Best Practices for Writing Scientific Articles and Article-Based Dissertations

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Outline

Part 1: Developing a Writing Practice

Part 2: Work-flow for articles

Part 3: A Few Comments on Article-Based Dissertations

Part 4: Q&A

Part 1: Developing a Writing Practice

- Questionnaire exercise

- Organization is the key to productive writing

- Time and project management, motivational strategies

Writing Practice Handout

- Creating your own Structure questionnaire

Writing Practice Handout

- Are you writing regularly, with reasonable ease?
- Are you able to focus clearly on your writing?
- Are you reading too much? Enough?
- Are you well enough organized so you can get your work done without having to step over either psychological or literal obstacles?
- When do you work best? (am, pm)
- When do you have lots of energy?
- Where do you work best? (on, off campus)
- What kind of setting is most agreeable for writing? (library, home office, café, lab, bed)
- What kinds of rewards would be economically feasible and would entice you to write?
- Do you assess progress by pages written, time spent, or ideas worked through?
- What speeds you up? What slows you down?
- Do you know roughly how much you can write in a certain period of time?
- Is your pace one that you can maintain over time? Will it allow you to finish on time?

Organization: Project Management

- Make use of electronic file systems for organizing materials (references, other grants, conference abstracts, raw data figures)

- Create a method for tracking your writing: at the end of each writing session, make notes on what you have accomplished and where you will start tomorrow

- Break the writing into manageable parts:

  - Think and write in subheadings/sections, not chapters

  - Revise in the same way (fight the urge to "edit at the sentence level")

Organization: Time Management

- Balancing research and writing

- Construct a dedicated writing time and space

- Setting deadlines (external accountability)

- Devise a writing schedule you can follow

Staying Organized with Strategies

General Writing Tips

- Find and review examples of prior dissertations in your lab/department

- Make communication with your advisor and other committee members a high priority

- Make use of peers and other faculty mentors for discussion/editing

- Make use of GWC writing consultants

- **WRITE REGULARLY** --even 15 minutes a day of writing will keep you actively thinking about and working on your project

Part 2: Work-flow for Scientific Articles

RESEARCH ⟷ PLANNING WRITING ⟷ REVISION

RESEARCH

- Experimentation and data collection
- Data analysis
- Summarize and organize your experimental notes
- Create opportunities to organize your data for presentation (I.e. talks, posters, lab meetings)-- this will help in preparing for writing IMRD style papers (chapters)
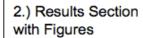- "Stay close to your data"

PLANNING

- Literature review
- Identification of missing pieces in a scientific story (holes in the literature)
- Compile an annotated bibliography with main findings and methods from all relevant papers
- What is the most logical progression of experiments?
- Develop testable hypotheses
- What are some potential pitfalls in experimental design or with expected results

WRITING

1.) Methods Section

2.) Results Section with Figures

3.) Introduction Section

4.) Proofread and Revise I, M, and R sections

5.) Discussion Section

Proofread and Revise all sections

6.) Abstract

REVISION

Source grant proposals, other pubs from your lab for specifics

Writing figure captions can help in improving text revisions

Overall summary; questions to be answered; outline of present set of expts.; describe literature based rationale for study; set up hypotheses to be tested

IMRAD Format: Intro, Methods, Results, Discussion

GENERAL IDEAS
- Planning stages turn into components of the introduction and some parts of discussion
- Research stages turn into components of methods, results, and figures

Part 3: Article-Based Dissertations

- Format

- Considerations

- Practicalities

Writing a Article-Based Dissertation

Format:

Chapter 1: General Introduction

Chapter 2: Study 1

Chapter 3: Study 2

Chapter 4: Study 3

Chapter 5: General Discussion

- Each chapter contains a stand-alone introduction, methods, results, discussion, tables and figures, and references sections

- Chapters 1 and 5 may be based on previously written works such as review articles or book chapters

- Helpful to include specific aims from dissertation prospectus in Chapter 1

- General Discussion might include sections like summary, implications, and future directions

Writing a Article-Based Dissertation

Things to Consider:

- Do you have enough common methods across studies to warrant a general methods chapter?

- Are you prepared for there to be some repetition in the individual Introduction sections?

- How do the studies flow from one another? Is there a narrative that can be woven across the chapters?

- You will need to communicate with your advisor on a more regular basis than at any previous time during your graduate work

Writing a Article-Based Dissertation

Practicalities:

- Make an Outline!

- Start earlier than you think you should!

- Use file systems to keep chapters and preliminary pages organized

- Making a table of contents is very time consuming (manually is probably best option)

- Tables and Figures:
  - Can't be repeated across chapters
  - Easiest to have them appear at the end of each chapter rather than embedded
  - Captions on same page

Writing a Article-Based Dissertation

Practicalities:

Copyrights and Permissions

- Must obtain permission to reproduce figures and text from previously published work, even if it is your own work!

- Permissions are most commonly obtained by emailing the Journal's Permissions Department (found on Journal's webpage)

- You will still be able to file without having all necessary permissions on hand, but this slows public access to your dissertation

- Reprints versus. Copying and Pasting Text
    - Using reprints seems like too much work (formatting, pagination)
    - I suggest using the Word version of your previously published paper

Part 4: Questions

UCLA Writing Resources

Graduate Writing Center (GWC)

Individual Writing Consultation Appointments

http://gsa.asucla.ucla.edu/gsrc/gwc/index.htm

Quarterly Workshops

http://gsa.asucla.ucla.edu/gsrc/gwc/events/gwc_workshops.htm#Sci

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