

Essentials of Thesis Writing

This guide looks at some of the key aspects of writing a thesis or major research paper.

- Research question
- Critical thinking
- Project management
- Research
- Organization
- Writing
- Revision

It presents a basic understanding of these components as well as some strategies that may help things run more smoothly. Some of these elements are discussed more fully in the graduate discussion groups offered at the Centre or in other guides. References for further information are given as well.

Research Question

The research question is the foundation of your thesis; it provides a purpose for your thesis: answer the question. It orients other aspects of your thesis, such as the sources you will need to use, your choice of methodology, and the way you present your data.

It is therefore important to establish your research question early on. Doing so will allow you to focus your attention on answering it. Always keep your question in mind as this makes your research more effective and means that you work with information that is relevant, rather than sifting through numerous ideas that are not pertinent.

There is no one way to decide on your research question. Two possible methods include

- Identifying a problem within the literature and defining a question that needs to be answered for that problem to be solved;
- Having a hypothesis or a possible conclusion that could be drawn and formulating a question to correspond to it.

For more information:

Bell, J. (2005). *Doing your research project*. Ch. 2.

Booth, W.C., Colomb, G.C., and Williams, J.M. (2003). *The craft of research*. Ch. 3 and 4.

Dunleavy, P. (2003). *Authoring a PhD*. Ch. 2.

Roberts, C. (2004). *The dissertation journey*. Ch. 4 and 126-127.

PhD—First thoughts to Finished Writing. *Finding, formulating, and exploring your topic*.

<http://www.sss.uq.edu.au/linkto/phdwriting>.

Critical Thinking

Critical thinking is a fundamental characteristic of thesis writing. Initially it helps you see where original contributions to your field can be made, thus providing possibilities for research. Later, your thesis should show a deep understanding of your topic, which means that you must go beyond simply restating information and show greater engagement in the material.

Critical thinking is a process that uses several skills:

1. **Summarizing:** Showing your understanding of an author's argument by restating the ideas in your own words.
2. **Analyzing and interpreting:** Assessing the structure of the argument and identifying implied connections and ideas.
3. **Synthesizing:** Drawing links from the work to your own personal experience and knowledge.
4. **Evaluating:** Developing and providing your own opinions on the quality and significance of the work or information.

When reading:

- Keep in mind what information you hope to get out of the source.
- Do not take the information at face value: be aware of ideas that may be expressed implicitly or may be interpreted differently by others.

When writing:

- Present your ideas clearly: identify the ideas you want to communicate and explain their relevance or significance.
- Present your ideas logically: organize your ideas so that you lead your readers down your line of reasoning and, ultimately, to the same conclusion as you.

For more information:

Browne, M.N. and Keeley, S.M. (2004). *Asking the right questions: A guide to critical thinking*. Ch.1

Diestler, S. (2005). *Becoming a critical thinker: A user-friendly manual*. Ch. 1.

Troyka, L.Y. and Hesse, D. (2006). *Simon & Schuster handbook for writers*. Ch. 5

University of Wollongong. *Uni Learning*. <http://unilearning.uow.edu.au/main.html>.

Project Management

Students generally have two reasons for not starting their thesis in a timely manner: they are overwhelmed with the magnitude of work, or they procrastinate. The best way to overcome these two obstacles is project management.

Project management breaks down a large task into smaller, more manageable steps. This has several advantages:

- It is easier and less overwhelming to accomplish a number of small projects than one big one.
- It creates more immediate, short-term goals. Imminent deadlines make it easier to focus and accomplish a task.
- It allows you to see which steps can be done at the same time and which must be done first in order for others to be accomplished.

There are a number of different **factors** to consider when breaking down your project:

- All the different elements of the project.
- Time needed for each step.
- Your work style and habits.
- Deadlines set by your program or faculty.
- Your supervisor's schedule and deadlines.
- Other responsibilities (family, job, exercise, etc.).

Overall, writing a thesis can be done much more efficiently when you set priorities and are disciplined. However, be flexible; unexpected changes or delays do not have to halt your work completely.

