

Writing a dissertation

Don't worry if you haven't got a clue, **Paul Stephenson and David Brigden** present a step by step guide to completing one successfully

Things to do...



dissertation

The dissertation forms the cornerstone of most undergraduate degree programmes. It provides the student with an opportunity to develop research skills and critical thinking techniques; it is also often the first real test of a student's report writing skills. Given its importance, it is perhaps surprising that many students do not know what a dissertation actually entails—that is, of course, until they've done one. Unfortunately, many students get to grips with the process only through experience, and the first one can therefore be an uncomfortable and steep learning curve.

The dissertation has played an increasingly important part in undergraduate medical education. This is a direct consequence of the General Medical Council's recommendations set out in *Tomorrow's Doctors*, which says that the GMC "expects" between 25% and 33% of a standard five year course to include student selected components. These components should give the student the opportunity to^{w1}:

- Learn about and begin to develop and use research skills
- Have greater control over their own learning
- Study topics of particular interest outside the core curriculum
- Develop greater confidence in their own skills and abilities
- Present the results of their work verbally, visually, or in writing
- Consider potential career paths.

Given the above list of criteria it is perhaps not surprising that the student selected component is often synonymous with a dissertation. However, it should be emphasised that this is not necessarily the case. The student selected component can be presented verbally or visually (as well as in writing); *Student BMJ* has published articles on these topics.^{w2-w6}

This article therefore discusses how to research and write up a dissertation. It is aimed at medical undergraduates without experience of writing long essays; it may also be useful to any medical professional who feels their writing methods could be improved.

We consider the dissertation process to include three main activities: planning, searching the literature, and writing up.

Box 1: What a dissertation entails

- Background reading
- Searching the literature
- Drawing up a questionnaire
- Doing interviews
- Statistical analysis
- Tabulating results
- Writing up
- Compiling a bibliography
- Proofreading
- Binding

Planning a dissertation

The key is to approach the planning systematically. The following are aspects you may wish to consider:

- List all activities involved in completing your dissertation (box 1)
- Order items chronologically, noting which can proceed simultaneously as opposed to those that have to occur sequentially
- Estimate the time that each item is likely to take.

- Also remember that your dissertation needs to fit in with other commitments. (It is often useful to set out a visual representation of your dissertation on a calendar.)

One clear way to make sure your dissertation is achievable is to have concrete aims and objectives in mind. These should be as SMART as possible:

- Specific—having just one indicator
- Measurable—show a change from the baseline
- Achievable—be realistic and fit with timescales
- Relevant—move the project towards its goal
- Timely—divide up into milestones.

The aim can also help formulate the title of your work, which should be explicit without being too wordy. In the title seek to indicate:

- Subject area
- Specific aspect of analysis
- Method of analysis
- Any geographical or historical focus.

To write a good dissertation is challenging but ultimately rewarding. Remember that to achieve this goal planning and preparation are essential.

Literature search

Research in its myriad forms is at the heart of many activities that underpin the quality agenda in the delivery of health care; it is also one of the central tenets that underpin continuing professional development. In this section we consider the place of the literature search and propose a framework for doing the search.

A literature search may be done for many reasons (box 2). A proper literature search entails systematic exploration of relevant material already produced on a particular topic.

The following is a proposed approach which should help maximise your efforts.

Mind mapping

Use the mind map technique to put down what you know about a topic.

Draw up a search net

Having identified all the relevant terms you can now do a search strategy. Order your terms from the general to the specific so that you end up with a

Box 2: Why do a literature search?

- Discover what exists on a topic
- Increase your knowledge of that topic
- Use earlier work as a foundation or a springboard
- Find gaps, errors, or inconsistencies in previous work
- Generate ideas for your own work
- Avoid duplication of previous work
- Justify and lend authority to your work

linguistic net in which to “catch” relevant material. You can then alter the size of the holes in the net depending on how much or little you find. The figure shows an example of a hierarchy of search terms.

Many students prefer to start a literature search with the internet. However, it is always worth cross checking web based information against traditional sources; the internet is quicker, but the material is often less reliable. Journal articles also usually have a comprehensive bibliography, which allows you to build up a bank of useful references quickly.

Record your results

Keep a record of potentially useful articles you discover. Make sure you record all the details necessary for the bibliography that will form the end section of your dissertation. It is a good idea to document these details in the required format as you go along to avoid hours of painstaking work at the end. Be sure to know when to stop. It is easy to go on searching for new material, ending up with too much to read and too little time to do anything else.



Principle of the search net

Analysis and further research

What is the next step once you have all these references and information? This depends on the reasons for your search in the first place. For some it will be a process of analysing primary texts and building up an argument giving reasons as to why they agree or disagree with other writers. Others may use the findings as a platform for their own research.

This is why the literature search is so important: it shows not only what others have done but how they did it. As long as you reference your sources, it is quite legitimate to adopt or adapt other people's theories, approaches, or methods.

Writing up

Unfortunately, and there's no avoiding this, writing a dissertation takes time and often entails writing a number of drafts before your writing lucidly expresses what you intend it to. In practical terms, leaving writing up to some “mythical writing-up stage” near the end often means that work is submitted which is still only in draft format as there has been insufficient time to shape and craft your report. However gifted you may be at practical work or research, this might be difficult to prove if your written account is not of an equally high standard.

It is therefore important to start writing your dissertation from the outset and thereafter write regularly. The more time you have between getting down your first ideas and their final expression, the more polished the final version will be. And of course, you can write material in any order. So, make a start on the dissertation as early as you can, constructing a “shell” for it as shown in box 3. Get in the habit of making regular back-ups of all electronic files. It's bad enough losing

an hour's work when your computer crashes but to lose your entire work is heartbreaking.

Let your dissertation grow, rather than see it as an intimidating whole. Remember, the introduction is normally done last; it's only when you've been there that you can signpost the route for others.

Presentation

It is a good idea to decide on the look of your document at the outset. While a well written and presented dissertation is not necessarily a good dissertation, attention to the issues detailed in box 4 will certainly make it better.

And finally

The best reports are produced by students who are willing to criticise their own work. If a section of text is untidy, it will pay to make the effort to improve it. Equally, be prepared to take out a section of text if it is not necessary; don't stubbornly hold on to a well crafted paragraph just because it took you a whole morning to put it together. Above all, a good dissertation should be easy to read; it should flow from start to finish in a logical order. This is often where undergraduate students fall down.

Box 3: Structure of a dissertation

- Title
- Acknowledgments
- Abstract
- Contents
- Chapter 1: Introduction
- Chapter 2: Literature search
- Chapter 3: Methodology
- Chapter 4: Results
- Chapter 5: Analysis or discussion
- Chapter 6: Conclusions
- References
- Appendix

Box 4: Formatting and editing

- Begin each section on a new page
- Avoid having single, stray lines of text at the top or bottom of pages if they form part of a paragraph
- Use double spacing
- Write on one side of the page only
- Quotations and notes can be written in single line spacing
- Use standard default for margins; don't try to cram too much on a page
- Number tables, charts, and figures and add suitable captions
- Short quotations should be set apart in their own indented paragraphs
- Use lower case, normal font for your text (including quotations) saving italics and bold for headings and special words
- Justified text looks neater
- Material that is not part of the main argument (eg database sheets, computer printouts, questionnaires) should be included as an appendix
- Numbers from one to nine are conventionally written as words, with those greater than 10 written as numbers
- Generally, do not use abbreviations (unless defined earlier in the text)

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References w1-w6 are on student.bmj.com.