Thesis as Series of Papers

Graduate Research School 2016
There is no worldwide agreement on PhD or Masters thesis format

Pressure to publish is increasing Thesis as a Series of papers (TASP) formatting of theses in higher research degrees worldwide – Australia and some European countries are leading the way – TASP is very uncommon in the US and Canada

There is wide variation in Australian universities approach to rules regarding TASP

Read more [Completing a PhD by publication: a review of Australian policy and implications for practice](#)
Alternate Names

- Thesis as a Series of Papers
- Thesis as a Collection of Papers
- Thesis by Papers
- Thesis by Publication
- Integrated Format
- Hybrid Thesis
- Continental Model

TASP should not be confused with Higher Doctorates (also known at other universities as Doctorates by Prior Publication). These are honorary degrees awarded towards the end of a career as recognition of a lifetime of work in a field.

At UWA there is not a separate set of TASP rules or examination criteria.

Some universities in Australia have a separate set of rules and guidelines for TASP that stipulate that the thesis needs to contain a set number of published papers.

This is not the case at UWA. The UWA rules provide candidates with the freedom to format their thesis in whatever way is most appropriate for the project and the discipline – and any number of papers can be included at any stage of publication.

UWA candidates can choose to format their thesis as a traditional monograph, TASP, or a combination of more traditional research chapters and papers.
Content and format of a thesis

- A thesis may be presented in the form of a typescript, a published book or a paper or series of papers which have been published in refereed journals.
- A typescript may be structured in any of a range of ways, including, but not limited to: a monograph; a paper or series of papers suitable for publication in scholarly journals; or a combination of published and unpublished work.
- Work that has been published may be presented in the format in which it was published or with the formatting adjusted for consistency with the rest of the typescript.
- If any of the items submitted in terms of (1) have been jointly authored—
  - (a) the work done by the student must be clearly indicated and certified as such by the co-authors;
  - (b) the co-authors must certify that they agree to the inclusion in the thesis of work of which they are joint authors.
- Work of which the student is sole or joint author may be submitted as an appendix in support of the thesis, but, in the case of joint authorship, the work done by the student must be clearly indicated.
- If a series of papers is presented, there must be a full explanatory introduction and a review article at the end to link the separate papers and to place them in the context of the established body of knowledge.
- If detailed data and descriptions of methods are not otherwise given, they must be included as appendices.
UWA Thesis Examination Criteria


<table>
<thead>
<tr>
<th>SCORE</th>
<th>CRITERIA FOR THE AWARD OF DOCTOR OF PHILOSOPHY - THESIS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The thesis as a whole is a substantial and original contribution to knowledge of the subject with which it deals.</td>
</tr>
<tr>
<td></td>
<td>The student shows familiarity with, and understanding of, the relevant literature.</td>
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<tr>
<td></td>
<td>The thesis provides a sufficiently comprehensive study of the topic.</td>
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<tr>
<td></td>
<td>The techniques adopted are appropriate to the subject matter and are properly applied.</td>
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<tr>
<td></td>
<td>The results are suitably set out, and accompanied by adequate exposition.</td>
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<tr>
<td></td>
<td>The quality of English and general presentation are of a standard for publication.</td>
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**Merit Criteria Scores Key**

<table>
<thead>
<tr>
<th>SCORE</th>
<th>MERIT CRITERIA</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Exceptional</td>
<td>Of the highest merit. At the forefront of international PhDs in the field. Fewer than 5% of students worldwide would fall in this band.</td>
</tr>
<tr>
<td>2</td>
<td>Excellent</td>
<td>Strongly competitive at international levels. Fewer than 20% of students would fall in this band.</td>
</tr>
<tr>
<td>3</td>
<td>Very good</td>
<td>An interesting, sound and compelling thesis. Approximately 30% of students would fall in this band.</td>
</tr>
<tr>
<td>4</td>
<td>Good</td>
<td>A sound thesis, but lacks a compelling element in some respect. Approximately 30% of students would fall in this band.</td>
</tr>
<tr>
<td>5</td>
<td>Fair</td>
<td>The thesis has potential, but requires major revisions. Approximately 20% of students would score in this band.</td>
</tr>
<tr>
<td>6</td>
<td>Flawed</td>
<td>The thesis does not meet the required standard for this criterion</td>
</tr>
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What are the Advantages of Writing a TASP?

