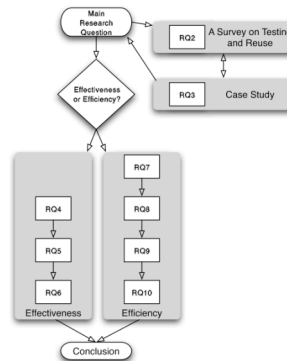




Computing Projects: Conducting and Presenting

Robert Feldt



Example: Thesis
Process Chart

Slides by Claes Wohlin



Conducting your project: Chapter 4

Objective:

- Understand the process of literature surveys
- Define and conduct a literature search
- Manage information obtained during a literature search
- Understand how to conduct critical evaluation
- Write a literature review

Slides by Claes Wohlin



Literature survey

Two main parts:

- Search
- Review

This is also related to:

- Referencing

Survey provides foundation (base knowledge on which you build)

Slides by Claes Wohlin



Survey

The survey provides the basis for understanding the current knowledge. Some examples of how our understanding changes over time:

"Computers of the future may weigh no more than 1.5 tons", Journal 1949

"I think there is a world market for maybe five computers", Watson at IBM, 1943.

Slides by Claes Wohlin



Iterative process

1. Define search
2. Perform literature search
3. Evaluate material
4. Write literature review
5. Refine or redefine search and iterate over the item 2 to 5.

Slides by Claes Wohlin



Where to look?

- Infocenter, both electronically (especially ELIN) and in the shelves
- Major organisations, for example IEEE and in particular the Computer Society of IEEE, & ACM
- Internet, although be careful about unpublished material
- From reference lists of articles

Slides by Claus Wörten



What is a literature search?

A literature search is a "*systematic* gathering of *published* information relating to a subject".

Published means that it should be recognised, which refers to that it has been reviewed and accepted of the community for its contribution.

Slides by Claus Wörten



Two hints

- Allow plenty of time, in particular lead time. It will take time so do not postpone it until tomorrow.
- Ensure that you make note of the full reference of any material you obtain. You need this when writing the report.

Slides by Claus Wörten



Top-down reading

Do not read everything you find from the start to the end. Read smart:

- Title
- Contents or abstract
- Conclusions
- Look at the references
- Evaluate the author
- If you find all aspects interesting: read selected parts that you need.

Slides by Claus Wörten



Literature

- Books
 - Journals
 - Conference proceedings
 - Theses
 - Company reports
- These are your main sources of information.

Slides by Claus Wörten



Search strategy

- Make notes as you go along (Search log)
- Use review articles to direct you
- Reference correctly immediately
- Know when to stop or move on
- Have a system to organise the material you read
- Read recognised leaders in the field
- Start broadly before you focus

Slides by Claus Wörten



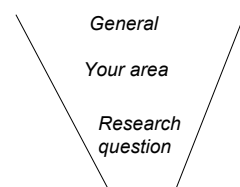
Critical evaluation

- Type of article?
- What can you gain?
- Is the author recognised?
- Contribution of article?
- Article fits in your context?
- Conclusions logical from the work?
- Fact from opinion?
- Your feeling about the article?
- Does the article contradict other viewpoints?
- References used?
- Limitations of the article?
- Can you use the results in your work?

Slides by Claes Worlin



Focusing



Slides by Claes Worlin



Using references

It is essential to find references that support your statements.

You should avoid opinions and focus on arguments based on literature or your own findings.

Slides by Claes Worlin



Chapter 5

Objective:

- Understand the main elements of your project
- Control your project as it progresses
- Understand problems that can occur
- Manage your time effectively
- Effective use of your supervisor

Slides by Claes Worlin



Manage five elements

- Time
- Cost
- Quality
- Scope
- Resource

You mainly control scope and quality.

Slides by Claes Worlin



Potential problems

- Weakening (motivation decreases)
- Personal problems
- Computer failure (backup! Version control!)
- Data availability
- Other things taking priority
- Job in industry (see previous)

Address: threats

Slides by Claes Worlin



Time management

It is important to manage your time.

Managing time is mostly about prioritising.

Not having time means actually not prioritising.

Many supervisors require Gant chart.
Relate & Update as you go along!

Slides by Claes Worlin



Supervisor

"A supervisor's principal professional responsibility is to help his or her research students to develop into individuals who think and behave as academic researchers in the field of study concerned."

Two roles:

- A manager
- An academic advisor

In addition, we have an examiner and a faculty reviewer.

