Research Skills Workshops for Graduate Research Students

4
Conceptualising Your Research
9.00-12.00pm, Friday 31st August 2007
Guild Seminar Room 2

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Objectives

- To learn and practice writing techniques
- To consider stages of writing in terms of aims, audiences and feedback
- To clarify ideas about your research through writing and discussion

Timetable

9.00-9.30 Stages of writing
9.30-10.15 Writing sandwich exercise
10.15-10.30 Morning tea
10.30-11.15 Giving and responding to feedback
11.15-11.45 Writing as part of a research routine
11.45-12.00 Close and evaluation
Drafting, Revising, Editing and Proofreading

References:
Griswold, B. How to Read an Engineering Research Paper
Van Wagenen, R. K., Writing a Thesis, Substance and Style Prentice Hall, New Jersey

A. Drafting

“In the first draft of your thesis you are really finding out what you know. In a sense, you are writing for yourself, so the first draft is experimental.” (Elphinstone and Schweizer, 1998 p. 81)

Some “big picture” questions to consider as you write early drafts
1. What is the motivation for this work?
   (What is the “people problem”?, what is the “technical/scientific problem”?, what are the previous solutions to these problems and why are they inadequate? Why are the variables in my research significant?)

2. What is the proposed solution to the problem (idea, design, hypothesis)? How is it an improvement over past solutions? How will it be achieved?

1. How do I demonstrate that the methodologies used are appropriate to the investigation? How do I reassure the reader that the results are reliable and valid?
2. What are the paper’s contributions – ideas, methods, designs, results, techniques, algorithms, models? Why are the results/outcomes of the research significant?

3. To what extent have the project aims been achieved? What were the limitations of the study?

4. What are the future directions for this research?

B. Revising

“Skilled writers revise constantly, trying to resolve the tensions between what they want to say, and what the sentences actually record. For many skilled writers revising is the crux of the writing process. It is the way they shape prose into meaning for an audience, and the way they discover what they want to say, sometimes to their own surprise.” (Yang, quoted in Elphinstone and Schweizer, 1998, p. 83).

As you revise your drafts, look for weaknesses in:
   1. how you have put your argument
      - is the argument clear?
      - do you have a sound grasp of theory?
      - Are your inferences defensible?
      - Do you need examples to illustrate this point?
      - Do you need to use a citation to substantiate this point?
      - Is this a convincing way to use data?
      - Have you answered objections that may be made to your assertions?
2. the structure of the document,
   - Is the basic form and structure of the document suitable? Might it be better with a different layout or a larger or different font?
   - Look at how your thoughts are organised by just looking at your headings and subheadings.
   - Do your headings comprise a hierarchy of ideas that moves from more general ideas to more specific ones?
   - Do the headings accurately predict the content that follows?

Write headings that give away the information that follows.

  e.g.
  Modelling skin colour
    An overview of concepts in modelling skin colour
    Using colour spaces in model development
    Current skin colour models
    The effect of ethnicity on skin colour

Test your headings out on someone – is their meaning clear?
You may need to add a few words to eliminate ambiguity.

  e.g. compare the value for the reader of the following headings:
    “Overview”
    “Concepts in modelling skin colour”
    “Skin colour”
    “An overview of concepts in modelling skin colour”

- Is the existing heading hierarchy suitable, or should there be an extra (or fewer) level of headings?

- Does the document flow well from one section to another, or does it seem disjointed?

- Is the order of the material suitable, or would it be clearer if rearranged?

- Are all abbreviations and contractions spelled out in the text (or a glossary), at least when first used (or when first used in each chapter)?

- Are there terms that need to be defined?

- Are tables and figures placed appropriately, and do they have appropriately worded captions?

- Is the tone and vocabulary of the document suited to its intended audience?

- Is the writing style clear and easily understood?
- Is the writing style wordy, pompous or full of jargon?

- Is there need for additional material such as background information or more detailed information?

- Might the information be more effective if one or more tables or diagrams were added?

3. When revising your drafts, try to read them as a specialist in the field (e.g. an examiner) would. Mark your draft with the following (or similar) symbols to help with the process of revision.

