



# Research and Thesis writing

## 2. Developing a research proposal

In the life of a research student there are several milestones such as defending your research proposal, or submitting the thesis. This unit is concerned with one of the earliest milestones in thesis writing: developing a research proposal. While not all research students are required to formally submit a research proposal and defend it before a panel, the suggestions made in this unit still have relevance for undergraduate Honours students, as well as Masters and doctoral students starting out on research.

### Developing a topic

The task of establishing a suitable topic is often a significant hurdle. While supervisors in some departments may suggest topics, other supervisors expect students to have quite a clear idea of the thesis topic before the preliminary supervision discussions take place.

For students who have had a break from university studies, establishing a broad topic area or even a potential topic is a process that should begin before you enroll. It involves reading in your area of research interest, thinking, discussing and, attending related seminars or conferences. These activities encourage contemplation, and can assist in fostering ideas. For students who know the general topic area they wish to research, reading widely in the area of interest will help to identify research issues, or questions that need further investigation. The process of developing a topic is ultimately one of establishing a gap in current research that a thesis could aim to address.

If you have made an appointment with an academic to discuss research topics, keep in mind that the discussion will be most fruitful if you are prepared. The academic will most likely ask you about your research interests, particular aspects of those research interests, your familiarity with the literature, and so on. It may be helpful to give the academic an outline of your research interests before your meeting. The academic is unlikely to *give* you a topic, but through discussion can help you to come up with your own. Furthermore, discussions with the academic should assist you in refining an existing topic, or to establish a research space in the current research in the field.

Once you are closer to establishing your topic, you need to address a number of issues to make sure your intended topic is suitable. This process may lead you to further refine your topic, but hopefully not abandon it. It is important that early in your candidature the following issues are addressed.



1. Research models and methods



2. Developing a research proposal



3. Thesis Structure guidelines



3.1 Sample Abstract from Engineering & Biology



3.2 Sample Introduction from Engineering, Biology & Education



3.3 Sample Methods section from Biology, Engineering & Education



3.4 Sample Results section from Biology & Education



3.5 Sample Discussion section from Biology



3.6 Sample Conclusion from Engineering & Education



4. Thesis writing and persuasion

### Learning objectives

This module will help you to:

- learn about various research models.
- prepare a research proposal.
- structure your thesis and its chapters.
- write convincingly of your research outcomes and implications



- supervision

The process of selecting a supervisor is a significant hurdle in itself. While some departments may allocate you a supervisor, it is very helpful if you have in mind the person you think would be most suitable.

Departments are keen to attract research students, so it is worth your while to make appointments, and speak to various people about supervision. Remember too when looking for a supervisor, to consider questions of availability, expertise, and personality.

- data

If your project involves collecting data from human participants, you must be sure at the outset that you will be able to establish your cohort and have the participation of enough subjects to carry out the study. Your supervisor will guide you in preparing an application to the University's Human Research Ethics Committee. The Ethics Officer at the University's Research Office can advise you when the Ethics Committee meets to discuss applications. This is generally on a monthly basis. Application forms are available at the Research Office or can be downloaded from the University's web site.

- level of interest and commitment

An important question is whether your topic can sustain your interest for a long period. For full-time doctoral students this means approximately three years. You should find your topic challenging and exciting.

- budget

Budgetary considerations are important for students who generally have limited access to funds. What equipment do you need for your study? Is it available in your department? What facilities are available for research students in your department (*shared computers? a desk? access to a photocopier? limited access to interlibrary loans? etc.* ). Will you need to travel to carry out field studies? These are some of the questions you should consider, and your supervisor may be able to offer advice on additional funding sources.

At the University of Wollongong post graduate research students can apply to the Office of Research for financial assistance to attend a national or international conference, at which the student is presenting a paper. Students are only entitled to this assistance once in their candidature. Departments also receive funding for their post graduate research students. Some departments make these funds directly available to the student. You should ask your department's post graduate officer if any financial assistance is available.

Finally, an important consideration in developing your topic is whether your chosen topic is a significant one. For PhD candidates, their research is required to make an original contribution to their field of study. For this reason it is necessary to establish a gap or space in the field of enquiry which your research will seek to fill. Another consideration for research students is will fellow researchers find the chosen topic interesting and relevant? While this is a difficult question to gauge for a beginning researcher, a well chosen topic can result in attracting the interest of other researchers, or relevant parties — an outcome which will make your candidature as a research student more enjoyable and hopefully fruitful.

