

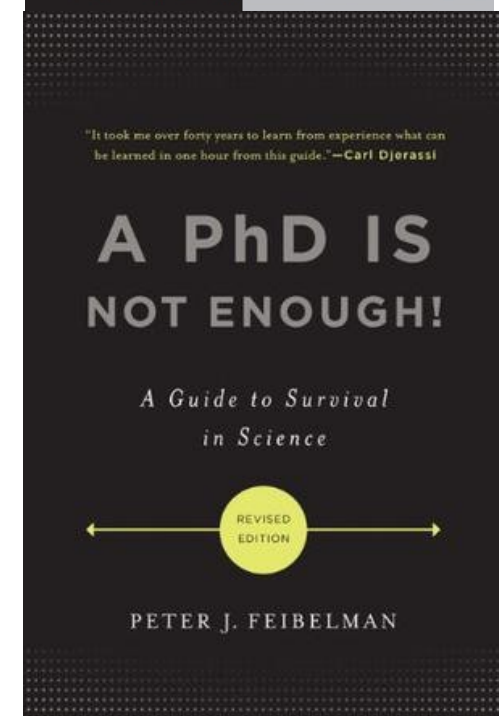
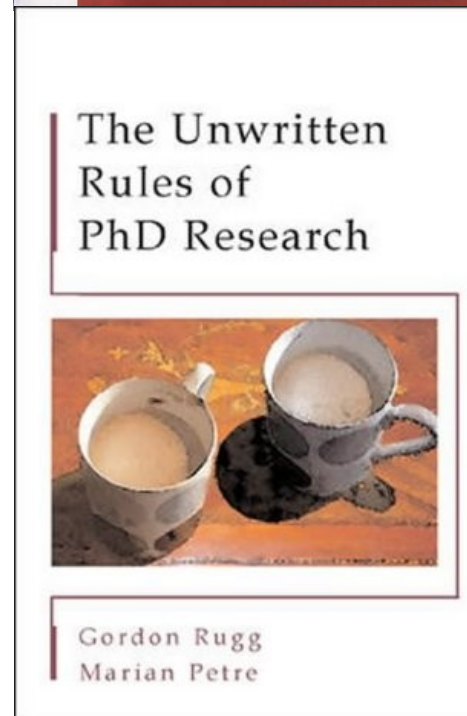
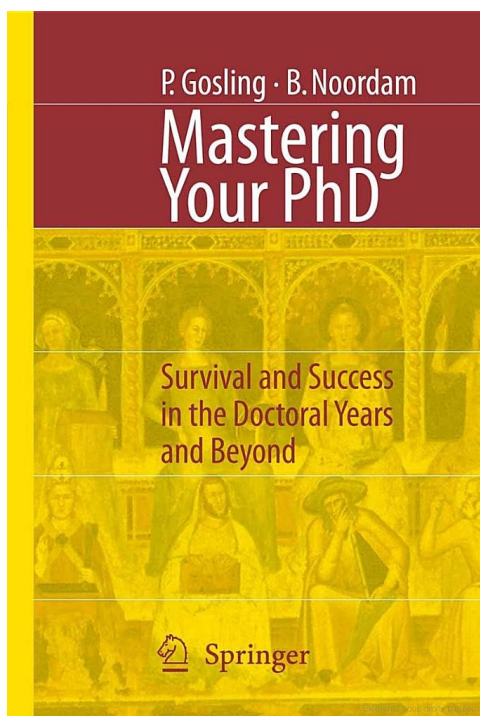
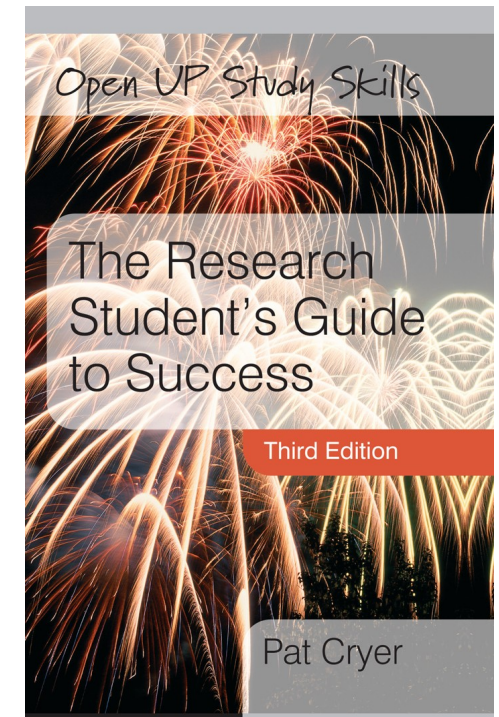
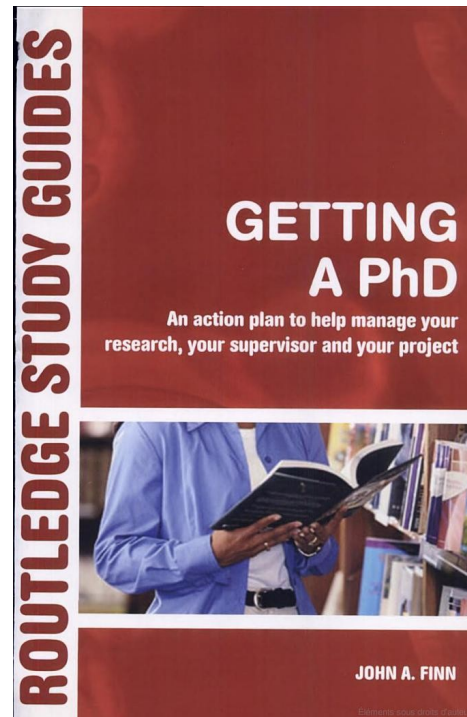
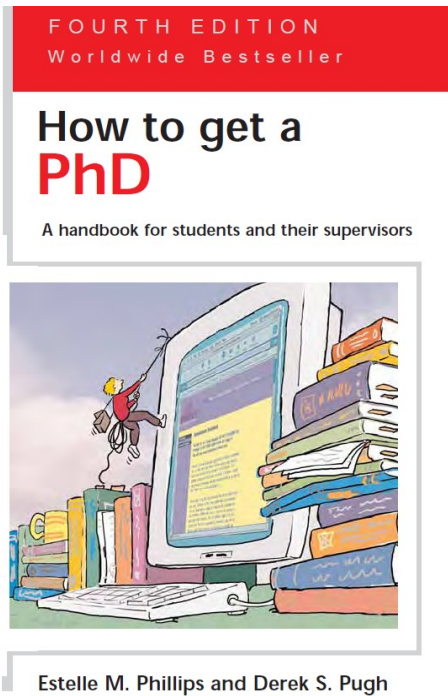
The PhD ?

