THESIS TEMPLATE: PAPER PLUS APPENDIX FORMAT

HOW TO USE THIS DOCUMENT

This document contains a template for writing a thesis using the papers plus appendices format. We *strongly urge* you to use this format if there is even a small likelihood that you could write a paper for publication from your thesis.

After you have read this page delete it so that the title is the first page

Type in black should be left as is unless there is a really good reason to change it

Type in blue: you need to replace it with what it tells you to put in (e.g. you name)

Type in green: this is notes to you about the type of content you put in, suggestions about formatting etc, reasons why something might or might not be a good idea etc

In the green notes, there will be words like "never do …". Of course there be someone who is doing something that will require an exception. The main thing would be to think carefully before you do something different.

To offer a correctly laid out thesis to an individual (i.e. your supervisor) to criticise means that he/she will focus on scientific relevance, logic and data, rather than spelling, grammar, punctuation and sentence construction.

TITLE OF YOUR THESIS

Your full name including all middle names, but do not include previous degrees

Thesis submitted in partial fulfilment (put this line 7-10 lines up from the bottom)
of the requirements for the degree of
Doctor of Health / Master of Public Health

Charles DarwinUniversity

Month and year of submission*

*NB – change this date on the final bound version you submit after examiners comments

NOTE

This thesis is presented in the form of a paper written for publication in the (name the Journal here) with additional appendices.

If you use this format, you must read the Instructions to the Authors of the journal you have nominated and follow them carefully – i.e. the correct reference style, format of tables etc. There are a few minor exceptions that are related to the fact that this is a thesis (see below).

The above comment is put in the thesis so that the examiners understand that they are not to expect it to be written in the standard scientific format.

- The page numbering should start with Roman numerals here (this is page i) and then change to Arabic numerals on the first page of the Introduction. This is already in the document. Note that there is a section break, not a page break, at the start of this page, and another section break just before the introduction – if you delete these and replace with a page break you will lose the numbering that has been done.

ABSTRACT

The abstract comes before the contents page.

The abstract cannot be written until the end when you have done most of the rest of the thesis. Follow the specifications of the Journal you have selected. Some are very specific about whether you should use a structured abstract or specify a maximum word length.

When you read papers for your literature review – take the time to examine what parts of the paper are included in the abstract – look at what is summarised, what is left out etc – this is a good guide as to which types of things from your research you need to put in the abstract. You will note that there is rarely more than about 2 sentences describing the reason for the study, for example. Make sure every result you present in your abstract is presented somewhere in the body of the thesis.

Some general formatting notes for your whole thesis:

- Use 11 point or 12 point. Select a type face with serifs, e.g. Times Roman (serifs are the curly bits on the letters) which is easier to read than a sans-serif typeface (This is Arial which is a sans-serif typeface – it has no curly bits. However, when making slides or overheads for projection, the opposite is true – use a sans-serif typeface because it will project more sharply). Times Roman, which is proportional font, is better than New Courier which has serifs, but is not a proportional font – i.e. in New Courier all the letters are exactly the same space apart despite the fact that an i does not need to take up as much room as an o – this is more difficult to read than a proportional typeface.

You should select either 1.5 spacing or double spacing and use this for all text throughout your entire thesis. Never hand in a single-spaced draft to your supervisor – they need room to write on it. This is not the time to try to save a few trees. (This is in 1.5 spacing)

- Margins should be at least 2.5 cm on the top, bottom and right hand side and a bit more on the left hand side to allow for binding e.g. 3.0 cm. This document has already been set up like this.
- Look at the tool bar at the top of this page – see in the left hand side where it says “body text” with a down arrow next to it? If you don’t know what this box is for, find out *now*!! It will make you life so much easier with doing all the headings and subheadings in your thesis.

- Generally-speaking, you should right and left justify the text of your thesis and page numbers go in the centre at the bottom.
- Decide what sort of heading structure you are going to use (e.g. are you going to use numbers like 2.3.1 for sub-headings?). Decide on this before you start your first draft and stick to it, otherwise you will spend at least one day at the end doing nothing but formatting. Do not give you supervisor unformatted drafts to read – they will complain that they can't follow what you have written without a good layout. They may even refuse to read it.
- Also, early in the process you should decide how you are going to spell words that can be spelt a number of different ways, e.g. breastfeed, breast-feed, and breast feed would all be acceptable. If you are writing in this area, pick one and spell all similar words (.e.g. breastfed, breastmilk) in the same way.