(?) lack of clarity
(c) check the accuracy of this point
(x) material that could be deleted
(r) repetitive
(e) evidence required
(i) interpretive weakness

C. Editing

“Editing is about getting your text in good shape for your reader” (Elphinstone and Schweizer, 1998 p. 85).

1. the key importance of paragraphs
   (a topic sentence that accurately conveys the point of the paragraph, clear signposting)

2. edit to strengthen your sentences
   a. Open with sentences that show intensity
      e.g. “This study was designed to reveal whether the …..approach was a useful was to solve the problem of …… We (the writer) reasoned that…..”

   b. Use short, well-planned sentences that convey information (ie be concise, avoid padding)

   A sentence is a group of words that makes sense. It comprises a subject, a verb and an object. The subject and verb should be located close together. The most important information in a sentence should be at the beginning. In general, the subject should come before the verb.

   Compare:
   “Using a specially constructed mould, a method of manufacturing these blocks in quantities sufficient for assembling representative structures, was developed.”

   “A specially constructed mould was used to develop a method of manufacturing these blocks in quantities sufficient for assembling representative structures.”
c. Over the whole document, make the average sentence length 15 to 20 words.

d. Take particular to punctuate so that your meaning is conveyed accurately.
   e.g. The lions having eaten the hunters, rested versus
   The lions having eaten, the hunters rested.

e. Use the active voice where possible
   e.g. “Interlocking structures were tested using a loading frame (active)
   A loading frame was used to test interlocking structures (passive)

f. Explain concepts rather than use labels to describe them. Labels are
   clusters of nouns and adjectives that are not linked or broken up by verbs and
   prepositions.
   e.g. “In aquatic systems, the phytoplankton space-time distribution is
   influenced by
   versus
   “In aquatic systems, the distribution of phytoplankton in space and time is
   influenced by….”

  g. Use the correct tense

  You will use the past tense most often in writing your thesis, because you are
  reporting on events done in the past (i.e. earlier this year), or on the past
  research of others
  e.g. This was a study to determine if….  
      Johnson and Smith (2003) found that…

  Use the present tense for giving a fact or principle
  e.g. Perth is in Western Australia
      Children read faster as they gain experience

  Use the future tense (or future perfect) in proposing a study or some aspect of
  it
  e.g. I will use an algorithm to…
      Analysis of variance will be used to…

  Use the present perfect tense to refer to ongoing states of mind or actions
  e.g. Lambers has been arguing that…
  BUT use the past tense to refer to persons who are no longer active in the
  debate   e.g. Darwin argued that…

  h. When using pronouns (it, they, this, these, he), especially at the beginning
  of sentences, make sure the reader is clear about the noun they are
  replacing. Avoid ambiguity by making the antecedents of pronouns obvious.
  e.g. “This formula is correct.” rather than “This is correct.”

D. Proofreading
Checking accuracy and consistency in use of language, in style and layout

- Is the heading hierarchy and heading numbering scheme consistent?
- Are abbreviations and contractions used in a consistent manner?
- Is the formatting of captions in Figures and Tables consistent?
- Have you been consistent in the way you’ve used hyphens?
- Are footnotes formatted in the same way, are they sequentially numbered?
- Is header and footer formatting consistent?
- Have all sources been acknowledged in a consistent way?
- Are there errors of grammar, spelling or punctuation?
- Are page numbers correct?
- Amend any sentences in which the meaning is unclear.
- Update Table of Contents and Table of Figures etc and check that they match the actual content.

Adapted from:
North, T. 2003 e-writing and editing Course notes Part 11, IPAA WA Division
Writing Sandwich Exercise

Freewriting (10 minutes)

‘Although you start with a topic related to your research, you do not need to write continuously about that one topic. You can change topics. You can approach topics from different angles. You can go back to where you started, if you want. Many writers say this is like brainstorming in sentences. The only requirement is that you continue writing. Do not stop to revise, edit, score out. Keep going for the full five minutes and stop when five minutes are up.’