The PhD

A learning experience in
research through doing
research.

- The Nature of the PhD Qualification
- A Practical Aspect of the PhD Process: Project Management
- You and your Supervisor

Bibliography



Introduction

Compared to their previous experiences, new PhD students face very different challenges and responsibilities, require **different skills** and must achieve **higher standards of performance**. Where do research students get such information?

Students find their information (and misinformation) about important issues in their doctoral project from other research students, supervisors, research staff, and a variety of fragmented sources! Hence, in general, confusion, frustration, inefficient research, etc., where there is no guarantee they have at the end the “right picture” about the PhD degree.

One of the most frequent laments of the PhD student is: 'Why didn't someone tell me that earlier?'

I- The nature of the PhD qualification

Graduate education:

- well-defined curriculum (lecturers)
- Handouts, textbooks and exams

The ways of working which proved effective for taught courses are no longer enough. New skills and strategies need to be developed. In the PhD education: **you** design the curriculum for your PhD project (with assistance from your supervisor)

New PhD students commonly consider – **mistakenly** – the PhD to be a single great piece of work that makes a major contribution to the research discipline.

I- The nature of the PhD qualification

The implicit expectation of a PhD degree is that the doctoral graduate is capable of independently conducting original research (master the development and understanding of uncertain knowledge) of a standard that is expected of professional researchers in their particular discipline.

The process of the PhD (learning and practice of high-level research skills) is at least as important as the product of the PhD (the research findings in the thesis).

*“You are not doing some research for its own sake; you are doing it in order to **demonstrate that you are a fully professional researcher**, with a good grasp of what is happening in your field and capable of evaluating the impact of new contributions to it – your own as well as others’. That is what you get the doctorate for.”*

I- The nature of the PhD

Professional researcher means you can do the following:

- Can produce research that is of interest to other professional researchers.
- Have a command of the subject (to the extent that you can evaluate the work of other researchers).
- Are clever enough to identify where you can make a useful contribution.
- Are able to communicate your results at a level that is appropriate to an audience of professional researchers.

The award of a PhD degree is a recognition of both your ability and status as an independent researcher, and your learning and implementation of high-level skills

I- The nature of the PhD

Independence:

The PhD graduate is expected to be able to conduct advanced research without supervision, and be capable of identifying research questions of relevance and significance, designing an appropriate and feasible methodology to test such questions, and communicating the research findings at a level of significant scholarship.

Note: the supervisor has a significant role as a guide from whom a certain amount of assistance can be expected. The requirement for independence is certainly not a justification for a supervisor to neglect their responsibilities; however, there are limits to the assistance that a supervisor should provide.