ACKNOWLEDGMENTS

Most people acknowledge their family, (even their dog!), their supervisors, others who helped, study participants etc. You don't have to have an acknowledgments page if you don't want to.

If you do not have an acknowledgments page then the following sentence should be put on the last abstract page (leave a gap of a couple of lines between it and the abstract):

Except where noted, all the work was done by the candidate.

Or you might need to be more specific if someone did part of the analysis, data collection etc for you.

(Strictly speaking, of course, the above is not true, but everyone knows that supervisors are supposed to help you with ideas, interpretation, layout, grammar etc, so this goes without saying. In fact, have a look at the criteria for Authorship in e.g. the Medical Journal of Australia or the Australian and New Zealand Journal of Public Health – you can reasonably expect at least one of your supervisors to meet the definition of authorship and be listed as second author when you submit your paper somewhere)

TABLE OF CONTENTS

If you take the Long Docs course you will learn how to make Word do your contents page automatically.

LIST OF TABLES

Page

You can number your tables starting at 1 and just go sequentially, or you can use the style shown above – whichever you prefer. It's not absolutely necessary to have this page.

LIST OF FIGURES

Page

Etc – see list of tables for more detail. Again, this page is not absolutely necessary.

ABBREVIATIONS

ABS Australian Bureau of Statistics
NT Northern Territory

This page could be single-spaced. You might not need to have this page, or you might need a glossary of terms.

PAPER

TITLE OF PAPER

Arabic numerals start on this page. This is page 1.

Start with the introduction. The Instructions to Authors will probably say that the first page should contain your name, fax, address, etc and that the second page should be the abstract – but this information is already given earlier in your thesis.

Most journals say that a paper should be 2,500-3,000 words long. However, this is very hard to achieve if you have never written a paper before. Aim to get the word count down to 5,000. By the time you get your examiners comments back, the whole thing will be a bit further away and it will be easier for you to figure out which 2000 words you can lop off before you send the paper off to the journal. It's quite tragic how so much work can be condensed into so few words.

INTRODUCTION

Your introduction section should be up to 3 pages long. It contains a brief overview of the rationale of your study (i.e. summary of the essential points in the literature review and the research question).

Although this may seem a bit redundant, because you still have to do the literature review, it is not. This section in a paper is very similar to the Introduction section that you would have to write if you were taking the standard scientific write-up option.

METHODS

In a paper, you usually do not start each section on a new page. Note also, that in a paper, you usually do not have many subheadings and they are not numbered.

In the methods or results sections, you may refer to various appendices in which you have presented extra results (so the examiners can see that you have done things properly and know what you are talking about), although this type of comment will be deleted before you send off the paper. E.g. you may need one or more

appendices giving more detail about your population; the construction of your sampling frame, how your sample was drawn, how the questionnaire/abstraction form or other instruments were developed, measurement methods.

Quantitative thesis

In addition to the above, you will need to include sections on:

Analytical methods

Your analytical methods need to be detailed: saying "Stata 7 was used to analyse the data" is not adequate. Stata contains many different statistical routines – you need to describe whether you did t-tests or chi-square etc). Describe also, if data needed to be transformed because of skewness (which transformation did you use? How did you know it was a good transformation?), how did you handle missing data (did you impute values? If so, how?). How did you know if your regression model was a good model? Make sure you justify your decision if you excluded outliers from your analysis (and check with your statistical supervisor first before you do this). Some of this would be said very quickly in the paper and the justification would be given in greater detail in the appendix.

Qualitative thesis

If you are not collecting your own qualitative data then you will be using other researcher's data, such as that provided in monographs, research publications, conference papers, technical reports or discussion papers. All these will range in the type of qualitative data presented. In reporting on these data in your own thesis it is important to clearly cite where it has come from, comment on the methods used, the results found and the interpretations/conclusions reached by the author(s). Follow the guidelines in the methods section of this template. As interpretative processes are involved in the 'unpacking' of any type of dataset it is important for you to develop a concise evaluation procedure to critically assess the methods, analysis and presentation of the available research.

