

# A Guideline to Including Publications within a Doctoral or Research Master's Thesis<sup>,</sup>

#### Preamble

The 'doctoral or research master's thesis including publications' is a hybrid thesis model which includes both published and unpublished material. It is an option for those doctoral or research master's<sup>1</sup> students seeking to develop skills in writing peer-reviewed publications during their thesis enrolment. Undertaking a doctoral or research master's thesis including 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 thesis may vary by Faculty<sup>2</sup> (and within Schools and Departments). Students may change their decision to include publications within their thesis and revert to a 'thesis monograph' format during their candidature. While this document is intended to provide guidance for including publications within a doctoral or research master's thesis, it also contains information supporting a thesis monograph. 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. It is important to note this guideline does not address a thesis *by* publications (i.e., a bound collection of published works), which is not offered by UC<sup>3</sup>.

The model of including publications within a thesis seeks to support the student 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 team. UC is strongly supportive of any approach which improves the credibility and employability of UC's research graduates, recognising that peer-reviewed publications are an important element of developing a research career.

<sup>&</sup>lt;sup>\*</sup>Acknowledgment is made to Massey University, Queensland University of Technology, and the University of Waikato upon which much of these guidelines are based.

<sup>&</sup>lt;sup>1</sup> A research master's thesis that comes within these guidelines must have a value of 90 credit points or more. <sup>2</sup> Faculty as used in this document, is inclusive of the UC Business School.

<sup>&</sup>lt;sup>3</sup> While the *thesis by publication* also provides a mechanism for doctoral and research master's students seeking to develop skills in writing papers for submission to peer reviewed journals during their doctoral or research master's enrolment, it differs in that the student authors or co-authors multiple articles that are then bound together to constitute the thesis. Each chapter will therefore appear as a standalone research article and the thesis will not usually include introduction or conclusion chapters. A *thesis which includes publications* must include these framing chapters, and individual chapters might also include a short preamble providing clarity of the relationship to the broader thesis and research questions.

#### Requirements

There is no formal process for including publications within a thesis; initially it requires only an informal agreement between the student and their supervisory team. The model requires a doctoral student to present a thesis comprising typically between two and six research papers, and a research master's student to present a thesis comprising typically between one and three research papers (although this may very between Faculties). Some of the papers may 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. The thesis may also include some chapters that are not destined for publication.

The research student, 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 research project. That is, they cannot originate from a range of unrelated projects.

The data analysis must have been conducted and the research papers written during the period of the student's enrolment; students cannot present work conducted prior to enrolment as part of their thesis. Data may have been collected prior to commencing the 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 that the inclusion of these published and 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, word limits which are part of the formal publication process 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 student 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.<sup>4</sup> There may be some variation 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 Graduate Research Coordinator for the department/school or the person chairing the confirmation.

At the time of submitting a thesis for examination, a Co-Authorship Statement<sup>5</sup> must be submitted if the thesis includes co-authored publications. 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. As a preamble to each chapter representing a co-authored research paper or publication, the student should also include a brief 'Statement of Contribution' acknowledging the publication from which the chapter is drawn.

Where more than one student has contributed to a publication, the resulting published material may be submitted for examination once only and by one student. Before a student may use a publication in these circumstances, they must get all contributing authors to agree to this in writing 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 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 Graduate Research Coordinator. Agreements should be lodged with Te Kura Tāura | UC Graduate School.

# Examination of a Doctoral or Research Master's 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 are approached by the supervisor to request they act as an examiner. Examiners are at liberty to disagree with the findings in a published paper and to require revision to the work as it appears in the thesis or take this into account in determining their grade for a research master's thesis. However, any published article which is double peer-reviewed, especially in reputable journals, does establish the credibility of the research in that discipline's 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 presented for examination (original, coherent, and scientifically sound) lies

<sup>&</sup>lt;sup>4</sup> 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.

<sup>&</sup>lt;sup>5</sup> This is part of the Thesis Submission and Use Form which must be submitted alongside a thesis for examination. This form can be found <u>here</u>.

