

Everything you wanted to know about
Thesis & Dissertations
but were afraid to ask!

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Part I

- Writing a Thesis/Dissertation
 - Definition
 - Getting started
 - Contents
- Later - Part II
 - The Examiner's/Committee's View

What is a Thesis?

- An argument to support a hypothesis
- An original piece of research
- The product of an apprenticeship
- One of the largest piece of works you'll ever do (most likely)
- Something that could be published
 - At least one paper in a journal/conference
 - Not typically the whole thing

Definition

A thesis for the Ph.D. (dissertation) must for a distinctive contribution to the knowledge of the subject and afford evidence of originality shown by the discovery of new facts and/or by the exercise of independent critical power.

Getting Started

- Start today! Tomorrow is too late!
 - Decide your title
 - Write your title page
 - Start your document
 - Look at other theses in your area
 - Plan your argument
- You can always change things later
 - But you can't change anything unless you have something to change

Plan Your Argument

A Sentence on	Example
Introduction	The success of a software development project depends on capturing stakeholders' needs in a specification ...
Problem	However, specification often reflect the analyst's own bias, rather than the inputs of many different stakeholders ...
What's in the literature	Current methods described in the literature fail to address identification and integration of multiple views
Method	By treating the specification activity as a dialogue between stakeholders, we can model each perspective separately
Solution	We provide a set of tools for exploring disagreement between perspectives, and use these tools as the basis for a computer supported negotiation process
Results	This approach is shown to significantly improve traceability and validity of specifications and overall stakeholder satisfaction

Another Example

A Sentence on	Example
Introduction	A PhD is examined by submission of a thesis
Problem	Many students fail to complete their thesis within four-years
What in the literature	Empirical studies indicate that late submission is highly correlated with delaying the start of the write-up
Method	A model of PhD study that encourages an early start to the thesis writing task is clearly desirable
Solution	Such a model encourages the student to plan a structure for the thesis and collect material for each chapter throughout their study
Results	Application of this model dramatically improves submission rates

Plan Your Thesis

- Convert the argument into a chapter outline
 - At least one chapter per sentence
 - Maybe more than one sentence for some
- Start a binder or folder with a division for each chapter
 - Collect material in this binder
 - Set out clearly what each chapter should say
- Don't be afraid to change your mind
 - As you write the thesis, your ideas will evolve
 - Don't wait for them to stop evolving – it's much easier to change an outline that you've written down than one you haven't

Contents

- **Title** – conveys a message
- **Abstract** – for the librarian and announcement
- **Contents listing** – shows that everything is there
- **Acknowledgements** –
- **Introduction** – “I am doing the following”
- **Review of Previous work** – show you know the subject
- **Philosophy of the approach** – show you can pick out an important problem
- **Plan of Attack** – show you approached the problem in a systematic manner
- **Description of the work** – details, so that others can follow what you did
- **Critical analysis of the results** – show you understand the limitations
- **Future work** – show you know what's missing
- **Conclusions** – repetition of the intro, but with reference to detail
- **References** – cover the field; examiners will look for key dereferences
- **Appendices** – the gruesome details that would clutter the description

Say Everything 3 times

- In the thesis as a whole:
 - What the thesis will say (introduction)
 - Details of the work (body)
 - What the thesis said (conclusion)
- Within each chapter
 - What the chapter says (signposting)
 - The details (body)
 - What the chapter said (summary)
- Within each paragraph
 - Each paragraph describes a single idea
 - The first sentence introduces the idea (linking it with the previous paragraph)
 - The last sentence concludes the idea (linking it with the next paragraph)

Bibliography

- Keep a database of complete references
 - Use a consistent citation style
 - Use a tool (Endnote, Bibtex, etc.)
 - Attention to detail is important (correct spellings!)
 - Keep complete references (page numbers, volume, location and dates for proceedings, etc.)
- Find out what the local rules are for citation style
 - If there are no rules use [Author Year] or [Author1, Author2, Author3, Year] so your name shows up!
 - Assume the reader is familiar with the main references (but don't skip any)

Finishing

- Question: How do I get finished?
- Answer: By not getting stuck

- Question: Why are you stuck?
- Answer: Because you've set yourself too hard a task.