In presenting data gathered through any qualitative research method, it is important to establish a criterion for evaluation. Here is a sample of one such evaluation process.

Criteria for the evaluation of qualitative research

(See Reid, A., & S Gough. 2000. "Guidelines for Reporting and Evaluating Qualitative Research: what are the alternatives?" *Environmental Education Research 6*: 59-91).

1. Are the methods of the research appropriate to the nature of the question being asked?

- Does the research seek to understand processes of structures, or illuminate subjective experiences or meaning?
- Are the categories or groups being examined a type which cannot be preselected, or the possible outcomes cannot be specified in advance?

Could a quantitative approach have addressed the issue better?

2. Is the connection to an existing body of knowledge or theory clear?

- Is there adequate reference to the literature?
- Does the work cohere with, or critically address, existing theory?

Methods

3. Are there clear amounts of the criteria used for the selection of subjects for study, and of the data collection and analysis?

4. Is the selection of cases theoretically justified?

- The unit of research may be people, or events, institutions, samples of natural behaviour, conversations, written material etc. In any case, while random sampling may not be appropriate, is it nevertheless clear what the population sample refers to?
- Is consideration given to whether the units chosen were unusual in some important way?

5. Does the sensitivity of the methods match the needs of the research question?

- Does the method accept the limitations of an approach which respects the perceptions of those studied?

- To what extent are any definitions or agendas taken for granted, rather than being critically examine or left open?
- Are their limitations of any structured interview method considered?

6. Has the relationship between fieldworks and subjects been considered, and is there evidence that the research was presented and explained to its subjects?

- If more than one worker was involved, has comparability been considered?
- Is there evidence bout how the subjects perceived this research?
- Is there evidence about how group processes were conducted?

7. Was the data collection and records systematic?

- Were careful records kept?
- Is the evidence available for independent examination?
- Were full records or transcripts of conversations used if appropriate?

Analysis

8. Is reference made to accepted procedure for analysis?

- Is it clear how the analysis was done? (Detailed repetition of how to perform standard procedures ought not to be expected)
- Has its reliability been considered, ideally by independent repetition?

9. How systematic is the analysis?

- What steps were taken to guard against selectivity in the use of data?
- In research with individuals, is it clear that there has not been selection of some cases and ignoring of less interesting ones? In group research, are all categories of opinion taken into account?

10. Is there adequate discussion of how themes, concepts and categories were derived from the data?

- Is it sometimes inevitable that externally given or predetermined descriptive categories are used, but have they been examined for their real meaning or any possible ambiguities?

11. Is there adequate discussion of the evidence both for an against the researcher's arguments?

- Is negative data given? Has there been any search for cases which might refute the conclusions?

12. Have measures been taken to test the validity of the findings?

- For instance, have methods such as feeding them back to respondents, triangulation, or procedures such as grounded theory been used?

13. Have any steps been taken to see whether the analysis would be comprehensible to the participants, if this is possible and relevant?

- Has the meaning of their accounts been explored with respondents? Have apparent anomalies and contradictions been discussed with them, rather than assumptions being made?

Presentation

14. Is the research clearly contextualized?

- Is all the relevant information about the setting and subjects been supplied?
- Are the variables being studied integrated in their social context, rather than being abstracted and decontextualised?

15. Are the data presented systematically?

- Are quotations, fieldnotes, etc. identified in a way which enables the reader to judge the range of evidence used?

16. Is a clear distinctions made between the data and their interpretations?

- Do the conclusions follow from the data? (It should be noted that the phases of research – data collection, analysis, and discussion – are not usually separate and articles do not necessarily follow the quantitative pattern of methods, results, discussion.)

17. Is sufficient of the original evidence presented to satisfy the reader of the relationship between the evidence and the conclusions?

- Through the presentation of discursive data is always going to require more space than numerical data, is the article as concise as possible?

18. Is the author's own position clearly stated?

- Is the researcher's perspective described?
- Has the researcher examined their own role, possible bias, and influence research?

19. Are the results credible and appropriate?

- Do they address the research question(s)?
- Are they plausible and coherent?
- Are they important, either theoretically or practically, or trivial?

