

Organizing and Writing Your Project Report Some Tips

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Outline

- General aspects and philosophy
- Organization
 - of the whole project report
 - Within the project report
- Writing style and form
- Getting started, keeping going
 - (personal advice from writers)
- Resources

General philosophy: Hierarchy of importance

- Content
 - the message given
- Style
 - the way that message is presented (structure, language, and illustration)
- Form
 - the appearance of the message (grammar, punctuation, usage, spelling, and format).

A project report is an original contribution to knowledge

- A reader will expect that:
 - you have identified a worthwhile problem or question which has not been previously answered
 - you have solved the problem or answered the question.

A project report is an attempt to persuade

- A reader/reviewer will ask:
 - what is the research question?
 - is it a good question? (has it been answered before? is it a useful question to work on?)
 - did the author convince me that the question was adequately answered?
 - has the author made an adequate contribution to knowledge?

Style and structure

- Organization
- Emphasis
- Depth
- Transitions between sections

Organization: the key to persuasion

- Start by writing down the single most important concept.
- Outline the critical observations and reasoning that support that concept
- Test the organization by careful evaluation of the outline
- Expand the outline to greater detail, then test it again
- Write the body of the text : methods first, observations next, interpretations last.
- Write the contextual elements: conclusion first, introduction next, abstract last.
- Insert carefully composed transitional sections, paragraphs, and sentences.

Organization of the project report

- Abstract
- Introduction
- Background and Literature review
- Problem statement/research question
- Methods
- Data presentation
- Interpretation
- Discussion
- Conclusions
- References

**Different types of writing might have more/less emphasis on each of these elements

Abstract

- Write this LAST!
- Abstracts should be 1-2 pages and should be self-contained
- Model after a paper in your field
- Written to attract readers to your thesis, gives a good initial impression
- Summary of the contents of the thesis
- Brief but contains sufficient details
 - motivation for the work (problem statement)
 - project objectives
 - techniques employed
 - main results and conclusions

Introduction

- Write this second to last!
- This is a *general* introduction to what the thesis is all about -- it is *not* just a description of the contents of each section.
- Briefly *summarize* the question (you will be stating the question in detail later), some of the reasons why it is a worthwhile question, and perhaps give a brief overview of your main results.

Introduction

- Topic?
 - Defines scope and limitations of study
- Importance?
- Background?
- Arrangement of project report?
- The content should be general enough to orientate the reader gracefully into the subject materials

Background

- A brief section giving background information may be necessary.
- Your readers may not have any experience with some of the materials needed to follow your project report, so you need to give it to them.
- A more informative title will usually help

Review of the State of the Art (Literature review)

- Limited to the state of the art *relevant to your report*. Again, a specific heading is appropriate; e.g., "Previous work on Fabrication of Light Weight Concrete." The idea is to *present* (not analyze) the major ideas in the state of the art right up to, but not including, your own personal brilliant ideas. You organize this section by idea, and not by author or by publication.
- Some advisors think this section should come after the problem statement (next section)
- Some advisors do not expect a long lit. review for the report - be sure you ask your supervisor!

Literature review

- Provides context for and details about the motivation for the project
- States why the problem is important
- Sets the scene for the work described in the report
- Describes what others have done and hence sets a benchmark for the current project
- Justifies the use of specific techniques or problem solving procedures

Tips for literature review

- Make it a point to keep on top of your field of study by making regular visits to the library and to the electronic journals websites.
- When reading a technical paper, jot down the key points and make a note of the journal or technical publication where the paper was published.
- Devise a cataloguing system that will allow you to retrieve the paper quickly.

Tips for literature review

- Make sure that you have read and understood cited work
- Organize your content according to ideas instead of individual publications.
- Do not simply quote or paraphrase the contents of published articles. Weave the information into focused views. Demonstrate your deeper understanding of the topic.
- Do not be tempted to summarize everything you have read; only include those relevant to your main points.