- Don't be afraid to change your plan if it proves too difficult
- Cut irrelevant details

Reviewing

- Get other people to read your drafts
 - Peers will give friendly comments and typically have time on their hands
 - Advisor will steer you
 - Other academics will spot things your advisor missed
- Above all:
 - Get the bugs out before the committee sees it

In Summary

- Start writing today (never tomorrow)
- Make up a title page for inspiration
- Write down your argument succinctly
- Turn the argument into a chapter plan
- Maintain a file of stuff to put all the material into
- Don't be afraid to change the plan

Part II

- The Examiner's/Committee's View
 - Reading it
 - What's this one about
 - Questions
- Previously in Part I
 - Definitions, Getting started, Organization

Examination Issues

- Committee needs to appreciate your research
 - Choose committee well – people knowledgeable about the topic
 - Target your thesis at them
 - Keep abreast of their work
 - Talk to them regularly, ask them what is the norm for your University
- Committee needs to be told about your research:
 - If it's not in your thesis they won't find out about it
 - No matter how good your research is, you **MUST** write a good thesis

The Committee's View

- Not another thesis to read!
- Your committee members are busy people
- Examining a thesis is a chore, but:
 - It might help me keep up to date in an area of research
 - It might give me new ideas
 - I may learn something
 - I might gain a new colleague
- Note: the reading will be done on trains, planes, and departmental meetings.

Committee Member's first Question

- What's this one about?
- Examiners have little time so they want to extract the most in the shortest period of time

Abstract ⇒ Bibliography ⇒ Conclusions ⇒ Contents listing
- This may be enough to decide if it's worth a Ph.D.
- Then:
 1. What questions now come to mind?
 2. Read more carefully
 3. Were the questions answered?

Has it Been Published?

- Peer-review publications are crucial
 - The research community's most important validation criteria
- Sure-fire recipe for success
 - Identify the top peer-reviewed conferences and journals in your research area
 - Publish your research in them
 - Always take the reviewers comments seriously
- If you've published in the right places
 - You have nothing more to worry about
 - Your committee cannot ignore the outcome of the peer-review process

Corrections/Changes

- Now there must be some corrections
 - Some committee member don't feel they've done the job unless they find some corrections for you
- Typical corrections
 - Typographical and grammatical errors
 - Poor presentation
 - Missing references or corrections
 - Missing statements
 - Redundant statements
 - Whole sections missing: Research Question; Critical Review of literature; Research methodology; conclusions; etc.

Defense

- What can I ask the candidate?
 - They may have decided before the exam whether to pass you
- Defense/Exam – lively discussion
- The exam is to check it's your work
 - Talk fluently about the work
- And a chance to clarify issues that are not clear in the thesis

What the Committee is looking for

- Review of literature
- Methodology
- Presentation of results
- Discussion and conclusions

Review of Literature

- To what extent is the review relevant to the research study?
- Has the candidate slipped into "Here is all I know about x"?
- Is there evidence of critical appraisal of other work, or is the review just descriptive?
- How well has the candidate mastered the technical or theoretical literature?
- Does the candidate make the links between the review and his or her methodology explicit?
- Is there a summary of the essential features of other work as it relates to this study?

Presentation of Results

- Have the hypotheses in fact been tested?
- Do the solutions obtained relate to the questions posed?
- Is the level and form of analysis appropriate for the data?
- Could the presentation of the results been made clearer?
- Are patterns and trends in the results accurately identified and summarized?
- Does the software appear to work satisfactorily?

Methodology

- What precautions were taken against likely sources of bias?
- What are the limitations in the methodology? Is the candidate aware of them?
- Is the methodology for data collection appropriate?
- Are the techniques used for analysis appropriate?
- In the circumstances, has the best methodology been chosen?
- Has the candidate given an adequate justification to the methodology?

Discussion and Conclusions

- Is the candidate aware of possible limits to confidence/reliability/validity of the work?
- Have the main points to emerge from the results been picked up for discussion?
- Are there links made to the literature?
- Is there evidence of attempts at theory building or re-conceptualization of problems?
- Are there speculations? Are they well grounded in the results?

In Summary

- Know your audience
- Help them understand
 - Keep it short
 - Use signposts
 - Get the contents right
- Make sure you've covered the bases
