

A Guideline to Including Publications within a Doctoral Thesis.

Preamble

The 'doctoral thesis with publications' is a hybrid thesis model which includes both published and unpublished material. It is an option for those doctoral candidates seeking to develop skills in writing peer-reviewed publications during their doctoral enrolment. Undertaking a doctoral thesis with publications requires the support of the supervision team, normally from the finalisation of the supervisory agreement through to thesis completion. It should be noted that the approach to including publications within a doctoral thesis may vary by Faculty¹ (and within Schools and Departments). Candidates may change their decision to include publications within their thesis and revert to a 'thesis by monograph' format during their candidature. While this document is intended to provide guidance for including publications within a doctoral thesis, it also contains information supporting a thesis by monograph. With a growing interest in, and adoption of, including publications in doctoral theses, guidance is timely. Including publications in these assists in enhancing students' publication experiences and their CVs, enhances the public reputation of UC, and contributes to improving PBRF scores.

The model of including publications within a doctoral thesis seeks to support the candidate in developing their professional credibility as a scholar among their peers, which includes the timely dissemination of research findings in reputable peer-reviewed publications, while under the mentorship of their supervisory team². UC is strongly supportive of any approach, that improves the credibility and employability of UC's doctoral graduates, recognising that peer-reviewed publications are an important element of developing a research career.

Requirements

There is no formal process for including publications within a doctoral thesis; initially it requires only an informal agreement between the student and their supervisory team. The model requires the candidate to present a thesis comprising typically between two and six

^{*} Acknowledgment is made to Massey University, Queensland University of Technology and the University of Waikato upon which much of these guidelines are based.

¹ Faculty as used in this document, is inclusive of the UC Business School.

² This should be contrasted with a thesis by publication. While the thesis by publication also provides a mechanism for doctoral students seeking to develop skills in writing papers for submission to peer reviewed journals during their doctoral enrolment, it differs in that the thesis student authors or co-authors multiple articles that are then joined together to constitute the doctoral thesis. Each chapter will therefore appear as a standalone research article.

research papers (as determined by each Faculty), some of which have been published, while others may be under review or prepared for submission. The exact number of publications included in the thesis may vary due to, for example, disciplinary expectations, the significance or major contribution of the published work, or typical length of publications in the field (such as with word limits and format). The doctoral thesis may also include some chapters that are not destined for publication.

The doctoral candidate, with support from their supervisory team, should target reputable national and international journals for peer-reviewed publication. Students are encouraged to work with their supervisor, and Library support staff, in determining what would constitute an appropriate reputable journal.

The research papers included within the thesis must be interconnected and linked to the specified doctoral research project. That is, they cannot originate from a range of unrelated projects.

The data collection and analysis must have been conducted and the research papers written during the period of the candidate's doctoral enrolment; candidates cannot present work conducted prior to enrolment as part of their thesis.

In addition to any published or unpublished written material, the submitted thesis **must** include chapters comprising (1) a thesis introduction which provides the contextual framework of the associated papers; and (2) a concluding discussion chapter highlighting the overall contribution of the published papers. Many disciplines might also consider it important to include separate literature review and methodology chapters, especially if these matters are not dealt with at length in the research publication chapters.

It is important to note this is not a thesis *by* publications (such as a bounded collection of published works) and that the inclusion of these unpublished chapters is vital to the production of an integrated and coherent thesis document. Additional detail that is not included in a publication must be included in appendices or in additional opening or concluding paragraphs to the thesis. This allows for the situation where such details require omission, for example, as part of the formal publication process (for example, word limits), and are added back in for the thesis. This allows for an independent and stand-alone assessment of the work as a whole.

Co-authorship

Publications may either be sole or co-authored. Where publications are co-authored by thesis supervisors and other contributors, the doctoral candidate will normally be the lead author and would normally have contributed the greater proportion of work on all of the papers, especially with the written preparation.³ There may be some variance as is relevant for each discipline and determined by Faculty; for example, a supervisor may be the corresponding author. A person external to the supervisory team should be involved in this discussion; this may be the relevant postgraduate coordinator for the department/school or the person doing the confirmation.

³ Refer to Vancouver Convention/Protocol, where the International Committee of Medical Journal Editors (The Vancouver Group, 1985) released their "Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals"; refer: http://www.icmje.org/icmje-recommendations.pdf. These set out a standardized set of criteria for authorship with the intention of resolving the problems with misuse of authorship. Variations may apply for other disciplines.