II- Some Practical Aspects of the PhD process

A PhD requires extended study and intense intellectual effort. A strong motivation is mandatory! (do you really have a burning curiosity to find out the answers to your questions?)

- First, you must master a specific subject completely. To master it, a student searches the published literature to find and read everything that has been written about the subject (books, arXiv preprints, scholarly journals, summer school slides, conferences slides, etc.) During a PhD, **you have to do a lot of reading**. This should start from day one to the end of your thesis.

Note: knowledge = structured and organized information \neq pieces of information

“Science is built up of facts, as a house is with stones. But a collection of facts is no more a science than a heap of stones is a house.” (Henri Poincaré – **Science and Hypothesis (1901)**)

II- Some Practical Aspects of the PhD process

- Second, you must extend the body of knowledge about that subject. To extend knowledge, one must explore, investigate, and contemplate. In scientific disciplines, research often implies experimentation, but research is more than mere experiments – it means interpretation and deep understanding.

Note: **don't be fooled by the 'activity trap'**. You must not be trapped in and only focused on your daily work of your PhD subject. See next slide.

True Story: the PhD Technician

L. spent two postdoctoral years at a prestigious lab, switching into a new field. He had been hired as a postdoc there because of the technical know-how he had acquired via his thesis work. As a postdoctoral scientist, his task was to build a piece of equipment combining technology in his new area with that of his thesis work. The lab where he did his stint as a postdoc was well-enough satisfied with him. At the end of his two years, the desired instrument was in place, and L. had his name on a couple of publications with his postdoctoral adviser. Of course it was recognized that L. had not really learned the basics of his new field, and so his postdoctoral employer did not offer him a permanent position.

A more aggressive or aware young man might have spent a significant fraction of his two years not simply building the desired instrument, but rather asking questions about the direction of his new field, reading as widely as possible in its literature, and formulating a research direction of his own. L. did not, however, and even at the end of his postdoc, no one had told him, nor did he realize that becoming an expert in a field and having an exciting research program is an essential aspect of being a scientist.

(Peter J. Feibelman – A Ph.D. Is Not Enough p 9-10)

independent researcher ≠ specialized research assistant (“PhD technician”)

II- Project Management

Proper planning and effective time management (“**timing is everything**”):

→ **Formulate a working plan, set up a schedule and set targets:**

→ Set up a to-do list

→ Prioritize: give high and low priorities

→ **Monitor your progress month by month** (three years are a short time!):

→ Time spent on an activity. Is it a high or low priority task? Does it suit with your schedule?

→ Is it part of my doctoral thesis or a non-research work?

→ **Start compiling a bibliography from day one** and build it up as your work progresses

Full-time PhD studentships are typically for a period of three years, so you have a finite period of time available. Your plan must include a realistic and feasible time schedule, or **you risk running out of time, which may result in sub-standard work**. **The lack of proper prioritization is one of the main pitfalls on the road to getting a PhD.**

III- You and your Supervisor

Throughout your PhD project, your **supervisor** will be a key figure as

- an **intellectual guide**,
- research mentor,
- a source of administrative information
- an interface with the formal university procedures.

Many students only have vague ideas of what they can expect from their supervisor (and what their supervisor can expect from them). **Such ambiguity is a recipe for misunderstanding, frustration or even conflict.**

Your supervisor is here to guide you (advisor!) in your research project as a whole but not to do your research project. To conduct a research program requires discussing with many people, not only your supervisor. Find the best expert(s) to help you on a specific question/work.

The availability of your supervisor's advice and guidance is not a substitute for your own efforts to manage and assess your progress.

III- You and your Supervisor

What supervisors expect of their doctoral students:

- Supervisors expect their students to be **independent**
- Supervisors expect their students to produce written work that is not just a first draft
- Supervisors expect to have **regular meetings** with their research Students (and vice versa)
- Supervisors expect their research students to be **honest** when reporting on their progress
- Supervisors expect their students to **follow the advice** that they give, especially when it has been given at the request of the postgraduate
- Supervisors expect their students to **be excited about their work**, able to surprise them!

Conclusion

- 'under your own management' is the key to the nature of the doctoral education (= becoming an independent researcher).
- You need to develop new skills (not only 'doing research') to become an independent researcher (beware of the 'activity trap').
- The project management proverb: 'failing to plan is planning to fail'.
- Your supervisor is a guide in your learning experience of becoming a fully professional researcher.

One implication of such responsibility is that your motivation for undertaking a research degree is essential for your success. You will need to persevere through sometimes tedious and repetitive work and at other times some very challenging and difficult periods of study.

Good luck!