Ethics

20. Have ethical issues been adequately considered?

- Has the issue of confidentiality (often particularly difficult in qualitative work) been adequately dealt with?
- Have the consequences of the research – including establishing relationships with the subjects, raising expectations, changing behaviour, etc. – been considered?

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You will note that many of the above items in the qualitative section also apply to quantitative research.

Although it may seem as though you are writing some things twice when you use this thesis format, the big benefit comes in dividing things up between appendices. This means you don't have to spend a lot of time making things flow. You would not believe how much time you can waste editorialising if you are trying to put all of this in one Methods chapter. In addition, the fact that you are putting each table and figure on a separate page at the end, instead of sprinkling them throughout the text will save you the most enormous amount of time in formatting the pages (NB: the word methodology means "the study of methods". This is not the same as "methods".)

All theses

ETHICS

Your methods section should end with a paragraph stating which ethics committees you applied to. This will be Menzies HREC and possibly others. There may be specific things you need to mention, such as obtaining consent from the carers if your subjects were children, or provisions regarding the storage of samples, or any ethical issues that arose and how you managed it. If you are doing research in an Indigenous group, you should definitely mention that Menzies School of Health Research has an Aboriginal Sub-Committee and which Indigenous organisations you talked with.

RESULTS

Similarly, make sure you use Appendices as necessary to present subsidiary results. For example, you might say "the crude results are presented in Table … because adjusting for x, y and z did not alter the odds ratio (see Appendix 3, Table A3.2)" and in Appendix 3, Table A3.2 will show both the crude and adjusted odds ratios.

DISCUSSION

The discussion section of a paper is generally much shorter than the discussion section of a standard scientific format thesis – and it would be unusual for you to write an Appendix with more discussion. So this is definitely an area where you reduce the work – although some people may find the challenge of saying things succinctly to be more of a challenge than finding things to say!.

A common mistake in the discussion section is that students often re-hash the literature review and the results. The purpose of the discussion is to tie it all together, not to say it again. You will probably include paragraphs or sections covering the following:

- Limitations of your study – don't just cite what they are, but describe how they have affected your results – is the bias towards or away from the null? Does misclassification error mean that your positive finding is probably an underestimate? Does misclassification error mean that your null finding might not mean that there is no association?
- How do your results affect the interpretation of previous literature? Don't just rehash your lit review here – this is about how your study adds to it.

You would not normally present new results in the discussion section that were not presented in the results section. The exception might be a "what if" type calculation e.g. if an important previous paper had used the 1986 Australian population for age-adjustment, and you used the 1996 population (for the excellent reasons you gave in your lit review), you might want to present the rate adjusted using the 1986 population in a paragraph about how your results compare with the previous study (i.e. does this methodological difference explain why you got different results?). It would have also been reasonable to have a section in your results exploring this subject.

You might or might not have a paragraph about future research. Do not simply say "more research is needed". You are now an expert – summarise exactly what direction the future research needs to take. Perhaps you can describe how a definition or patient identification system can be modified, or which analytical method is best etc.

REFERENCES

- Check what reference format the Journal uses and follow it exactly right from the start and make sure you type all your references correctly – otherwise you will spend a lot of time at the end fixing it.
- This section must also be 1.5 or double spaced, like the rest of your thesis.

There are fancy programs that will manage your references for you and put them in the correct format. If you do not have on of these then you will have to do it yourself.

1. Many journals want the references numbered in the order in which they are mentioned in the text. To do this, type each reference as a separate paragraph without the numbers then highlight the lot and click on the icon with the numbers you can see in the tool bar above, and it will automatically number them for you. You may have to move the arrows on the ruler to make it line up. As you add more references, it will renumber all of them in this section, but you will have to go back through your thesis and re-number each reference yourself.

This format is called a hanging indentation and is often used in referencing styles where the authors are listed alphabetically. To do it, type each reference as a separate paragraph then highlight it all and click on 'format', then 'paragraph' then the 'special' box in the 'indentation' part and put the cursor on 'hanging'.

TABLE 1

Most journals want the tables to be put on a separate page each, at the end after the references.

Table format is really important. Tables may be single spaced, and you might need to use a smaller font sometimes – but you should try not to use anything smaller than 10 point. Tables can also be landscaped.

