peer-reviewed sections. Other journals, just as valuable in their own way, can be found through sources such as Ulrich's Periodicals Directory.<sup>15</sup>

In making decisions about where to publish your research, read widely. Start with journals that are familiar to you and that you have found useful in the literature review of your research project. In addition to reading the guidelines for authors and the journal's aims and scope, and read through the journal's articles over a couple of years, before deciding upon it as a publication outlet for your written up research. Try and understand the trends in recent articles; what has occupied the pages of the journal over the past few years? Is there a call for papers in which your research fits, indeed is your research a fit for the journal? 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 jargonistic, or somewhere in between? Is there a balance of empirical research, theoretical work, literature review, case studies, or does the journal focus on one type of

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<sup>12</sup> [http://www.arc.gov.au/era/era\\_journal\\_list.htm#1](http://www.arc.gov.au/era/era_journal_list.htm#1)

<sup>13</sup> An alternative site for the ERA journal rankings is provided by John Lamp of Deakin University: <http://lamp.infosys.deakin.edu.au/era/>. Although not an official ERA site, it is useful because it provides an excellent search interface by FoR and journal name.

<sup>14</sup> <http://www.scimagojr.com/>

<sup>15</sup> <http://www.ulrichsweb.com/ulrichsweb/>

article, or one narrow domain such as management, reference or cataloguing? Does the journal have a particular methodological slant?

While the polarisation of journals and article types into 'academic' and 'practitioner' is not always helpful, it is important to have an audience in mind. Some journals have a deeply scholarly approach and require rigorous research methods, with deep description and often challenging applications of theory. These journals generally are best avoided by the novice researcher and much practice-based research.

All journals have different lengths of time from submission to publication. These time frames can vary from a couple of months to a couple of years. Ideally, you do not want to wait too long for your research to be disseminated. Some journals help you make decisions about whether their processing time is suitable for your paper, by publishing submission, review and acceptance dates along with the article.

In summary, there are many issues to consider when selecting a journal (or conference), and to minimise the prospect of rejection, it is important to spend a bit of time on this well before you reach the final writing up stages.

## 4.2 Writing

Translating research into readable prose is far from easy (Fox et al 2007). But it is essential for you to disseminate your research – otherwise why do it? Start writing from the very beginning of your project. Early on it does not have to be perfect, some people find detailed notebooks or diaries useful. Latour (2005) talks about writing as being a tool in the researchers tool box, and it is. Writing stuff down will help you clarify your thoughts throughout the process, and later when you write up more formally – that is when you target a particular journal.

As we discussed above, journals have their own styles and approaches. Therefore it is sensible to have one in mind before you commence the formal writing process. Authors have their own voices too. You will find you have a natural writing voice. We learn from others, but develop our own style. There needs to be a fit between the author's voice and the journal's voice.

. Sometimes a "scientific" third person voice is required for credibility, other times the "intensity of the first person, to maximise impact and change attitudes" is what is required (Fox et al 2007 p 155).

Do not aim for perfection at first. Write and then edit frequently, and ask your friends and colleagues to read and comment. Define technical words early, and always spell out acronyms at first mention. Do not rely on spell check – it might not know if you mean "their" or "there". Pay attention to logical flows of argument and data.

Always think about the reader. Who is your audience? What is the key information you want to share? What are the key points you want them to take away with them after reading your article? If you are familiar with the journal or conference, as suggested above, you will know what you can assume your reader will already know, and what you

may need to explain. For example, when writing for a journal such as *Australian Academic and Research Libraries* you may not need to explain what ERA is, but in an international journal or a journal aimed at a different audience, you will almost certainly have to explain the term as you introduce it. Every text on writing gives the following advice: edit, edit, edit, put the paper aside, come back to it and edit again; remove clichés; and aim for an active sentence structure (Eagleson, 1990).