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 that can then be incorporated into the thesis. This facilitates a consistently formatted thesis submitted as a PDF document (concurrently recognising that some publishers do permit PDF reproduction of some form of the paper for use in a thesis including publications). Regardless, the student 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 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 a pre-publication format to ensure the thesis can be submitted as a single PDF document. If a research paper is still under consideration for publication the most recent version of it should be included in the thesis.

A suggested format for theses including publications can be found in Appendix A.

Overall, a 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.

# Appendix A: Including Publications in a Doctoral or Research Master's Thesis

#### Indicative structure (may vary by discipline)

Thesis sections that are required for both a thesis monograph and a thesis which includes publications	Specific details relevant to both a thesis monograph and a thesis which includes publications
<ul> <li>a) Title page</li> <li>b) Abstract/Keywords</li> <li>c) Table of contents</li> <li>d) List of figures</li> <li>e) List of tables</li> <li>f) List of abbreviations/glossary</li> <li>g) Statement of original ownership</li> <li>h) Acknowledgements</li> </ul>	Two to six of the chapters below (for doctoral theses) and one to three (for research master's theses) 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.
<ol> <li>Introduction</li> <li>Addressing research problem;</li> <li>Significance/objectives of research;</li> <li>Providing account of research progress</li> </ol>	A research thesis that includes publications must include content that explains the thesis schema and links the publications to the thesis. At the end of this chapter, the student 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).
<ul> <li>2. Literature review</li> <li>Critical reviewing of relevant literature and other works;</li> <li>Providing a conceptual framework for the published work;</li> <li>Identifying knowledge gaps.</li> </ul>	May be substituted with a published literature review.
<ul> <li>3. Methods</li> <li>Methodology;</li> <li>Research design;</li> <li>Participants;</li> <li>Instruments;</li> <li>Procedure and timeline;</li> <li>Analysis;</li> <li>Ethics and limitations.</li> </ul>	May be substituted with an appropriate publication.

•	<b>4. Results/Data analysis</b> Results relating to research questions (note: this section may include up to 3 chapters)	May be substituted with an appropriate publication.
• • •	<ul> <li><b>5. Discussion</b></li> <li>Synthesis of ideas and key features;</li> <li>Significance of research findings;</li> <li>Critical issues;</li> <li>Problems encountered;</li> <li>Future directions of research</li> </ul>	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.
•	<ul> <li>6. Conclusion</li> <li>Final statement that sums up the thesis as a whole;</li> <li>Reconnects to the introduction and research questions;</li> <li>Presents broad general conclusions emerging from the discussion, including limitations and future research.</li> </ul>	A research thesis that includes publications must include content that explains the thesis schema and links the publications to the thesis.
	7. Bibliography/references	This should be comprehensive, covering all publications included in the thesis as well as any additional references in the surrounding chapters.
	8. Appendices	These may include other details not included within chapters due to publication requirements (e.g., word limits or formatting restrictions).

# Appendix B: Including Publications within a Doctoral or Research Master's Thesis Frequently Asked Questions

When a student decide to include publications within a thesis, is there a formal process for that, or is it simply an agreement that is made with the 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 thesis including publications format is intended/submitted. A *Co-authorship Statement* will need to be completed for each publication included in the thesis. This statement attributes the contribution of the student and other authors for those chapters in the thesis that are publications or in the process of publication (in preparation/review/press). This statement is part of the Thesis Submission and Use Form that must be submitted alongside a thesis for examination. Supervisors should advise examiners that the work is a thesis including publications at the time that they approach them to act as examiners.

#### Which is of more value? A thesis that includes publications or a traditional thesis monograph?

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

#### What is the structure for a thesis that includes publications?

- This may vary by discipline/Faculty
- It is similar to a thesis monograph. Please see Appendix A for a suggested structure.
- Published chapter(s) 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 chapter(s) together and with the broader thesis.

### Each published article typically describes literature, methods etc., so how can repetitive writing across the thesis chapters be avoided?

 This cannot be prevented, but the student 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 examination or conferral of the qualification if a paper was subsequently rejected for publication. Furthermore, degree conferral is not contingent on re-submitting the paper for publication. Students would not need to disclose that a paper was rejected for publication.