## Preparing the research proposal

Some faculties require students to submit a research proposal before they can begin their research project. Expectations differ from department to department: some departments require only several pages, while others expect a more substantial piece of work, which will later form the basis of your introductory chapter. Check with your department or supervisor for any departmental guidelines for research students.

The main components of a research proposal or project plan are as follows: a brief literature review that highlights the gap in research that your research aims to address, the scope of your research, aims and objectives, proposed methodology, data analysis and implications of the research. Preparing a research proposal forces you to consider project design issues early on, and to think through potential problems. Presenting your research proposal to department or faculty members is a valuable opportunity for you to receive constructive feedback on your project from experienced researchers.

## Structure of the research proposal

Depending on the scope of your research proposal, not all of the following need be included in your proposal. It is also possible to combine some sections, or change the order. The development of your research proposal will be in consultation with your supervisor.

- 1. Title page:** this should include the title of your project; your name and student number; your department or faculty; the name of the degree sought; the names of your supervisors, and the date of submission.
- 2. Abstract:** this should include the problem under investigation; the research methodology and theoretical orientation; and the expected outcomes and implications of the research.
- 3. Table of contents:** the inclusion of a table of contents will depend on the scope of your research proposal.
- 4. Introduction:** depending on the scope of your proposal, the introduction will contain a number of sub-sections.
  - background to the study
  - the significance of the study/ aims and significance of the study
  - the statement of the problem
  - research questions and hypotheses
  - definitions
- 5. Literature review:** the literature review provides the rationale for your research topic. It should give an overview of the current research on the topic area. It should identify a gap in the research. This is important because it shows why your topic is important. The literature review should also review relevant methodologies, which show how your research is to be done.
- 6. Research design/ methodology:** this section will include a number of sub-sections. It should describe the type of study you propose to do as well as how you propose to do it. You need to describe your participants/subjects, your data collection procedure and method of data analysis, as well as the limitations of your project.

**7. Proposed timeframe:** provide a brief timeline for your project

**8. Expected outcomes:** what you hope to achieve

**9. References:** a full list of all references cited in your proposal. Check with your faculty for preferred referencing conventions.

Depending on your department or faculty you may also include a description of any pilot studies which have been undertaken. Some departments also prefer the research questions and hypothesis to follow the literature review. It may also be advisable to include a section on your theoretical orientation. If your research involves human participants you may need to include a section on ethical considerations. These issues need to be clarified with your supervisor.

## Sample short research proposal

The following mock research proposal has been annotated to highlight some of the elements that a research proposal needs to adequately give an overview of the proposed thesis topic. The requirements for research proposals will vary for different disciplines, but the elements in this example are fairly generic.

### RESEARCH PROPOSAL

**TITLE:** A case study of the political implications of deregulation of Telecommunications in Australia; 1987-1992.

The title identifies and introduces the topic.

**LITERATURE REVIEW:** The political implications of deregulation in regard to telecommunications policy formation has been reported on in a number of other countries. In Britain, Jones and Brownford (1989) conducted a study into the process of deregulation under the Thatcher Government. This study suggested that a lack of public participation held a number of important consequences for the deregulation process. Briefly, these were that effective and organised lobby groups were found to exert a degree of influence on the process, but were unable to effect lasting changes in the Thatcher Government's plans to deregulate the telecommunications industry and that it was found that the political rhetoric of the key players had little consistency with the actual process of deregulation.

The literature review gives an overview of the current research on the topic area and provides the rationale for the research question/topic. It should be brief and remain focused on the thesis topic.

In Sweden, Percy (1990) offered a historical review of the telecommunications industry and compared this history with Britain's. It was found that both countries had adopted the approach of deregulating the industry based on economic rationalist ideology. This approach, in both countries, included a lack of public consultation.

Most of the studies cited in this literature review relate to the aims and objectives of the thesis. This is one way to keep this type of literature review brief: maintain the focus on the thesis topic. In the thesis itself, much more detail would be provided.

Two case-studies of the deregulation of the telecommunications industries in France and Belgium was the topic of an important paper by Wooten, Trivett and Hampton (1993). By studying the correlation of political, economic and industry theory models, they argued that industry models and pressure from the business communities had a strong impact on the outcomes of deregulation and the public attitudes towards this process. The

impact of deregulation on the structure and future of the telecommunications industry was the subject of a study by Merten and Skillen (1995) in New Zealand. This paper found that pressure from lobby groups influenced the Government's decisions on the deregulation process. It was found that these decisions adversely affected the capacity of the telecommunications industry to compete effectively on an international level. The deregulation process in New Zealand was also shown to have adversely affected the quality of services available to the local market.