For more information:

PhD-First Thoughts to Finished Writing. <http://www.sss.uq.edu.au/linkto/phdwriting>.

Roberts, C. (2004). *The dissertation journey*. Ch. 7.

University of Minnesota. *Dissertation Calculator*. <http://www.lib.umn.edu/help/disscalc>.

University of North Carolina. *Dissertations*. <http://www.unc.edu/depts/wcweb/handouts/dissertation.html>.

The Graduate Mentoring Centre and Counselling Services are good resources for more information on time and stress management.

Bibliographic Research

How much research is enough? There is no magic number of sources, and there will always be more literature that you could read. To know if you have enough sources to do the bulk of your writing, consider several factors:

- **Novelty:** Are you still reading new ideas, or do all the sources you read present familiar arguments/methodologies/approaches?
- **Relevance:** Is what you are reading pertinent to answering your research question?
- **Breadth:** Has what you have read given you a solid understanding of the many aspects of this topic and question?
- **Depth:** Do you have enough information to explain your topic adequately?

Keep track of what you read, both the source information and the ideas themselves. See the following section on *organization* for more suggestions.

The **library and its librarians** are valuable resources. Use them! Check out the library's website to see what services and tools are available for you, and speak with the subject librarian in your field about good research tips and tools. Do not make research an excuse for not writing. At some point you must stop researching and begin synthesizing your thoughts and putting them down on paper.

For more information:

Ballenger, B. (2001). *The curious researcher: A guide to writing research papers*.

Bell, J. (2005). *Doing your research project*. Ch. 4 and 5.

Booth, W.C., Colomb, G.C., and Williams, J.M. (2003). *The craft of research*. Ch. 5 and 6.

Claremont Graduate University. *Researcher's notebook*. <http://www.cgu.edu/pages/793.asp>.

University of the Highlands and Islands of Scotland. *Handbook for Postgraduate Research Students*. <http://www.pginfo.uhi.ac.uk>.

University of Ottawa Libraries. <http://www.biblio.uottawa.ca/index-e.php>.

Organization

Research generates many ideas—both your own and those from other sources—that you will want to use. You will want to record them in some way so that you can focus on new information and ideas but not lose track of what you already had or where you found it.

Start to organize your research from the very beginning by keeping track of

- What sources you have used and their relevance to your work;
- What relevant ideas you have found and where;
- What questions or original ideas you have;
- What you are doing and what needs to be done.

Benefits of organization:

1. Worrying less about forgetting ideas since you have written them down in an organized fashion. This in turn frees your mind to concentrate on (and generate) new ideas.
2. Finding previously seen and recorded information quickly.
3. Beginning to synthesize material by putting sources and information into context.
4. Referencing correctly and clearly.

There are many different ways of managing information and sources, so it is important to develop a system that matches your needs and habits. Some people prefer electronic means (computers, software, etc.), others prefer handwritten methods (note cards, notebooks, etc.), and still others use a combination of the two.

Other tips:

- Always record the source information for an idea, a quote, etc.
- Look for keywords, main ideas, or categories in the literature. They may be helpful in organizing your own research.

For more information:

Bell, J. (2005). *Doing your research project*. Ch. 4.

Booth, W.C., Colomb, G.C., and Williams, J.M. (2003). *The craft of research*. Ch. 6.

Orna, E. and Stevens, G. (1995). *Managing information for research*.

Roberts, C. (2004). *The dissertation journey*. Ch. 8.

Some information management software to consider are *General Knowledge Base*, *Ibidem*, *RefViz*, *AskSam*, *FileMaker*, and *Microsoft Access*.

A good list of mind mapping and organizational software and freeware can be found on Wikipedia at http://en.wikipedia.org/wiki/List_of_mind_mapping_software.

This topic is discussed in more depth in the *Information Management* guide and discussion group.

Writing

Writing is just one part of the whole thesis process, but it is a very important one because it is how you communicate the ideas that have sprung from your research to others within your field.

Writing can be one of the most difficult aspects of the thesis because it requires you to organize many thoughts and express them as words. However, writing a thesis is like writing any academic paper: if

you take the time to think about what you want to say and to **plan** out the different sections and their key ideas, it is much easier to put your thoughts into sentences.