Freewriting is
• Writing for a short, defined burst of time
• In sentences
• Without stopping
• Without editing
• No structure needed
• Private writing (for your eyes only)

Prompts
What writing have I done and what would I like to do?
Where do my ideas come from?
How does what I read compare with my own views?
What do I want to write about next?
Why do I have nothing to write about?
What questions do I have about my research?

Discussion (10 minutes)

Talk in pairs about your writing. You could talk about process, techniques, routines, plans for future writing or your current topic for writing.

Generative Writing (10 minutes)

‘Generative writing is more closed than freewriting, more focused on one topic. Unlike freewriting, it can be read by someone else – though this is optional…’

Generative Writing is
• Writing for a short, defined burst of time
• In sentences
• Without stopping
• Without editing
• Sticking to one topic
• Can be read by someone else

Prompts
Pick a topic from your freewriting or discussion

Giving Feedback

Clear

Reflection questions:
- Do I understand the message?
- Is the meaning clear throughout?
- Is the organisation transparent?

If you don’t understand the message, it could be that the message is not stated simply and directly.

TIPS:
- Ask your writing partner to explain what they are trying to say in the simplest and most direct way possible.
- Check that the writing includes an introduction that explains the main message and outlines the order of what follows.
- Check that each paragraph begins with a topic sentence that introduces what the paragraph is about.
- Ask your partner about the meaning of any terms you don’t understand, or words used in a way you haven’t seen them used before.
- Suggest they define or explain important terms, and check that they have used all words appropriately.

Cohesive

Reflection questions:
- Does everything seem relevant to the main message?
- Do the ideas stick together and link well with one another?
- Does the writing flow smoothly?

If the writing doesn’t seem to hang together, it could be that the writer hasn’t used cohesive devices (transitions, conjunctions and pronoun references) effectively, or that not all of the information is relevant.

TIPS:
- Ask your writing partner to explain how the ideas are organised and how they are connected to one another.
- Check that the writing seems predictable, with sufficient signals to indicate what is coming next, and whether the transitions, conjunctions and pronoun references are appropriate, clear and effective.
- Check that each section is only about one main message stated in the introduction and that each paragraph is only about one topic stated in the first (topic) sentence.
- Point out any information that doesn’t seem to belong.
Convincing

**Reflection questions:**
- Is the message convincing?
- Is the evidence sufficient to support the writer’s message?
- Does the logic make sense?

If the writing doesn’t seem convincing, it could be that the writer hasn’t provided sufficient explanation or evidence to support ideas, or hasn’t presented this evidence in the most effective manner.

**TIPS:**
- Ask your writing partner to explain why they reached the conclusions they did and why they organised material in the way they did.
- Check each paragraph furthers the writer’s main message.
- Check that paragraphs are arranged in a logical order and that there are no gaps or inconsistencies in the logic.
- Check that each paragraph includes sufficient explanation and evidence to fully support its main idea.
- Check that the logical connections between ideas are clear.

Well expressed

**Reflection questions:**
- Does the writing seem technically correct?
- Is it expressive and engaging?

If the presentation or expression seems faulty, it could be that the writer has not used writing conventions appropriately, or the best words and sentence structures to express their meaning and to engage their readers.

**TIPS:**
- Check that the text is divided into clear paragraphs, and that paragraphs are not over length (more than half a page, approximately) or under length (less than three sentences).
- Check that sentences each contain a subject and a complete verb, and a verb completer (object or complement) if required, and that they begin with a capital and end with a full stop.
- Encourage your partner to vary sentence length.
- Explore ways in which they can use more active voice.
- Suggest that they keep nouns and verbs as close together as possible.
- Check that modifiers (including noun clauses) are as close as possible to the words they modify.
- Help them ensure that the words they use are as concrete and precise as possible.
- Point out any errors in grammar, spelling, capitalisation, punctuation, or referencing that you notice.
Writing as part of a research routine

Academic writing is iterative and incremental. That is, it is written and rewritten numerous times in a number of stages.

What forms of writing will you be undertaking in the next six months?

How can you integrate writing into your daily routine?

What tips and techniques for writing can you share with the group?