The following format is commonly used in health and medical journals. Check your Journal – some have double lines at the top. Note that there are no vertical lines.

Table 3.1: Demographic characteristics of study population by sex and region of residence, NT 1998-2000

Characteristic	Men		Women		Total	
	N	%	N	%	N	%
			Top End			
Age group (years)						
20-24						
25-29						
30-34						
etc.						
Education						
primary						
secondary						
			Central Australia			
Age group (years)						
20-24						
25-29						
30-34						
etc.						
Education						
primary						
secondary						

Most Journals specify that tables are to be made using tabs to make the columns and that the automatic 'tables' features (or tables imported from Excel) are not to be used. Major group headings in italics within the body of the table are OK. The heading of tables should be sufficiently clear that if someone picked up the table without any text they would know who the subjects were and what type of data are being shown.

Study the tables shown in the papers you are reading for your lit review and note the ones that are laid out in an informative manner. In fact, before you go too far in your analysis, it would be a good idea to do dummy tables (i.e. empty ones as above) so that you know what the really important things you need to present are.

FIGURE 1

Figures usually go on separate pages after the Tables.

APPENDIX 1 - LITERATURE REVIEW

The goal of the literature review is *not* to review everything ever written on a particular subject. The goal is lead your reader to understand why your study is the next logical step in the sequence of expanding knowledge on a particular subject. The lit review for this thesis format is the same as for the standard scientific write-up format.

In many theses, you will need to review a content area (e.g. a disease and its risk factors) ***and*** a method of data collection or analysis (e.g. ultrasound scanning, food frequency questionnaire, accuracy of routine mortality data in Australia, the number of different ways that agreement of two methods can be analysed, a review of the difference between knowledge, beliefs and attitudes and how they are analysed, focus groups versus individual interviews). I think this would be true of the majority of theses. Methods of inquiry are an important area in public health but generally not recognised by supervisors who come from a clinical or biomedical background and who, therefore, see research are relating only to advances in disease content areas. Your lit review would generally be somewhere in the range 20-30 pages. This would be less if you were working in a little studied area.

A literature review can contain diagrams and tables (and tables can be landscaped across the page, they do not have to have a portrait setup). A lit review does not have to contain just text. In fact, if you are reviewing the methods and results of a series of studies on a particular topic, there is nothing more boring than an unending series of paragraphs which describe one study after another. It's hard for you to write, it's mind-numbing for the reader and it's rather self-defeating. You are probably trying to look at the similarities and differences in the methods used by the studies so you can come to a conclusion about why they got different results. Writing all those paragraphs tends to lead you into writing a descriptive literature review – whereas you should be displaying your critical appraisal skills in the literature review. (A frequent comment of examiners is that the literature reviews they read are not critical). Using the tables approach to summarise the literature is a really good way to help you and the reader grasp the salient features that are the same and that are different. Then all your text needs to do is compare and contrast – you don't need to write anything about the actual studies.

A really good example of this style of review can be found in:

de Courten M, Hodege A, Dowse G, King I, Vickery J, Zimmet P. *Review of the epidemiology, aetiology pathogenesis and preventability of diabetes in Aboriginal and Torres Strait Islander populations*. OATSIH, Commonwealth Department of Health and Family Services, Canberra, 1998.

For your thesis, you would probably put the tables summarising the literature in the lit review chapter, not at the back in an appendix as de Courten et al did for their report. Note how the text does not describe the studies themselves, but comments on them. Note also that they are very clear about the standards they used to group the studies according to rigour of design.

Make sure you are suitably critical of the literature. Remember that not everything in print, even in high quality journals, is worth reading. Have a look at systematic reviews in the Cochrane Library (a CD you can get in the NT DHCS library, and the library of probably all medical schools in Australia). Note how authors describe the inclusion criteria for their reviews and do not digress and include papers which do not meet these criteria in their results – although they may include them in the discussion, depending on the topic.

Although the Cochrane Collaboration reviews are directed at summarising randomised controlled trials rather than other types of study design, the approach used to collect and assess the relevant literature systematically is one which can be adapted to non-randomised controlled trial literature. In the health area, there are now many meta-analyses summarising the findings of interventions and so it is important to know how to distinguish the good meta-analyses from the bad ones.

