Research Methodology
Step 9: Prepare your final draft

Dr. Arash Habibi Lashkari

(Ph.D. of Computer Science)

Issued date: Nov / 2009

Last update: Dec/ 2014

Outlines:

- Dissertation chapters
- Formats and Styles
- International conference and journal Styles
- Writing Points

Dissertation Chapters

Dissertation Chapters: 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 article or thesis, gives a good initial impression
- Summary of the contents of the thesis
- Brief but contains sufficient detail
  - motivation for the work
  - project objectives
  - techniques employed
  - main results and conclusions

Dissertation Chapters: Introduction

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.

Dissertation Chapters: Introduction

- Topic?
  - Defines scope and limitations of study
- Importance?
- Background?
- Arrangement of thesis?
- You probably wrote this for your thesis proposal; REWRITE IT AFTER body of thesis is written

Dissertation Chapters: Literature review

- Limited to the state of the art *relevant to your thesis*. Again, a specific heading is appropriate; e.g., "Previous work on Cretaceous orogeny in the Cascades." 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 <u>*by idea*</u>, and not by author or by publication.

- Some advisors think this section should come after the problem statement (next section)

Dissertation Chapters: 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 thesis
- Describes what others have done and hence sets a benchmark for the current project
- Justifies the use of specific techniques or problem solving procedures

Dissertation Chapters: 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. (e.g. use ENDNOTE)

- 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.

Dissertation Chapters: Methodology

- 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.

Dissertation Chapters: Design, Presentation & analysis of data

- Depending on your :
- Data Gathering methodology
- Data Analyzing methodology
- Result presentation methodology
- …

Dissertation Chapters: Conclusions

- 1. Conclusions
- 2. Summary of Contributions
- 3. Future Works / Researches

Conclusions are *not* a rambling summary of the thesis: 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 question stated

Dissertation Chapters: References

- <u>All</u> references cited, including those in Tables and Figure captions. No more, no less.

- Use consistent style throughout (e.g. "et al." OR "and others", not both)

- Use ENDNOTE program (start NOW building your library database)

How can write from other resources

- **Summarizing** - express the main points of when it is someone else's opinion, theory or information.

- **Paraphrasing** – putting the information in your own words

- **Quoting** - use the exact words of the author(s). When quoting you usually place the words in quotation marks ("…")

-

When a reference isn't required

When you include information that is:

- **general knowledge** (e.g. A computer network has some nodes such as computers and printers and some network equipments such as switches and routers.)
- **common knowledge in your field**
- **Your ideas, findings and result of your own research**

Format and Style

Format and Style

- ## Format: Typography, layout
  - Follow the Grad. School guidelines
  - Plan ahead! (e.g. do you really need 50 *color* figures?)

  Examples: IEEE Template, IEEE Format, Springer Journal

- ## Mechanics:
  - Grammar
  - Usage
  - Punctuation
  - Spelling

Format and Style (Cont...)

- Shed light on your subject: clarity is everything

- Avoid convoluted writing

- Avoid ornate language, words you don't really understand
  (look it up!)

- Be professional! (or at least try really hard)

Resources for style, word use, etc.

Refer to your university's Guidebook for Report, and Dissertation

Writing Points

A Paragraph

- A paragraph introduces and develops one main idea

- The main idea is introduced through a topic sentence, which is usually the first sentence

- All sentences in the paragraph need to relate to the main idea in a logical way

- Paragraphs are linked together and flow logically on from each other

- In-text references need to be included in the paragraph if supporting ideas come from other sources.

Rountree, K. (1991). Writing for success: A practical guide for New Zealand students. Auckland: Longman Paul.

Flow of information in paragraphs

- **Paragraphs are usually structured as**

  - **Topic Sentence**
    - This is the **first** sentence and it expresses **The main idea**.

  - **Supporting Sentences**
    - details that expand your main idea.

  - **Concluding Sentence**
    - a rounding off, possibly by summarizing what has been said or drawing a logical conclusion from it.

Flow of information in paragraphs

- **Use linking words**

  also, **as well as**, *firstly*, **next**, then, **finally**, *so thus*, **as a result**, because, ***therefore***, for example, **for instance**, in contrast, ***on the other hand***, …

Phrases for transition

- Regarding
- Admittedly
- Consequently
- As a result
- Ultimately
- According to
- For this reason

Phrases for emphasis

- Moreover
- In fact
- Additionally
- For example
- In point of fact
- As a matter of fact
- Indeed

Phrases for counterpoint

- Conversely
- On the other hand
- However
- Nevertheless
- Notwithstanding
- Nonetheless
- Yet
- Despite
- Although
- Instead

Some writing pitfalls to avoid

1. **Avoid addressing the reader directly or using questions**

- For example: "Does this mean that some strategies are better than others?"

Some writing pitfalls to avoid

2. Try not to make generalizations.

For example:

"Everyone agrees that cold calling does not produce results".

While this may be true you can only make such statements if supported with evidence.

Instead:

"According to the Mori Report (2000), cold calling does not produce results.

Some writing pitfalls to avoid

3. OVERLY-LONG SENTENCES

A sentence should express only one idea or a clearly connected set of ideas.

- Home care has been expanding tremendously over the past few years partly due to recent technological advances that enable assessments and treatments to be a part of the home setting which at one time could only be performed within the hospital environment. X

- Home care has expanded tremendously over the past few years. This increase is partly due to recent technological advances that now make more assessments and treatments possible in the home rather than only in the hospital. OK

Some writing pitfalls to avoid

4. **WORDINESS - use the minimum number of words.**
Check your writing to make sure you don't have unnecessary words or phrases.

- You may often find that there are a number of words contained in your writing that can be safely eliminated without any kind of danger to your meaning whatsoever. X

- **You may** ~~often~~ **find** ~~that there are a number of~~ **words** ~~contained in your writing~~ **that can be** ~~safely~~ **eliminated   without any** ~~kind of~~ **danger to your meaning** ~~whatsoever~~. (Beer & McMurrey, 2005, p. 34) OK

Beer, D., & McMurrey, D. (2005). *A guide to writing as an engineer* (2nd ed.). New York: John Wiley & Sons.

Some writing pitfalls to avoid

- **Be careful not to use redundant phrases**

  For example:

  Alternative choices – alternatives

  Actual experience - experience

  'Various differences" (Various implies difference so you do not need both words)

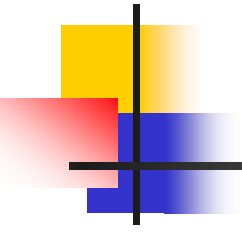- **Avoid starting sentences with linking words**

  Such as but, and or yet.

Beer, D., & McMurrey, D. (2005). *A guide to writing as an engineer* (2nd ed.). New York: John Wiley & Sons

Next Session :
Step 10: Publishing your research paper(s)

"There is no way to get
experience except
through experience."