Writing efficiency

- ‘Write as you go’ approach can reduce the time required at the end of candidature to compile the thesis
- Can be an efficient use of text – rather than writing a thesis and then separately writing papers, the papers are written and reproduced in the thesis

Thesis improvements

- Peer review process provides feedback and can improve quality of research / writing
- Provides evidence the work is of ‘publishable standard’ which is one of the thesis examination criteria (See Examiners’ Recommendation Form – Criteria for Award)
What are the Advantages of TASP for my Career?

Career progression

- Creates track record of publications during candidature which are often required for competitive post doctoral scholarships applications

- Research is more accessible as a published paper than a thesis (See The declining scientific impact of theses)

- Mentored in publication and responding to peer review by supervisors
Examiner(s) may not be familiar with, or supportive of, TASP. This may be particularly true in the arts, humanities and social science disciplines. In this case:

- Carefully consider the expectations of the discipline and, irrespective of how the thesis will be put together, try to meet these expectations.

- Indicate TASP is allowable according to UWA Rules. For example, in the thesis Introduction state “This thesis is in agreement with The University of Western Australia Doctor of Philosophy Rules for the content and format of a thesis (39-45) and is presented as a series of papers.”
Points to Consider

Publication Issues

- The peer review process can be time-consuming. Although papers do not need to be published to be included with a TASP, most TASP contain at least 1 published paper.

- See [Does it take too long to publish research?](https://example.com)

- Some journals may not publish a paper even though the research presented is high quality. These papers may be presented in the thesis as manuscripts.

- See [Prose, Psychopaths and Persistence: Personal Perspectives on Publishing](https://example.com)
Points to Consider

Not all projects are suited to TASP format

- Some projects do not divide well into publishable units and are better suited to a more traditional format

- Negative results are often not publishable but can be incorporated into a thesis

- This may be changing. See [Why it's time to publish research “failures” - Publishing bias favors positive results; now there's a movement to change that](#)
When formatting a thesis, the UWA Rules allow inclusion of material in a thesis that has been:

- Published
- Accepted for publication
- Submitted for publication
- Planned for publication (prepared as manuscript)
- Unpublished

(and all combinations of the above in whatever format is most appropriate for the discipline and project)
At UWA, inclusion of Papers (published or manuscripts) is more common in the Science, Technology, Engineering & Maths disciplines (STEM) than the Humanities, Arts and Social Science (HASS) disciplines.

STEM (N=203):
- 87% Published / Submitted / Manuscripts for Submission
- 13% No Publications

HASS (N=65):
- 59% Published / Submitted / Manuscripts for Submission
- 41% No Publications

Data based on study of all UWA theses classified in 2012.
When the 2012 theses are normalised for numbers across faculties, it can be seen that the inclusion of multi-authored publications is very common in the STEM areas at UWA.

Data based on study of all UWA theses classified in 2012
At UWA, most of the published material included in theses are research papers.
Most candidates are first authors on the papers included within theses.

Data based on study of all UWA theses classified in 2012.
Many theses include published material but are not always formatted as TASP.

Some have a mix of traditional research chapters and chapters formatted as papers.

Some are traditional monographs with some of the research published in a different form (‘published in parallel’).

Data based on study of all UWA theses classified in 2012
At UWA there is no recommended number of papers for a thesis as the ‘publishable research unit’ varies greatly between disciplines, and sometimes even between journals within disciplines.
As a rough guide, when theses are formatted as TASP at UWA, they typically include 3-5 research papers.

Data based on study of all UWA theses classified in 2012
Introduction and Discussion

The UWA rules state that “If a series of papers is presented, there must be a full explanatory introduction (introduction chapter) and a review article at the end (discussion chapter) to link the separate papers and to place them in the context of the established body of knowledge.”

– general introduction sets out the context of the thesis and explains the organisation and structure of the thesis
– general discussion which draws together the main findings of the thesis in the context of previous research, and establishes the significance of the work

Many examiners will be looking for more than a collection of individual papers – they look for a "story" in which each chapter is an integral part. The introduction and discussion assist in establishing the thesis as a coherent whole.
Where papers included in your thesis have multiple authors it is important that you indicate very clearly which portions of the paper/s are your work and which are the work of your co-authors.