Once you have the paper “written up” it is time to think about submission. It is important to make a positive first impression. Upon submission, the first reader is likely to be an editor who will decide whether the paper is worth sending out to reviewers, or, if the journal or conference is not peer reviewed, to a colleague for consideration. You need to get your paper over this first hurdle. While the content of your paper is very important, so is taking care to make the processing of your document as straightforward as possible for the journal administrators, editors and reviewers. Ensure that you have adhered to all the instructions for authors. For example, some journals like all manuscripts double spaced, each journal will require different types of referencing, from Harvard and APA to the Chicago style, and most have strict layout and word limits, and have special requirements for submission of figures and diagrams. Spend a lot of time checking your references. Make sure that every paper you cite in the text is listed in the reference list, and make sure that the references are accurate. Every journal will have their own criteria for referencing, and each reference style has books or web pages which explain and detail the referencing methods (DCITA., 2002).

### 4.3 Peer review

Before your article or paper is accepted by a journal or conference, it will need to go through a review process. The standard reviewing process among high quality journals and conferences is to use **double blind peer review**. In this, an anonymised version of your submission is sent to at least two outside reviewers that 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.

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. Peer review is not something to be frightened of, most reviewers work very hard to provide constructive feedback, so try not to take any criticism personally! Informed criticism and suggestions can improve our work.

When you receive your referee’s reports, you should go through them in detail and use them to develop a plan for revising your manuscript. One thing to bear in mind is that you don’t necessarily have to follow all the reviewers’ instructions – those of us who have been writing for some time all have stories of one reviewer requiring the exact opposite of the other! 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 or want you to revise further.

Inevitably, however, sometimes your submission is rejected. This is never a pleasant experience but again, it is important not to take it personally. Read the referees' and editor's reasons for rejection carefully – it may simply be an indicator that you have not chosen the appropriate journal for your work and in rejecting your work, the editors may be actually doing you a favour in terms of encouraging you to search elsewhere for the right audience. After considering the reasons for rejection, think about what other journal or conference might be a suitable alternative and then revise the manuscript accordingly. Above all, don't give up!

#### **4.4 Authorship and the ethics of authorship**

When you claim authorship of research, or any publication, you take responsibility for the research and how it was conducted. You also claim ownership of the written work. Therefore it is important to always be faithful to the research and the data, as well those that have gone before you by recognizing and acknowledging their work in the field, particularly in the literature review.

It is generally unethical to publish the same data in different forms in different journals unless it is acknowledged, for example 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.

To submit the same paper simultaneously to more than one journal with the intent of withdrawing it from the journal that responds last is also generally regarded as unethical. Editors and reviewers (who often do their work voluntarily, and in addition to a "day job") put a lot of time into reading and evaluating your work before they accept or reject your work. Do not waste their time!

Determining who should be listed as an author, and in what order they should be listed, can be a hurdle, especially where the work is conducted by multi-disciplinary teams of people, or where there are power relationships between the authors. First author generally gets the most credit (Holley 2010) and they should also do most of the work. Researching and writing in a group can be rewarding and provide impetus to a project. When one person is busy on other things or at a low ebb, the other can pick up and there are benefits in having more than one set of eyes and hands on a project. But there can also be complications such as "downed communication lines" and differing styles and expectations (Nye 2010).

Conflicts can arise over authorship, so it is best if authorship is discussed openly and agreed upon early in a research project. As conflicts can arise, the *Australian Code for the Responsible Conduct of Research* (2007) has a section on authorship with the most important sub-section being:

*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*

- *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. (section 5.1)*

People who, and organisations which, contribute in other ways than the above, are generally recognised in the acknowledgements section. All authors must give their active consent to being authors and approve the submitted and published versions.

## **5 IN CONCLUSION**

Others can learn from our research. If research is not disseminated, then it cannot be used beyond its immediate environment to improve services or practice, nor to increase the knowledge base of our profession and discipline (McNichol 2002). So writing up and disseminating research is a key component of the research process. This paper provides some tips on how to write an effective, concise research report. In it we discuss the essential components of a research report and provide examples of the major outlets in which research is disseminated; reports, journals, and conferences. The practicalities of writing are also addressed, from selecting the right publication outlet, to writing itself, reviewing and the ethics of authorship. Writing is not necessarily an easy task, but like any task, the more we do it, the better we become at it. We encourage LIS practitioners to conduct research and then write it up so that it can be shared to further the knowledge base of our profession.

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