None of these issues have been investigated within the Australian context. The need for a comprehensive investigation into the deregulation process and its possible outcomes becomes increasingly important as the liberal Government moves towards deregulation and the partial sale of Telstra. The aims of this study are to provide a historical overview of the telecommunications industry in Australia, to analyse the Government's reasons for deregulating the industry and, in light of the above, provide comments on the future role of telecommunications in Australia.

**SCOPE:** The case study will primarily focus on the Australian political arena and telecommunications industry, however where relevant and necessary an analysis of international events and circumstances pertaining to the Australian situation will be made.

**AIMS/OBJECTIVES:** The project will aim to achieve the following objectives:

1. An investigation into the deregulation of telecommunications in Australia from an historical perspective.
2. An analysis of these findings with the benefit of hindsight, observe the political nuances unique to the case study, and accordingly interpret the processes that led to and ultimately influenced the Government's actions during the 1987-1992 period. A conclusion will also be provided on the basis of this analysis as to the future role of telecommunications in Australia
3. The preparation of a report outlining the findings in (1) and the conclusions reached in (2).

**AREAS TO INVESTIGATE:** An investigation conducted into the following areas will made to fulfill the objectives detailed above. 1. The policies and assumptions that led the Government towards industry deregulation. 2. The political rhetoric touted by key players during reform 3. The main lobby groups that participated in the deregulation process and the premise from which these groups exerted political pressure. Pressure is broadly identified as originating from the telecommunications industry, business community, and the international circuit. 4. The events that took place

These first two sentences introduce a gap in previous research. This is important because it shows why your proposed research is worth doing.

This last sentence introduces the aims of the study. By introducing this after pointing out the gap in research, the writer is showing how the thesis will fill this gap in knowledge.

This introduces the scope of study, identifying what the research will and will not cover.

Clearly stated aims and objectives should be provided. If possible, they should be numbered.

Here the student has listed the areas within the topic that will be investigated. These are the issues and topics the student has identifies as necessary to investigate in order to fulfill the aims and objectives. They could become potential chapter headings in the thesis.

during 1987-1991 with political, economic, and industry theory models. 5. The history of telecommunications in Australia to draw reference for support.

**IMPLICATIONS:** The immediate implications of the reform process are readily observable in the telecommunications sector and concern the structure of the industry. The present regulation and legislation regarding the industry will affect the future direction of telecommunications in Australia and also the ability with which Australian communications can compete overseas. The decisions made by the Government will directly affect industry policy.

This section attempts to identify the implications of carrying out the research. It answers the question of how the research findings may impact on the topic and the field.

**PROJECT PLAN:** The plan for this project is provided on the basis that it is a general guide to direction. Due to the nature of the research some information may be difficult to obtain on schedule and allowance for this needs to be made. This plan is also subject to change on re-evaluation.

**Stage 1:**

Construct a history of the events that took place from 1987-1991, and obtain an understanding of the political and industry changes since the destruction of the Post Master General's Department. Conduct and complete reviews of relevant literature.

This section shows what the student is going to do and how the student intends to approach the topic. These stages could be mapped out on a timeline and provide a map of activities and research for the student. Note how the student points out that this plan could change.

**Stage 2:**

Analyse and prepare the information gathered in stage 1 for interpretation.

**Stage 3:**

Put forward an interpretation of the politics of deregulation of telecommunications in Australia

**Stage 4:**

Prepare report for final submission.

**METHODOLOGY:** Relevant documents will be obtained from Government Departments such as the Department of Transport and Communications (DOTAC), and the Department of Industry Technology and Commerce (DITAC). Parliamentary papers and Acts will also be studied. Information will also be obtained from AUSTEL and the Telecommunications Industry Development Agency (TIDA). Further material will come from publications released by the key lobby groups. A review will also be made of events according to the reports in the press and published media. Literature concerning the explanation of political, economic and industry using models and theories will be examined.

This section, although titled Methodology, is really a list of the sources that will be used in the research.

**Note:** Plan has been compiled subject to future change.



The next units in this module on thesis writing focusses on the structure of a thesis, and includes annotated extracts from several disciplines.

## References

Anderson, J. & Poole, M. (1994). *Thesis and Assignment Writing* (2nd ed.) John Wiley & Sons, Brisbane.

Graduate School of Education, University of Wollongong (1997). Notes for the Guidance of Research Students.