There is a Declaration Form for this purpose:

3. This thesis contains published work and/or work prepared for publication, some of which has been co-authored. The bibliographical details of the work and where it appears in the thesis are outlined below. The student must attach to this declaration a statement for each publication that clarifies the contribution of the student to the work. This may be in the form of a description of the precise contributions of the student to the published work and/or a statement of percent contribution by the student. This statement must be signed by all authors. If signatures from all the authors cannot be obtained, the statement detailing the student’s contribution to the published work must be signed by the coordinating supervisor.

Candidates are required to obtain the signed consent of co-authors to include the work in the thesis. If this is not possible, the coordinating supervisor can sign on their behalf.

Particular care should be taken in preparing the thesis declaration when the candidate is not the lead author or the candidate and another doctoral student are co-authors on a paper that will be included in both theses.
Bienen, B. *Three dimensional physical and numerical modelling of jack-up structures on sand*. 2007.

In accordance with the University of Western Australia’s regulations regarding Research Higher Degrees, this thesis is presented as a series of journal papers. The contribution of the candidate and co-author(s) for the papers comprising chapters 3, 4, 5, 6 and 7 are hereby set forth.

**Paper 1**

The paper presented in Chapter 3 is first authored by the candidate and co-authored by ... and is published as


The candidate planned and carried out the experimental program this paper is based on under the supervision of ....The experimental apparatus was developed by Dr ... The candidate analysed the experimental results and wrote the paper, except the sections ‘Introduction’ and ‘Equipment’ which were written by .....
Reformatting, additional text and referencing

It is common for TASP to contain chapters in addition to the introduction, papers and discussion. ~83% theses have a literature review chapter, ~30% have a separate methods chapter, and ~18% add a preamble or introduction to each paper.

According to the UWA Rules, Work that has been published may be presented in the format in which it was published OR with the formatting adjusted for consistency with the rest of the typescript. Candidates need to consider when choosing between these options the use of consistent fonts, consistent referencing style and consecutive numbering of headings, titles and figures.

~58% of TASP have a single consolidated reference list, ~35% have reference lists at the end of each chapter, ~9% do both
Points to Consider

• The audience for your publications may vary from the audience for your thesis – the examiners

• To avoid criticism that the thesis may be disjointed, incomplete or repetitive, candidates can consider:
  – Adding linking text to improve the coherence of the thesis
  – Strengthening the background, rationale, justification of methods
  – Ensuring adequate data is shown (possibly in an appendix)
  – Reducing redundancy in introduction and/or methods by possibly extracting introduction and/or methods from the papers and consolidating them in a stand alone chapter

Note, however, that examiners’ criticisms about omissions, redundancy/repetition & lack of cohesion are also common in theses without published work – this suggests these criticisms are not particular to TASP
A review of examiners reports at UWA shows they are very supportive of the inclusion of publication in all theses, and the inclusion of published work improves examination outcomes.
What do examiners say about theses containing published work?

<table>
<thead>
<tr>
<th>Comment</th>
<th>Frequency of theses with at least one comment about published work</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Theses with publications</td>
</tr>
<tr>
<td>Well structured / written / presented</td>
<td>89%</td>
</tr>
<tr>
<td>Pleasure to read / easy to read</td>
<td>30%</td>
</tr>
<tr>
<td>Publication is pleasing</td>
<td>44%</td>
</tr>
</tbody>
</table>

- It was excellent to see that aspects of this thesis have already been published and there remains potential for further publication. (P078)

- It is pleasing that the candidate has published much of this work in international journals. (P042)

- The published / accepted scientific publications represent the icing on this noteworthy body of work. (P018)
What do examiners say about theses containing little published work?

I hope and trust the candidate will now seek to publish one or more articles from this thesis with leading journals. (P060)

The apparent lack of publications (journals and conference papers) is of particular concern. (P054)

I note that the candidate has certified that she has no publications in preparation. Is there a reason for this? It is to be expected that by the end of a PhD that a publication should be in preparation as a minimum. (P061)

<table>
<thead>
<tr>
<th>Comment</th>
<th>Frequency of theses with at least one comment about lack of published work</th>
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<tbody>
<tr>
<td>Theses without publications</td>
<td></td>
</tr>
<tr>
<td>Anticipating / encouraging publication</td>
<td>98%</td>
</tr>
<tr>
<td>Concerned by lack of publication</td>
<td>10%</td>
</tr>
</tbody>
</table>
What do examiners say about TASP?