As a preamble to each chapter representing a co-authored research paper or publication, the candidate must complete and include a 'Statement of Contribution'. In addition, the thesis must include in an appendix a *Co-Authorship Form*⁴ for each research publication included in the thesis. This details the contribution of all the named co-authors, the percentage of their contribution (note that equal collegial contribution is possible), and the parts to which they contributed in terms of research and/or writing. Each *Co-Authorship Form s*hould be completed at the time each paper is completed and ready for peer review by the doctoral candidate and signed by the supervisory team to ensure a representative account of the work is documented.

Where more than one student has contributed to a publication, the resulting published material may be submitted for examination once only and by one doctoral candidate. Before a student may use a publication in these circumstances, they must get all contributing authors to agree to this through them signing an agreement to allow the student to use the publication as part of their thesis. Therefore, students who plan to use the same data for their thesis will need to have a different approach to the data, since the same publication cannot be used within more than one doctoral thesis. Typically, this would mean that the lead or corresponding student author (or the one who completed the majority of the work for the publication) would include the publication in their thesis, though there may be exceptions. This issue will require consultation and agreement between the students involved, their supervisors, and the relevant postgraduate coordinator. Agreements should be in writing and lodged with the Postgraduate Research Office.

Examination of a Doctoral thesis that includes publications

The inclusion of publications in a thesis does not alter the University's examination processes. Examiners are required to examine the thesis as a whole and should be advised of the manner in which the thesis is prepared at the time they receive the thesis for examination. They are at liberty to disagree with the findings in a published paper and to require revision to published work as it appears in the thesis. However, any published article which is double peer-reviewed, especially in reputable journals, does establish the credibility of the research in that discipline literature. It is important that the student understands and is able to discuss all aspects of their thesis. Despite work being published, it is possible examiners may deem the work unworthy of awarding the degree, and responsibility for the quality of work (original, coherent and scientifically sound) presented for examination lies with the student, with support from their supervisory team, not with the peer-review process of publication(s).

Recommended Structure

While published papers may be presented in the thesis exactly as published, where the publisher permits, it is recommended that a variation of the published papers be included in the thesis (normally this would be a clean version of the accepted manuscript as a Word document). This facilitates a consistently formatted thesis as well as recognises that some publishers do permit PDF reproduction of some form of the paper for use in a doctoral thesis with publications. Regardless, the doctoral candidate should seek guidance of any legal and copyright issues through the UC Library, as well as gain permission to reproduce a work in the thesis (including a statement that such permission has been granted). Disciplines/programmes should have the

⁴ This form is available at: https://www.canterbury.ac.nz/postgraduate/masters-study/including-publications-in-a-thesis/

flexibility to choose the expected formatting of their students' theses (and may set this out as an appendix to these guidelines).

In those cases where a journal or other publication outlet does not allow exact reproduction of the paper in PDF format, it will be necessary to produce the paper in an alternative document format. If a research paper is still under consideration for publication the most recent version of it should be included in the thesis.

Suggested format of the thesis (may be adjusted by each Faculty to meet their norms):

- Chapter 1: Introduction and overview of the thesis. At the end of this chapter, the candidate should outline the structure of the thesis indicating the chapters that have been written as papers for peer-reviewed publication and their current status (published, in revision following reviewers' comments, in review, to be submitted).
- Chapter 2: Literature Review (optional)
- Chapter 3: Methodology (optional)
- Chapter 4-7: appropriate variations to publications or chapters comprising material submitted for publication or prepared for submission, thereby facilitating consistency in format.
- Chapter 8: Discussion and Conclusion (with limitations and future research)
- References, including those already included in the research publications chapters.
- Appendices: To include a statement where authorship contribution is confirmed by candidate and co-authors and *Co-Authorship Form*, as well as other details not included in chapters due to publication limitations.

Overall, a doctoral thesis that includes publications should read as a coherent document and, where feasible, employ consistent formatting and consecutive page numbering to facilitate the examiner's role. Published chapters may require a preamble and/or epilogue to ensure the clarity of their relationship to one another and to the broader thesis. Alternatively, short bridging chapters could be included to link published chapters together and with the broader thesis.