Research Question or Problem Statement

1. A concise statement of the question that your report tackles
2. Justification, by direct reference to previous work, that your question is previously unanswered. This is where you *analyze* the information which you presented in the “state of the art” section
3. Discussion of why it is worthwhile to answer this question.
4. Highlight the section with a heading using words such as “problem” or “question”

Research Methodology

- 1) Awareness of various possible investigative / experimental methods
- 2) Main tasks, difficulties and problems are listed and explained
- 3) Operating principles of various techniques are explained
- 4) Evidence of planning and organization to achieve milestones and demonstrate problem solving skills

Experimental Method, Procedure and Equipment

- Depending on your topic this may be one paragraph or a long section
- If measurement error is important to your study, state how this was assessed.

Experimental Method, Procedure and Equipment

- This section describes the approach and the equipment used to conduct the experiment.
- It explains the function of each apparatus and how the configuration works to perform a particular measurement

Observations, Data, Findings, and Results

- No standard form. But still organized!
- One or several sections and subsections.
- Methods, Data, Interpretation sections are separate
- Only one purpose: to convince the reader/reviewer that you answered the question or solved the problem stated in the previous section.

Data presentation

- Draft your figures first: (A picture is worth a thousand words)
- Make captions stand alone
- Use enough figures to present the data that justifies your interpretations and conclusions. No more, no less. (Don't use 1000 words when 500 will do)
- Write your text around your figures
- Raw data which may take up a few pages, and most probably won't interest any reader, could be placed in the appendices.

Data and Interpretation

- Present data that is *relevant* to answering the question or solving the problem:
 - if there were blind alleys and dead ends, do *not* include these, unless specifically relevant to the demonstration that you answered the project report question.
 - Note for some report it may be important to include these in an appendix

Use the proper tools (for your research AND your writing)

- Spreadsheets, analysis tools
- Plotting programs
- Graphics programs
- ENDNOTE
- Writing resources

Focus on one important thing in each paragraph

Each paragraph needs a topic sentence

Contents of paragraph should only relate to that topic

Interpretation

- Keep separate from data, clearly distinguished by paragraph, section, and/or words like “are interpreted to show”.
- Depending on your topic, it is often useful to subdivide interpretation into a “local” or small scale (directly flows from your data) and a “regional” or “big picture” scale, that flows from consideration of your data with that of others. This latter type is usually included in the “discussion” section.

Discussion

- Look at discussion sections in papers in your field. See what they cover.
- Usually is a broader scale interpretation than just your data (relate to previous published results)
- Addresses the bigger problems of your research topic and how your study fits into solving those problems
- Is NOT a conclusion section

Discussion

- The interpretation of the data gathered is discussed in this section.
- Sample calculations may be included to show the correlation between the theory and the measurement results.
- If there exists any discrepancy between the theoretical and experimental results, an analysis or discussion should follow to explain the possible sources of error.
- The experimental data and the discussions may also be combined into one section, for example, under the heading called “Discussion of Experimental Results”.

Conclusions

- 1. Conclusions
- 2. Summary of Contributions
- 3. Future Research

Conclusions are *not* a rambling summary of the report: they are *short, concise* statements of the inferences that you have made because of your work.

It helps to organize these as short numbered paragraphs, ordered from most to least important. All conclusions should be directly related to the research questions stated

References

- All references cited, including those in Tables and Figure captions.
- Use consistent style throughout (e.g. “et al.” OR “and others”, not both)
- Journals, magazines, books, handbooks, encyclopedia, patent, **rather than websites**
- The sources of information are usually arranged and numbered according to the order they are cited in the report. The reference materials must be entered in the required formats.

A few words on form

- Format: Typography, layout
 - Follow the FYP guidelines for the project report, journal guidelines for a paper
 - Plan ahead! (e.g. do you really need 50 *color* figures?)
- Mechanics:
 - Grammar
 - Usage
 - Punctuation
 - Spelling

A few words on format

- Follow the required report format (sequencem spacing, font size etc.)
- Read the guidelines as prescribed on the **UTAR FYP web-site**

Thank you for your
attention