<table>
<thead>
<tr>
<th>Comment</th>
<th>Frequency of theses with at least one comment about TASP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive comments</td>
<td>Theses as Series Papers</td>
</tr>
<tr>
<td></td>
<td>29%</td>
</tr>
</tbody>
</table>

- It is good to see the chapters written with publication in mind such that the work is in 'ready to submit' form. (P051)

- This certainly provides a more readable format compared with that of a traditionally-prepared thesis. (P014)
What do examiners say about coherence?

There is a strong impression that this chapter was bolted on rather than being an integral part of the thesis. (P051)

The thesis construction allowed for quite specific topics to be investigated in separate chapters while at the same time showing a clear over-riding theme throughout. (P100)

<table>
<thead>
<tr>
<th>Comments</th>
<th>Frequency of theses with at least one comment about coherence</th>
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<tbody>
<tr>
<td></td>
<td>Theses as Series Papers</td>
</tr>
<tr>
<td>Lacks coherence</td>
<td>11%</td>
</tr>
</tbody>
</table>
What do examiners say about unnecessary repetition?

This thesis builds on a series of studies from which 5 papers have been written. As a result it is very repetitive in style and content. (P018)

The thesis is spoilt by some poor quality and repetitious writing. The apparent repetitious characteristic is partly a consequence of the "thesis by publication" format where the same material, is reproduced in each introduction. I do believe that more care should have been taken to ensure that the overlapping material was presented in a more interesting and varied manner. (P090)

The materials and methods sections repeat data collecting/analysis procedures…Merger of several chapters may be desirable. (P051)

<table>
<thead>
<tr>
<th>Comments</th>
<th>Theses as Series Papers</th>
<th>Other theses formats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repetition in introduction &amp; methods</td>
<td>26%</td>
<td>29%</td>
</tr>
</tbody>
</table>
What do examiners say about omissions?

<table>
<thead>
<tr>
<th>Comments</th>
<th>Frequency of theses with at least one comment about omissions</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Theses as Series Papers</td>
</tr>
<tr>
<td>Omissions in rationale, literature review, methods and/or discussion</td>
<td>68%</td>
</tr>
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</table>

- I was of the opinion that there is clearly a good quality of research in the published papers, but that the standard of the thesis is lowered by the lack of depth and thought put into the introduction and review chapter. (P024)

- Due to the presentation of the thesis as 5 papers there is limited description of the proposed analysis in the introduction. Although the thesis states that more detail is presented in the separate chapters this is also very limited. Whilst this is acceptable for a publication, somewhat more detail is required for a PhD thesis .... the reader is unable to gauge the level of understanding of the candidate - one aspect of the PhD process. (P018)

- 9 chapters: introduction, literature review, 5 research papers, general discussion & references

- Additional literature review chapter to supplement literature reviewed in introduction to papers

- Papers presented as they appear in print (including reference lists)

- Consolidated reference list
Aimee Silla. 2012. Development and application of assisted reproductive technologies (ART) for the conservation of anuran amphibians. Animal Biology

- Seven chapters: introduction, 5 research papers, general discussion

- Papers reformatted to provide consistency of style.

- 9 chapters: introduction, literature review, methodology, 3 research papers, general discussion, appendices, references
- Additional literature review chapter
- Additional methods chapter (methods removed from research chapters and consolidated).
- Papers reformatted / revised to varying degrees.
- Consolidated reference list.
- Published papers not reproduced in thesis as they appear in print but listed in declaration & appendix.

- 9 chapters: introduction, methodologies & literature review, 3 research papers, general discussion, conclusions, bibliography

- Additional lit review chapter
- Additional methods chapter to supplement methods in papers (& justify choice of methods).
- Papers reformatted to provide consistency of style.
- Consolidated reference list (and reference list for each chapter)
- Galleys of published papers included in appendices.
Copyright

The UWA Library can help questions about copyright issues in relation to TASP. There are a number of online resources and you can contact the eResearch Support Unit.

Information Services: Copyright and Higher Degree Theses
http://guides.is.uwa.edu.au/HDRtheses_copyright

Information Services: Open Access Toolkit
http://www.library.uwa.edu.au/research/open-access-toolkit

eResearch Support
http://www.library.uwa.edu.au/research
Please contact one of the GEOs if you have any questions.

Dr Krys Haq  
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