Begin planning and writing as soon as possible and do not feel obligated to start with the introduction. For example, you know you will have a section on your methodology; if you are already familiar with your methodology, you can start that section first.

Do not worry about having everything planned out exactly from the very beginning. Your main ideas will stay the same even if your sections and their order may change.

Do not feel pressured to write a section perfectly the first time. It is more important to get words onto paper—even if they are half-formed phrases—than to write a perfect sentence on the first attempt. Do not spend too much time revising a section either. Save major revisions for the next step.

Always keep your research question in mind. Your thesis research should answer that question, and everything you write should help your readers understand your question and the research.

For more information:

Booth, W.C., Colomb, G.C., and Williams, J.M. (2003). *The craft of research*. 185-200 and 222-240.
Chinneck, J. *How to organize your thesis*. <http://www.sce.carleton.ca/faculty/chinneck/thesis.html>.
Dunleavy, P. (2003). *Authoring a PhD*. Ch. 5.
MIT AI Lab, D. Chapman (Ed.). (1988). *Writing*. "How to do research at the MIT AI Lab."
<http://www.cs.indiana.edu/mit.research.how.to/section3.7.html>.
Rudestam, K.E. and Newton, R.R. (1992). *Surviving your dissertation*. Ch. 3-7 and 9.
Troyka, L.Y. and Hesse, D. (2006). *Simon & Schuster handbook for writers*. 481.

Revision

It is important to plan time for revising after the bulk of your text is written. Ideally, you should **put your work aside** for a significant amount of time and then come back to revise. Setting aside your work allows you to return to it with a fresh perspective.

Remember to leave plenty of time for your supervisor to provide feedback as well as for further revisions.

Revision should be done with the readers in mind. Your goal is to communicate your research so that others can easily understand your ideas and argument(s).

It is best to work on **larger issues first**, such as structure, and work your way down to smaller details like grammar and referencing. In revising, you will work on three different aspects of your text:

1. Organization
 - Do the introduction and conclusion present the same argument?
 - Are the chapters and sections in a logical order?
 - Are the ideas within sections and paragraphs in a logical order?
2. Communication
 - Do section titles adequately portray their contents?
 - Are main ideas in sections and paragraphs clearly stated?

- Are the links between sections, paragraphs, and sentences made clear?
- Do paragraphs and sentences flow well?
- Are figures and other images explained in the text?
- Is your work free from grammatical errors (spelling, punctuation, etc.)?
- Have you correctly referenced all borrowed material?

3. Presentation

- Are figures and other images easy to read and understand?
- Are section headers clearly distinguishable?
- Are your table of contents and title page accurate and free of errors?
- Does the format (font, numbers, sections, page numbers, etc.) meet the requirements of your department or supervisor? Is it consistent?

For more information:

Booth, W.C., Colomb, G.C., and Williams, J.M. (2003). *The craft of research*. Ch. 13.

Dunleavy, P. (2003). *Authoring a PhD*. Ch. 5.

Purdue Online Writing Lab. *Writing a research paper: Revision*.

<http://owl.english.purdue.edu/workshops/hypertext/ResearchW/revise.html>

Troyka, L.Y. and Hesse, D. (2006). *Simon & Schuster handbook for writers*. 480-483.

More Resources:

- All of the books and articles used here can either be found in the University of Ottawa libraries or in the Resource Centre at the Academic Writing Help Centre.
- The **Academic Writing Help Centre** has numerous services available to provide you the support you need to write well as well as resources for graduate writing.
- Your **thesis supervisor** or director can explain specific program requirements for the thesis and can offer insights into aspects such as the audience for your thesis, key topics and works you should be researching, etc.
- Your department should have **copies of previous theses** in your field which can provide examples of formats or writing styles that you can follow.
- The **librarians** can help you research and manage your research more effectively.
- The website of the **Faculty of Graduate and Postdoctoral Studies** has information useful for understanding what is available for and expected of you as a graduate student.
- The **Graduate Mentoring Centre** and the **Counselling Service** offer services for a number of different aspects in your academic career.