How to write a thesis proposal

Framework

Thesis projects have the following elements in common:

1. A research issue is identified.
2. Other people’s work on the topic is collected and evaluated.
3. Data necessary to solving the problem are either collected by the student, or obtained independently.
4. Data are analyzed using technique/s appropriate to the data set.
5. Results of the analysis are reported and are interpreted in light of the initial environmental issue.

The final outcome is a thesis. You must first identify a research topic, find a supervisor, formulate a hypothesis, understand the background of your project, develop or adapt appropriate methods, and summarize the state of your project as a thesis proposal.

The purpose of writing a thesis proposal is to demonstrate that

1. The thesis topic addresses a significant problem;
2. An organized plan is in place for collecting or obtaining data to help solve the problem;
3. Methods of data analysis have been identified and are appropriate to the data set.

If you can outline these points clearly in a proposal, then you will be able to focus on a research topic and finish it rapidly. A secondary purpose of the proposal is to train you in the art of proposal writing. Any future career in the sciences, whether it be in the workplace or in academia will require these skills in some form.

All are aware that the best laid out research plans may go awry, and that the best completed theses sometimes bear only little resemblance to the thesis planned during the proposal. Therefore, when evaluating a thesis proposal, the Faculty Doctoral Committee will not try to ensure that you have a clearly described a sure-fire research project with 0% risk of failure. (If there was no risk of failure, it wouldn't be research.)

Instead, what we're interested in seeing is if you have a clear handle on the process and structure of research as it's practiced by our discipline. If you can present a clear and reasonable thesis idea, if you can clearly relate it to other relevant literature, if you can justify its significance, if you can describe a method for investigating it, and if you can decompose it into a sequence of steps that lead
toward a reasonable conclusion, then the thesis proposal is a success regardless of whether you modify or even scrap the actual idea down the line and start off in a different direction. What a successful thesis proposal demonstrates is that, regardless of the eventual idea you pursue, you know the steps involved in turning it into a thesis.

**Structure of a thesis proposal**

Your thesis proposal should have the following elements in this order.

- Title page
- Abstract
- Table of contents
- Introduction
- Thesis statement (the ‘so what’ factor)
- Approach/methods
- Preliminary results and discussion (if any)
- Work plan including time table
- Implications of research (the ‘so what’ amplified)
- List of references

The structure is very similar to that of a scientific paper. You will be able to use a large fraction of the material of the thesis proposal in your final thesis if this is done properly.

**1.1 - Title page**

- Contains short, descriptive title of the proposed thesis project (should be fairly self-explanatory)
- And author, institution, department, supervisor and his/her institution, and date of delivery

**1.2 - Abstract**

- The abstract is a brief summary of your thesis proposal
- Its length should not exceed ~200 words
- Present a brief introduction to the issue
- Make the key statement of your thesis
- Give a summary of how you want to address the issue
- Include a possible implication of your work, if successfully completed (the ‘so what’)

**1.3 - Table of contents**

- List all headings and subheadings with page numbers
- Indent subheadings
- (Word will do all this for you as a TOC – Table of Contents).

**1.4 - Introduction**

- This section sets the context for your proposed project and must capture the reader’s interest
- Explain the background of your study starting from a broad picture narrowing in on your research question
- Review what is known about your research topic as far as it is relevant to your thesis
- Cite relevant references
• The introduction should be at a level that makes it easy to understand for readers with a general science background as the members of the Faculty Doctoral Committee are not necessarily experts in your field.

1.5 - Thesis statement/Aims

• In a couple of sentences, state your thesis (the ‘so what’)
• This statement can take the form of a hypothesis, research question, project statement, or goal statement
• The thesis statement should capture the essence of your intended project and also help to put boundaries around it

1.6 - Methods

• This section contains an overall description of your approach, materials, and procedures
  o What methods will be used?
  o How will data be collected and analyzed?
  o What materials will be used?
• Include calculations, technique, procedure, equipment, and calibration graphs
• Detail limitations, assumptions, and range of validity
• Citations should be limited to data sources and more complete descriptions of procedures
• State that you will pass through Ethics and possibly through Data Protection.
• Do not include results and discussion of results here

1.7 - Preliminary results and discussion (if any)

• Present any results you already have obtained
• Discuss how they fit in the framework of your thesis

1.8 - Work plan including time table

• Describe in detail what you plan to do until completion
• List the stages of your project in a table format
• Indicate deadlines you have set for completing each stage of the project, including any work you have already completed
• Discuss any particular challenges that need to be overcome

1.9 - Implications of Research

• What new knowledge will the proposed project produce that we do not already know?
• Why is it worth knowing, what are the major implications? So what??

1.10 - List of references

• Cite all ideas, concepts, text, data that are not your own
• If you make a statement, back it up with your own data or a reference
• All references cited in the text must be listed
• Cite single-author references by the surname of the author (followed by date of the publication in parenthesis) – another document is available for in-text citation.
• Do not use footnotes
• List all references cited in the text in alphabetical order using URM (uniform requirements for manuscripts – look it up online).
Suggested order in which to write the proposal

Proceed in the following order:

1. Make an outline of your thesis proposal before you start writing
2. Prepare figures and tables (if any) and figure captions
3. Methods
4. Discussion of your data
5. Inferences from your data
6. Introduction
7. Abstract
8. Bibliography

This order may seem backwards. However, it is difficult to write an abstract until you know your most important results. Sometimes, it is possible to write the introduction first. Most often the introduction should be written next to last.

Tips

- Poor grammar and spelling distract from the content of the proposal and give a poor impression. The reader focuses on the grammar and spelling problems and misses keys points made in the text. Modern word processing programs have grammar and spell checkers. Use them.
- Read your proposal aloud - then have a friend read it aloud. If your sentences seem too long, make two or three sentences instead of one. Try to write the same way that you speak when you are explaining a concept. Most people speak more clearly than they write.
- You should have read your proposal over at least 5 times before handing it in
- Simple wording is generally better
- If you get comments from others that seem completely irrelevant to you, your paper is not written clearly enough
- Never use a complex word if a simpler word will do
- The attached document is laid out with margins as required for a thesis. It contains macros and an embedded toolbar that may make your life easier, if used as a template for the proposal and for your thesis. This is only if the macros are enabled in your version of word (find out how online). The buttons do the following from left to right:
  - Highlight text and you can format it to heading 1 or heading 2. This can then be used to create a table of contents that can be automatically updated by Word itself (find out how online).
  - Text cut/copied can be pasted as unformatted text.
  - Automatically insert a footnote.
  - Insert highlighted text in a new footnote as unformatted text.
  - Increase font size of highlighted text.
  - Decrease font size of highlighted text.
  - Superscript highlighted text.
  - Subscript highlighted text.
  - Line spacing: Single/1.5/double.
  - Navigate forward/back.
  - Word count of selected text/of entire document if no text selected.
  - Sort ascending in a selected table.

I hope this is helpful and if you have any difficulties, do, for goodness’ sake, please look up your questions online (google them) before asking me. Prof. Victor Grech – 17 December 2011.