Slides by Claes Worlin



Student expectations

- To be supervised
- To read their work well in advance
- To be available when needed
- To be friendly, open and supportive
- To be constructively critical
- To have good knowledge of the research area

Slides by Claes Worlin



Supervisor expectations

- Regular meetings & work pattern
- Open with progress & problems
- Listen to criticism & improve
- Student drives/manages project
- Student calls meetings as needed

Slides by Claes Worlin



Effective use of supervisor

- Prepare for meetings
 - Send new material well in advance
 - Questions & Problems noted
 - Alternatives prepared
- Take notes & email after meeting
- Arrange for next meeting
- Follow supervisor's advice
- Weekly status emails
 - Reduces risk through continuous interaction

Slides by Claes Worlin



Presenting your project Chapter 6

Objectives:

- Understand how to structure and write professional reports
- Write clear and concise abstracts
- Understand how to present data and results clearly
- Understand how to reference and avoid plagiarism
- Document software, comment programs and write user guidelines

Slides by Claes Worlin



Order of writing

- Continuously write a log (& reference list)
- Identify structure
- Draft the introduction (used a lang check)
- Main body (method and work)
- Conclusions and recommendations
- Complete the introduction
- Write the abstract
- Appendices (detailed info)
- Arrange contents list (and index)
- Proofread, check and correct

Slides by Claes Worlin



Structure and style

Many advices in the book.

I would like to emphasise some key chapters:

- Introduction, including an outline
- Review/Survey/Background
- Method
- Results
- Analysis
- Discussion/Conclusions

*Think about the glue
between the chapters*

Slides by Claes Worlin



Tips

- Set deadlines
- Write regularly (track words added / week! => status emails)
- Create a work rhythm
- Write up sections when they are ready
- Stop at a point from which it is easy to restart
- Have a careful configuration management of the report (Subversion, Mercurial, Git)

Slides by Claes Worlin



Abstract

The abstract is difficult, but very important, to write.

A definition of its function:

"summarize briefly the nature of your research project, its context, how it was carried out, and what its major findings are".

Slides by Claes Worlin



Numbering

Number sections, figures and tables.

All figures and tables should be referenced and described in the text.

Slides by Claes Worlin



Presentation of data

The art of presenting data is discussed in chapter 6. It is primarily about descriptive statistics, but many valuable advice can be found in these pages.

Slides by Claes Worlin



Referencing

- Avoid plagiarism or fail course!
 - Identify context
 - Support and validate
 - Identify sources
 - Provide proper credit
- This is closely related to citing.
Be careful with quotes!

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Citing

Use the Harward system:
(Smith 1999) or in text ... Smith
(1999) ...
(Smith 1999a) if more than one
article by Smith from 1999
(Smith and Jones 1999)
(Smith et al. 1999)

Slides by Claes Worlin



Important differences

- Referencing (use frequently)
- Quoting (limit)
- Plagiarism (NO, NEVER)

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References vs. bibliography

You must have a proper reference list,
but you may add a bibliography. The
latter is not used very often.

It is preferable to keep these two
separate in your thesis.

Listing references is an art, see book or
how it is done in some of the major
journals.

Slides by Claes Worlin



Chapter 7

- Understand how to structure, plan
and present effective oral
presentations
- Understand the purpose of viva
voce examinations (defence
situation)

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Limits

You have to accept that only a small part
of your work can be presented at the
oral presentation.

You are responsible for making a good
choice of what to highlight.

Start with the most important (Objective,
Motivation, Results, Conclusions, then
more details if there is time!)

You should attend a presentation day
before presenting yourself.

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Preparation

- Objectives (make the objectives clear at the beginning of the presentations)
 - Time (influence how much you can cover, 25-30 mins)
 - Audience (influence the level of the presentation, same background as you)
- Key: Be well prepared! Practice in advance!

Slides by Claes Worlin



Starting the presentation

- Who are you?
- What are you going to talk about?
- How long will the presentation last?
- Why should they listen to you?
- When can they ask questions?

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Delivery

Distractions:

- Talking with the back to the audience and mumbling
- Not scanning the whole audience
- Wild gesticulation
- Irrelevant information
- Extraneous noise

More advice in the book.

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Presentation tips

- Time - transparencies that can be dropped
 - Pointers - avoid them
 - Movement - minimise
 - Nerves - practice is the only cure
 - Technical problems - be prepared
- Above all, be enthusiastic

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Being an Opponent

- Read thesis in detail
- Note/mark all problematic or good areas
- Extract the major weak/strong points
- Use checklist, read again, answer
- Write opponent report (1-4 pages)
- In defence:
 - Focus on major strong/weak points!
 - No language or formatting details!

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Further reading

The following is covered very briefly in the book:

- Statistics
- Questionnaire design and analysis
- Qualitative analysis
- Systematic review

More information may be needed on a specific research method that you are going to use.

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Your new skills

- Independence as a worker
- Thinking (critical)
- Learning (how to learn)
- Technical skills
- Communication skills
- Research methodology

Slides by Claus Wohlen