Other Documents

Co-authorship form - available at https://www.canterbury.ac.nz/postgraduate/masters-study/including-publications-in-a-thesis/

Checklist

Frequently asked questions



Including Publications in a Doctoral Thesis: Indicative Checklist (will vary by discipline):

Thesis sections that are required for both 'thesis by monograph' and 'thesis with publications'	Specific details relevant to Thesis with publications submissions
 Title page Abstract/Keywords Table of contents List of figures List of tables List of abbreviations/glossary Statement of original ownership Acknowledgements 	Two to six of the chapters below can be substituted by a published and/or submitted blind peer-reviewed paper. Each paper should be preceded by evidence of acceptance or status in the review process and a Statement of Contribution of Co-Authors for Thesis by Published Paper (if relevant). Peer-reviewed book chapters or additional journal articles can be added once the minimum of 2 journal articles has been achieved.
 9. Introduction* Addressing research problem; Significance/objectives of research; Providing account of research progress 	*A Doctoral Thesis with publications must include content that explains the thesis schema and links the publications to the dissertation.
 10. Literature review* Critical reviewing of relevant literature and other works; Providing a conceptual framework for the published work; 	* May be substituted with a published literature review.
 Identifying knowledge gaps. 11. Methods* Methodology; Research design; Participants; 	* May be substituted with an appropriate publication.

- Instruments;
- Procedure and timeline;
- Analysis;
- Ethics and limitations.

12. Results/Data analysis*

• Results relating to research questions (note: this section may include up to 3 chapters)

13. Discussion*

- Synthesis of ideas and main features;
- Significance of research findings;
- Critical issues:
- Problems encountered;
- Future directions of research

14. Conclusion

- Final statement that sums up the thesis as a whole;
- Reconnects to the introduction and research questions;
- Presents broad general conclusions emerging from the discussion.

15. Appendices

16. Bibliography

* May be substituted with an appropriate publication.

- * Discussion chapter/s may be substituted with one or more appropriate publications that pull together the thesis aims, methods and findings and which satisfy stated eligibility criteria.
- * May be substituted with an appropriate publication.

This should be comprehensive covering all papers including in the doctoral thesis with publications.



Including Publications within a Doctoral Thesis:

Frequently Asked Questions

When you decide to include publications within a doctoral thesis, is there a formal process for that, or is it simply an agreement that you make with your supervisor(s)?

• There is no formal process. It is an agreement between the student and their supervisor(s). However, it should be clear in the supervisory agreement, progress reports, confirmation documentation and to examiners if a doctoral thesis with publications format is intended/submitted. The *Co-authorship form(s)* will need to be completed as part of the submission of the thesis which attributes the contribution of the candidate and other authors for those chapters in the thesis that are publications or in the process of publication (in preparation/review/press). Examiners will be formally advised that it is a thesis with publications.

Which is of more value? A doctoral thesis that includes publications or a thesis by monograph?

• The answer will depend upon the discipline (such as expectations of publishers) and the quality of the publications. However, for the examination process, there is no difference. Some candidates may find it beneficial to have published papers in their thesis for subsequent job opportunities or for applications for a post-doctoral research position. An examiner will examine the thesis as a stand-alone contribution to the field and should not see a thesis by monograph as of lesser value if it meets all the criteria for doctoral studies.

How do you structure a doctoral thesis that includes publications (this may vary by discipline/Faculty)?

- It is similar to a thesis by monograph. Introduction chapter; followed by the literature review (if there is one, which may or may not be published), then one can have a methodology chapter which must be included, either as a chapter, or as a publication; and then the chapters which may or may not have been published already (in preparation/review/press/published). The last chapter is the discussion or synthesis where the whole thesis and research must be discussed and the novel contribution covered.
- Published chapters may require a preamble and/or epilogue to ensure the clarity of its relationship to the broader thesis. Alternatively, short bridging chapters could be included to link published chapters together and with the broader thesis.

Each published article typically describes literature, methods etc. So how do you avoid repetitive writing across the thesis chapters?

• This cannot be prevented, but the candidate should try to minimise where possible. Although a paper may have been published, it will still be 'examined' as part of the overall

thesis, and repetition will be considered by the examiners. It may be deemed appropriate to include description of a common methodology in an unpublished methods chapter, and amend publication chapters to refer to that section, instead of repeating information. That is at the discretion of the student, supervisory team and/or the faculty.

What would the impact be, if any, if a paper included in the thesis was subsequently rejected for publication in a journal?

• There will be no effect on the thesis or conferral of the qualification if a paper was subsequently rejected for publication. Furthermore, doctoral conferral is not contingent on re-submitting the paper for publication. Doctoral students would not need to disclose that a paper was rejected for publication.

