

WRITING A THESIS AS A COLLECTION OF PAPERS

It is becoming increasingly common for doctoral students, particularly those in science disciplines, to write their thesis as a collection of papers. Indeed, a number of Schools now recommend this as the preferred way to structure a thesis.

This document sets out some of the advantages for students of adopting this approach and also provides some general guidance on how to structure the thesis. Before this, it is important to distinguish between writing a thesis as a collection of papers, the former PhD by Publication, and the new PhD by Published Works.

PhD by Publication: This programme has now been withdrawn and this title should no longer be used.

PhD by Published Works: This is a new programme, which is open to graduates of at least three years standing who have a body of published work that they want to incorporate into a thesis. The key point is that the published work has been produced *before* the candidate registers with the University. Further guidelines can be found at: <http://www.reading.ac.uk/web/FILES/graduateschool/phdpublishedworks.pdf>

PhD by Thesis: This is the traditional PhD programme that the vast majority of doctoral students take. Within this programme, students can opt to structure their PhD as a collection of papers rather than as a series of linked chapters. In both cases, the work described in the thesis has primarily been undertaken whilst the student has been registered for his or her PhD programme.

Advantages of writing a thesis as a collection of papers

This format offers a number of advantages for students:

- The research is written up as the PhD proceeds, reducing the need for a long period of writing up at the end of the programme. Students adopting this approach often submit their thesis within a shorter time period than those using the traditional structure.
- Students get more opportunity to improve their writing skills throughout their programme. They also learn important skills such as selecting, and writing for, target journals and responding to reviewers' comments.
- Students graduate with published papers on their CV, adding to their competitive advantage in the job market.

- The external examiner is presented with work, much of which has already been peer reviewed as being above a certain quality standard.

Having set out these advantages, it is important to note that this structure may not be appropriate for projects where publishable results come towards the end of the three year period. Students should discuss the appropriate structure to adopt with their supervisor early in their PhD programme.

General guidelines for writing a thesis as a collection of papers

The thesis must conform to the Rules for Submission of Theses for Higher Degrees in terms of the format, word length, abstract, declaration of authorship, and electronic deposition.

<https://www.reading.ac.uk/web/FILES/graduateschool/pqrrulesforthesessubmission.pdf>

Structure

A typical format might be as follows:

- Abstract: As outlined in the Rules for Submission of Theses for Higher Degrees.
- Chapter 1: Introduction - A concise introduction to the aims of the research, the key research questions being addressed, and how these are addressed in the papers which are included in the thesis.
- Chapter 2: Literature Review - An extensive review of the key background literature and how this leads into the PhD project. The Introduction and Literature Review chapters could be merged into a single chapter, particularly when a significant amount of literature is reviewed in the papers that are included in the thesis.
- Chapters 3: The normal expectation is that there would be at least three papers included, but the exact number will be determined by the scale of the papers, in terms of the amount and significance of the research included, and the nature of the discipline. Students should seek supervisors' advice in relation to this.
- Each paper would normally comprise a separate chapter. Papers may be published, in revision, or submitted. However, it is preferable for at least one to be published or accepted for publication. Should there be any need for additional discussion of the material in the papers this can be included at the end of the relevant chapter or included in the final chapter.
- Final Chapter: Conclusions and Discussion. This should summarise and critically discuss the main findings of the research, consider the theoretical and practical implications of the work and how it advances the field, and set out suggestions for future work.

Additional points

- It is essential that the overall thesis forms a cohesive body of work.
- The research described in the papers should primarily have been undertaken during the student's registration period. Work that was completed or published before the start of the PhD programme should not be included.
- The status of each paper included in the thesis (i.e. in terms of published, accepted, in review, etc.) should be made clear in the thesis.
- The student should normally be the lead author of the paper, and certainly a significant author in that they must have made a substantial contribution to any jointly authored

paper. The student should include in the thesis a statement outlining his or her specific contribution to any jointly authored paper that is included, indicating what components of the work were carried out by the candidate and what components were carried out by other authors, and indicating the estimated percentage contribution made by the candidate. This statement should be approved by the supervisor before being included in the thesis.

- In situations where a paper includes the work of more than one research student and both students are authors on the paper, then both students can submit the paper as part of their thesis provided that they have both made a substantial individual contribution and that they indicate in the above statement what their explicit contribution was.

Example theses

You should ask in your School / Department if there are any example theses available of previous students who have adopted this new structure. If not, Wageningen have a free online thesis library at: http://library.wur.nl/WebQuery/wda?dissertatie/nummer=*.

Points for Examiners to consider

The role for examiners may be different where a thesis is presented as a collection of papers, particularly if all, or much, of the work has been published or accepted for publication. In this case, the examiners may focus more on:

- judging whether the thesis components constitute a cohesive piece of work;
- judging whether the amount of work constitutes a sufficient body of original work to merit the award of a PhD;
- judging whether the student has made a sufficient intellectual contribution to each publication;
- determining that the student understands their work in the context of the wider field and has explained this context adequately;
- determining that the student understand the implications of their work for future research and has explained these implications adequately.

In cases where the examiner is unfamiliar with the practice of thesis as a collection of papers, it is the role of the School / Department Director of Postgraduate Studies to clarify the situation.

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Dean of Postgraduate Research Studies

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