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

- There is no major difference. Some US theses may be shorter than NZ theses as there is a considerable taught component to the degree. However, UK and Australian theses are of similar length to NZ.
- Even if much of the content has been published in peer-review outlets the thesis must still meet the examination criteria for a doctorate or research master's (e.g., an original, coherent contribution as a body of knowledge to the discipline, etc.).
- The regulations for doctoral degrees at UC specify the maximum word count of any thesis regardless of whether this includes publications. Master's degree regulations often do not specify a maximum word count, but the student should check with their supervisor what the expectations are for their discipline.

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

• Yes. One has to plan the chapters as papers, start writing the papers earlier in the research 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 research must lend itself to having data ready for analysis relatively early in the process, where a thesis monograph structure is less dependent on results being obtained early.

### *Is there anything to prevent a student from publishing while presenting a thesis in monograph form?*

No, not at all. Publishing work related to a thesis (but not including this as part of the final thesis monograph) is permitted and encouraged. Consideration should be given to the amount of time and effort that may need to go towards publications that will not be included in a thesis, as this will take time away from preparing the thesis monograph. It may be suitable to structure publications in such a way that they can easily be incorporated into a thesis if the approach changes, and this should be discussed with supervisors as early as possible.

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

• There is normally a minimum of two publications for a doctorate and one for a research master's, but no maximum, and this can vary according to discipline. Often only one chapter is published at the time of examination, others may be under review, and some submitted. For a research master's it may be the case that no chapters have been

published at the time the thesis is submitted for examination but at least one chapter should be submitted/under review with the view of publication. Generally, it is expected that there are between two and six chapters (doctorate) or one and three chapters (research master's) which are in published format (in preparation/review/press/published), which will vary based upon expectations of the relevant discipline(s). The overall thesis length cannot exceed the maximum specified in the regulations for the degree (for a doctoral thesis), or the relevant Faculty's maximum word count (for a research master's thesis), excluding appendices.

*Is it more challenging to produce a 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 thesis including publications given familiarity with this format, 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 student always have to be the lead author? What if the journal does not use a first author system, and instead lists them alphabetically?

It is generally expected that the student is the first or corresponding author. The expectation is that authorship is determined based on the <u>Vancouver Protocol</u> 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 Statement* for each publication. Regardless of format, the publication should consist primarily of the student's work.

#### Does qualitative research sit well with publications?

• Yes. It is important to select journals carefully and choose the most appropriate publication outlet for the work.

### If a supervisor is unfamiliar with the format of a thesis that includes publications, who else can a student go to for advice (for both the student and the supervisor)?

- Te Kura Tāura | UC Graduate School, who can refer the student to staff whose students regularly include publications in their thesis.
- Graduate Research Coordinators in departments/schools.
- UC Library Research Support and Subject Librarians.

#### How are ethics managed and integrated into the thesis including publications process?

- There is no difference. If a researcher is working with people or animals, or their research will impact Māori communities, the appropriate 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 does a student need to decide which journal to submit to? How do they make that decision?

- Suitable journals should be discussed with the supervisors. Once one paper is submitted the student 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.
- Choose good quality publication outlets (well known, well ranked) to ensure strong reviews, maximise benefits to the student's career, and to enable impact.
- UC offers the UC Research Student Publication Prize, which is a monetary prize for student research published in eligible Scopus-indexed journals and other Scopus-indexed publications. Eligibility for this prize may be a consideration when selecting which journals to submit to. Further information including eligibility criteria can be found <u>here</u>.

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

- Staying within a time frame and not extending the doctorate or research master's while waiting for papers and reviews. Keep productive while waiting for an editor's decision, and remember that intended publications can still be included in a thesis even if they are still under review or about to be submitted.
- Dealing with reviewer's comments can be challenging, but supervisors should provide support, and this provides good preparation for the examination process 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 must be renumbered and references consistently formatted because the thesis is a publication in its own right, and as such, should be a cohesive document. The UC Library has formatting tips available on their website.
- 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.

#### What languages can a thesis be written in?

• The thesis needs be in one approved language only as per degree regulations, either English or te reo Māori. If any part is in a different language, then a translation would need to be included.

Any concerns should be discussed with the supervisory team or Te Kura Tāura.