

Chapter 12

Writing the Final Research Report

Some contents are taken from Chapter 9 of
"Writing for Computer Science"
by Justin Zobel

Planning a Research Report

- Four Objectives of a Research Report:

1. It should give readers a clear understanding of the research problem.
2. It should describe exactly how data were collected in an attempt to resolve the problem.
3. It should present the data precisely and completely. The data presented in the report should substantiate all the interpretations and conclusions that the report contains.
4. It should interpret the data for the reader and demonstrate exactly how the data resolve the research problem.

I. Description of the Research Problem

- Statement of the problem and other information needed to understand it should comprise the first section/chapter of the final report.
- The main purpose of the first section of the research report is to create a meeting of the minds between the writer and the readers of the report.
- The research report provides no opportunity for imprecise thought or inexact expression.

II. Description of the Method

- The method used to collect data, including the sample, assessment instruments, and procedures should be described with utmost precision.
- The design of the study should be clear. In particular, the researcher should state whether quantitative or qualitative methods (or both) were used and what particular research traditions were followed.

III. Presentation of the Data

- The data are presented in terms of the problem.
- There is a one-to-one correspondence between the data and the problem and each of the subproblems.
- A separate section should be devoted to each subproblem and its pertinent quantitative and/or qualitative data.
- Aside from the data, present all other items of interest.
- Use figures and tables to display certain types of data.
- Present a rationale for the statistical approaches that were used.
- Present data as evidence for the conclusions that you draw.
- Indicate whether or not data supported the hypotheses.

IV. Interpretation of the Data

- Interpretation of the data is the essence of research.
- Without inquiring into the intrinsic meaning of the data, no resolution of the research problem or its subproblems is possible.
- Exploit the data fully.
- Don't go too far beyond the data and lose sight of actual findings.
- Don't draw conclusions about causation or influence when the design of the study doesn't warrant such conclusions.
- Report honestly what the data have revealed.

V. Concluding the Report

- Conclusion should bring closure to the interpretation of the data.
- Concluding discussion is often in a separate section or chapter entitled "Summary, Conclusions and Recommendations."
- Conclusions should be entirely supported by the data presented.
- Final steps:
 - state whether or not the hypotheses have been supported,
 - identify weaknesses and limitations in the study,
 - identify possible practical implications of the results,
 - make recommendations for further research.

Writing Tips

- Start early. Even before the project's half-way mark.
- Know your audience.
- Identify the aims.

Organization of the Paper

- Educate readers. It's like telling a story, so should have a logical flow.
- The problem statement, review of previous solutions their drawbacks, new solution, finally the proof that new solution is better.

Organization of the Paper

- Common sections : title, author, date, keywords, acknowledgment.

- Abstract : 50 to 200 words

A summary of the entire research in a paragraph or two.

When writing an abstract, ask yourself the following questions:

1. What was this research project intended to accomplish—in other words, what research problem did it set out to address?
2. What was the general design and methodology of the study?
3. What were the results, and what conclusions can reasonably be drawn from them?

Background, Purpose, Method, Result, Conclusion

Organization of the Paper

1. Introduction : paper's topic, problem, previous works, approach of the solution, scope, limitations, outcomes, motivation.
2. Literature Review
3. Body : terminology, details proof, experimental outcome
4. Conclusion : result, significance, limitations, future work
5. Bibliography
6. Appendices

Maintaining Your Academic Integrity

Conveying the truth—and *nothing but* the truth—about a topic of investigation.

In writing a research report, academic integrity includes all of the following:

- Appropriately crediting the words and ideas of other people;
- Maintaining confidentiality and protecting participants' right to privacy;
- Explicitly identifying any biases in your sample selection;

Maintaining Your Academic Integrity (2)

- Describing any participants you dropped from your research sample and explaining why you dropped them;
- Describing the limitations of your measurement instruments—for instance, by reporting any evidence of poor validity or reliability;
- Describing any procedures you may have used to fill in missing data points in order to increase the number of participants for which you could conduct various statistical analyses;
- Providing a comprehensive report of your research findings, including those findings that do *not* support your hypotheses;

Endnotes and Footnotes

- **Endnotes** appear at the end of the text
- **Footnotes** appear at the bottom of relevant pages within the text itself.

Three purposes:

1. To indicate sources of information and ideas;
2. To acknowledge permission to quote or reproduce something from a copyrighted document;
3. To supplement information in the text of the report with additional information that strengthens the discussion.

Preparing the Report

Consider the style of prose

- active versus passive voice
- past versus present tense

Adhere to principles of writing

- neatness and clarity
- precision
- logical structure