The same thoughts apply in the qualitative research area. Qualitative research embodies a wide range of research activities (including individual interviews, participatory action research, focus groups, written surveys, journals, archives, photographs, and field notes) and theoretical approaches (such as phenomenology, ethnomethodology, symbolic interactionism, critical theory and grounded theory). For an introduction to these research techniques see:

Berg, B. L. (1989). *Qualitative research methods for the social sciences.* Boston, MA: Allyn and Bacon.

Bogdan, R. C., & Biklen, S. K. (1997). *Qualitative research for education: An introduction to theory and methods* (3rd ed.). Boston, MA: Allyn and Bacon.

Coffey, A., & Atkinson, P. (1996). *Making sense of qualitative data analysis: Complementary strategies.* Thousand Oaks, CA: Sage.

Cortazzi, M. (1993). *Narrative analysis.* Washington, DC: Falmer.

Creswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among five traditions*. Thousand Oaks, CA: Sage Publications.

Denzin, N. and Lincoln, Y. 2000. (Eds.) *Handbook of Qualitative Research*, Second Edition, Thousand Oaks CA: Sage.

(note a referencing style commonly used in the qualitative area)

It would be a good idea to end your literature review with a section summarising the implications of previous work for the design and approach of your study. I.e. make sure that your lit review leads the reader inexorably to the conclusion that your study is the next logical thing to do.

Some writing notes:

- Throughout your thesis, avoid vague words like "issue" and "of concern". These are commonly used when people haven't thought about what they are really trying to say. Say what the issue is. Say what your concern is.
- It is quite acceptable to use the active voice, not the passive voice. It is fine to say "I analysed" instead of "data were analysed". This often makes paragraphs shorter and therefore easier to read. E.g.:

> Condon *et al.* (1998) have conducted a validation study of the NT Public Hospital data and have reported high levels of accuracy in the reporting of the first three items. Mackerras (1998) has contrasted the values of birth weight in community and hospital case notes with those available from the NT Perinatal Collection and has reported a high level of agreement between these sources of data (65 words)

> The validation study of Condon *et al.* (1998) of the NT Public Hospital data found high levels of accuracy in the reporting of the first three items. Mackerras (1998) found a high level of agreement in the mean birth weight in community and hospital case notes with those available from the NT Perinatal Collection (54 words)

- Put 2 spaces, not 1, after a full stop and before the beginning of the next sentence. This makes text much easier to read. (However, this type of formatting is going out of fashion.)
- Use the past tense when describing what previous authors found, postulated etc. e.g. "it was suggested not "it is suggested".
- Avoid unnecessary wordy phrases. Use "To" not "In order to".
- "Different from" not "different to" or "different than".
- Decide on a format for numbers in the text. One convention is to write out numbers from one to ten and then to use figures for 11 and over. Although generally numbers at the beginning of a sentence are written out, 'The Lancet' does use figures at the beginning of a sentence (but this is not a widely used convention and examiners may criticise you for doing this).
- Be careful not to plagiarise in your lit review.

APPENDIX 2 etc

Depending on what the appendix is about you may not even have to write any words. You could simply have some Appendices containing only supplementary tables. If so, make sure that the title of the table is really clear.

You may need an appendix giving more details about your methods. Describe as appropriate: your population; the construction of your sampling frame, how your sample was drawn, how the questionnaire/abstraction form or other instruments were developed, measurement methods.

In a quantitative thesis you must include a section which contains either the sample size calculations or the power calculations. You should have written this section as part of the proposal that went with your Ethics Application.

You may have noticed that different printers print the same thing with slightly different numbers of lines per page. This means that if you are doing some of your typing at home, the page layout may be different when you go to print at work. This is not usually a problem for something which is only text but can drive you crazy with tables and figures which get split over 2 pages. You can waste a lot of time messing with this. When you start on doing all the tables, commit to only one printer.

If you have a lot of figures, I would suggest that you put them all in a separate file until you have finalised all the text. Figures really slow down how fast Word operates and you can go crazy as text disappears under them.

REFERENCES

- This section contains all the references cited in your paper, your literature review and any of the other appendices.
- Stay with the referencing system that the Journal you wrote the paper for prescribes.
- This section must also be 1.5 or double spaced, like the rest of your thesis.