How does the length of a New Zealand doctoral thesis that includes publications measure up against a doctorate (usually a thesis by monograph) in other countries?

- There is no major difference. Some US doctoral theses may be shorter than NZ theses as there is a considerable taught component to the degree. However, UK and Australian doctoral theses are of similar length to NZ. The same academic principles (e.g., original contribution to knowledge etc.) apply to both versions.
- Even if much of the content has been published in peer-review outlets the thesis must still pass as a doctorate (an original, coherent contribution as a body of knowledge to the discipline).

Is different work involved when including publications within a doctoral thesis compared to a thesis by monograph?

• Yes. One has to plan the chapters as papers, start writing the papers earlier in the doctorate journey and while writing the thesis, submit and revise previous chapters/ papers as per the reviewer's comments. Once a paper is submitted, control is in the hands of the journal editors. To have papers published or ready for submission, the doctoral research must lend itself to having data ready for analysis relatively early in the process, where a thesis by monograph structure is less dependent on results being obtained early.

Is there anything to prevent you from publishing while presenting your thesis by monograph form?

• No, not at all.

Is there a minimum or maximum number of publications per thesis?

There is normally a minimum of two publications, but no maximum, and this can vary according to discipline. Often only one chapter is published at the time of examination, others maybe under review, and some submitted. Generally, it is expected that there are between two and six chapters which are in published format preparation/review/press/published), which will vary based upon expectations of the relevant discipline(s). The overall thesis length cannot exceed UC's maximum word count of 100,000 words, excluding appendices.

Is it more challenging to produce a doctoral thesis that includes publications when conducting research from a mixed method or in particular disciplines?

• Potentially. This option is most likely to be useful in cases where a student already has some experience in producing articles or reports and therefore seeks to pursue a doctoral thesis with publications given familiarity with this genre, or when planned projects have a clear and predictable sequence of completion (allowing for publication preparation of

earlier studies). However, it may be more difficult to ensure a coherence of work around an overarching research question in these fields.

What are the rules around authorship? Does the doctoral candidate always have to be the lead author? What if the journal doesn't use a first author system, and instead lists them alphabetically?

• It is generally expected that the candidate is the first or corresponding author. The expectation is that authorship is determined based on the Vancouver Protocol and <u>UC</u> <u>Authorship Policy and Guidelines</u>. Students need to ensure the usual standard of authorship in their field is clearly communicated at the start of each published chapter and also in the *Co-Authorship form* for each publication. Regardless of format, the publication should reflect the doctoral candidate's work.

Does qualitative research sit well with publications?

• There is no reason why not. It will be important to select journals carefully and choose the most appropriate publication outlet for the work.

If your supervisor is new to a doctoral thesis that includes publications, who else can a student go to for advice (for both the student and the supervisor)?

- The Postgraduate Research Office, who can refer the student to staff whose students regularly do thesis with publications.
- Postgraduate Coordinators in departments/schools.

How are ethics managed and integrated into the doctoral thesis with publications process?

- There is no difference. If a researcher is working with people or animals, the ethics process needs to be addressed and discussed in the papers/ chapters.
- There are ethical considerations with regards to co-publishing that need to be considered (i.e. ensuring student work is appropriately recognised in publications).

When do you decide which journal to submit to? How do you make that decision?

- The journal should be discussed with the supervisors. Once one paper is submitted the candidate should start the next one or work on other aspects of the thesis, ensuring all parts that required external input are ready earlier than supporting sections.
- Ensure good quality publication outlets (well known, well ranked) to ensure strong reviews, maximise benefits to the student's career, and to enable impact.

What are some of the challenges associated with including publications in a Doctoral thesis? And what tips/advice is there for overcoming those challenges?

- Staying within a time frame and not extending the Doctorate while waiting for papers and reviews. Keep productive while waiting for an Editor's decision.
- Dealing with reviewer's comments can be challenging, but your supervisors should provide support, and this provides good preparation for examiners comments and independent research after completing the thesis.
- Formatting of the final thesis may be a challenge if the thesis is to be presented in the same font and format. In this case, figures and tables have to be renumbered and references consistently formatted because the thesis is a publication in its own right, and as such, should be a cohesive document.
- Ensuring the student retains a birds-eye view of the thesis as an overarching project that, with all parts working together, makes an original contribution to the field.

If in doubt, please contact your supervisor.