Writing a Dissertation

The Postgraduate Student and the Practice of Writing for Theses, Papers and Other Research Documents.

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What is Research ?

- Research is an *Original Contribution to Knowledge*.
- You must show two things
  - Identification of an unanswered question
  - The Answer !
- Supervisors and other academics provide guidance on the difficulty of the question.

Being a Good Graduate Student

- There is no Prescription on how to achieve a good result.
- Process of doing research is unstructured.
- By definition you seek an undiscovered country.
- Importance of planning, avoids headaches
  - Do I need the aggravation ?
  - Are the tools and supervision available ?

The Place of Writing

- Write early, write often !Writing is thinking.
- Never get it right first time, two approaches
  - The bricklayer
  - The dumper
- Generally best to hybridise
  - Outline
  - Draft individual components
  - Polish

The Habit of Writing

- Establish a process.
- Avoid binges, a little and often, after reading a paper, not immediately though.
- Analyse how you spend your time, not how you would wish to, it is very telling.
- Make a plan for each stage of the thesis.
- Anything worth having never comes easy!

Making it Readable I

- Use ***consistent terms***
  - in quantitative study, use same term for variable
  - avoid synonyms
- Structure ***thoughts***
  - Umbrella thoughts (the central ideas)*
  - Big thoughts (reinforce, clarify or elaborate)
  - Little thoughts (support & reinforce big thoughts)
  - Attention thoughts (roadsigns, on track)*

Making it Readable II

- ***Coherence*** lends readability
- Sentences should be *ordinal* in character
- See the hook-and-eye technique of analysing sentences and paragraphs in Creswell [CRES]
- Use active voice as mush as possible
  - If the subject acts, the voice is active, if the subject is acted upon, the voice is passive

Making it Readable III

- Trim the fat in successive drafts
- If the eye pauses, the mind stumbles
- Get someone else to read your work, someone picky, knowledgeable and someone that you respect. Never argue with this person about their opinion on what you have written !

How to do Research

- Doing research is like nothing else !
- It's a grind
- Hard to stay motivated in a vacuum
- Contact with others (supervisor & other students) important
- Hard parts are finding topic & writing up
- Working on topic ***may*** be quite mechanical

Daily Grind

- Many operations involved
  - reading papers
  - writing reviews of papers & tracking papers
  - discussing ideas
  - having brilliant ideas and discovering which ones are worth bothering with
  - living in a dreamlike state, off with the fairies !
  - keeping a journal

Strategic Grinding

- Be selective in what you read
  - find appropriate conferences
  - quiz your supervisor or academic staff member
  - scan before reading, read abstract and conclusions first
  - if it still looks interesting, read and read again
  - summarise the ideas in journal or whatever
  - its normal to be overwhelmed

Evaluating Papers

- Did the ideas described really work?
- Cut through the jargon, are there any interesting ideas underneath it all ?
- What motivated the authors ?
- What choices were open to the authors ?
- Validity of assumptions ?
- What was their result ?
- Any future directions ?

Staying on Top

- A routine, daily, weekly helps to keep you focused, working and motivated.
- Avoid telling yourself you ***should*** have a topic, ***should*** have 3,000 papers read, ***should*** work 10 hours a day, etc.
- Divide and conquer.

Finding a Topic

- Try writing abstracts on topics which interests you, gather together a few core papers. This will sort out ideas.
- Look at the future work section of papers and other dissertations, Masters and PhDs.
- ***Rightsize*** your dissertation problem
- Take something which interests you and start **NOW** !

Finding a Supervisor

- What is the research gamut of the potential supervisor ?
- Try to attend research seminars run in the department, get to hear them
- Can you relate, will they give you the right amount of independence, interview them
- Perhaps two supervisors are appropriate

What is a Postgraduate Thesis ?

- Useful contribution to knowledge !
- Readers will ask
  - what is the question here ?
  - is it a good question ?
  - is it adequately answered ?
  - is there a contribution to knowledge here ?

Justifying your Efforts

- Clearly state the question
- Originality proven by
  - thorough review of topic and closely related topics
  - reference review to demonstrate that
    - question not previously answered
    - it is worth answering

How to Organise Your Thesis

- The Thesis forms the central element of the research component.

Writing the Thesis I

- Does not usually happen in two phases, work\write
- Can be highly iterative
- You will have a range of tasks, keep a few for when you do not feel like tackling the awkward ones.
- Develop an outline, not on tablets of stone

Writing the Thesis II

- Audience will be less knowledgeable that you !
- Explain motivations, goals, methodology, make no assumptions about readers
- Get feedback
  - supervisor, seminars, conference RFPs
  - friends and other researchers
  - give feedback too

The Generic Thesis Skeleton I

- Abstract
  - general introduction
  - summary of the question
  - justification for question
  - birdseye view of the result
- Background information
  - particularly if you span two or more traditional areas (the best dissertations often do)

The Generic Thesis Skeleton II

- Literature review
  - state of the art
  - organised by ideas, not time\author\geography
- The research question (core/foundation)
  - concise statement of question
  - justification, refer closely to review (analysis)
  - explain why question is worthwhile (applicability)

The Generic Thesis Skeleton III

- Description of solution\methodology
  - Possibly many sections
  - Aim to show that question has been fully answered
  - Show relevance of work to solution
  - Avoid detailing blind alleys unless they contribute to showing that question is answered

The Generic Thesis Skeleton IV

- Conclusions, generally in three sections
  - conclusions
    - short concise statements of inferences made as a result of the work done
    - conclusions must be directly related to the research question\problem raised previously
  - summary of contribution
    - examiners will scrutinise this section
  - future research
    - useful to people following in your tracks

The Generic Thesis Skeleton V

- References
  - closely tied to the review done early in the dissertation
  - examiners usually check out this section early on and will form preliminary assessment notions early, so pay attention
  - references must appear in the main body
  - use the guidelines published by DCU

The Generic Thesis Skeleton VI

- Appendices
  - material which casts light on the work done but which would impede the clear delivery of ideas
    - mathematical proofs
    - program listings
    - huge tables of data

How Long Does it Take ?

- How long is a piece of string ?
- Writing up is one of the ***MAJOR*** activities of doing research
- Organisation of ideas is the hard bit
- You will find weaknesses\flaws only when you go to write up, then you must fix them
- Allow approx. 30% of time for writing up

Think of the Reader

- Make no unreasonable assumptions about your audience
- Examiners hate to be made to work hard to understand poorly named sections, organise ideas from your work and wade through bad grammar

Do I Need to Write an Ocean of Code ?

- Some dissertations are not based on proving of ideas by means of an implementation of a program(s), some are
- A dissertation may incorporate a survey, ***show*** that it is well designed and analysed, perhaps give listing of statistics package code and survey forms etc.

Is it Like Doing a PhD ?

- Expectations for masters from taught programs, masters by research only and PhD are on an sliding scale
- Look at other taught masters program theses for guidelines
- Ask lecturers for guidance as to which are the better theses to read, given your interests.

Getting Published

- It is a good idea to submit work to conferences
- Art worst you will get negative feedback, this is useful
- You may get published, reviewer comments are usually helpful in any case
- Guidelines for publication from conference organisers

References

- [CRES] Creswell John W. "*Research Design: Qualitative and quantitative approaches*". ISBN 0-8039-5254-6
- http://www.compapp.dcu.ie/~bstone/Writing.html
- Citing and Referencing, DCU Library (cost £1)