

# Five Steps To Writing an Outstanding PhD Thesis Proposal

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## Your Thesis Proposal Isn't Just About Getting Your Degree

I remember the time that I was in the process of writing a thesis proposal in my second year of graduate school.

It had to be 10-20 pages long, which was short compared to the length of the actual doctoral dissertation (close to 200 pages).

**Yet, I found myself stuck because as a relatively young student I had to propose how to do an extensive research project that would take years to complete.**

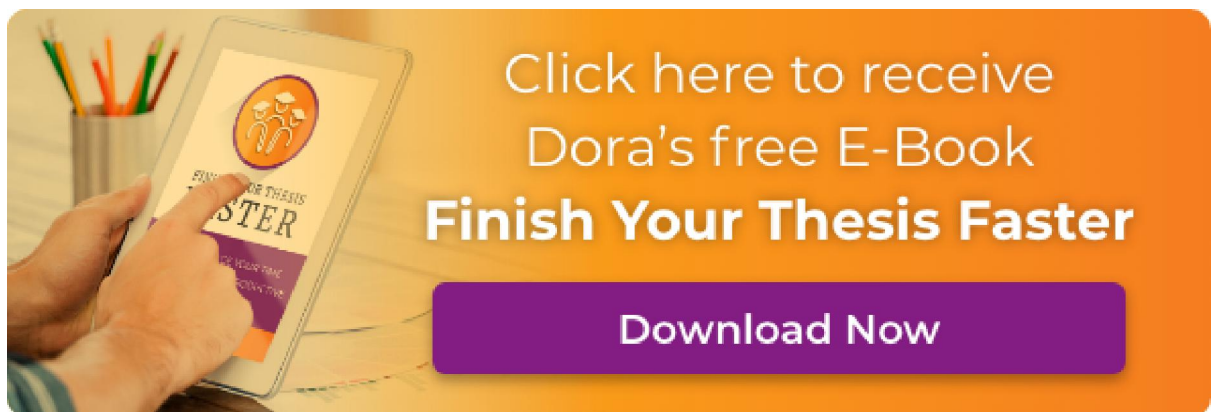
There was so much information in the literature and so many directions in which I could take my research, that it was challenging to nail down one project that would have a high chance of success.

**The irony of graduate school is that you are there to become an expert, but how do you come up with a plan for your thesis if you do not have any expertise to begin with?**

How are you even supposed to know what “acceptable” thesis proposal is?

After many discussions with my supervisor I finally selected a topic that:

- Was well-known to many faculty at my department so I had many resources
- Was realistic for my time frame
- Great learning experience to help me learn many different skills
- Had a relatively high chance of success.



While writing my thesis proposal brought me face to face with the worst case of Writer's Block I had experienced until then, I also gained a deeper understanding of the process of academic writing.

Through my years of helping graduate students finish their thesis on time, I realized that we always used the same process for writing a thesis proposal.

**This process is designed to help you draft a thesis proposal that can be completed on time and prepares you well for your ideal career.**

**Invest sufficient time into the process because the more you polish your proposal, the better you will understand the background, the methods, and the research questions.**

Depending on your school your thesis proposal can range from 5 to 80 (yes, that's not a typo) pages, but it needs to answer the following three questions

1. Where is the other side? (What is the purpose of my thesis? )
2. What resources I need to get there? (funding, expertise, information, equipment)
3. What steps do I need to take (and in what order) to get to the other side?

It is very rare for students to have answers to all three questions when they begin graduate school, but through **structured research the answers become clear with time.**

**Read on and find out how to write (or rewrite) your proposal so that you get approval from your committee and you get the experience that you want from graduate school to help you move on with your career.**

## Five Steps To Writing a Thesis Proposal

Is your thesis proposal already finished? No worries.

**You can still rescue yourself from the vicious cycle of diving into one dead-end project after another and getting more and more frustrated with each passing year.**

So, how do you write your thesis proposal so that you can graduate within a reasonable amount of time and get the training you need for your career?

**An ideal thesis proposal is one that is *robust and flexible*.**

You need to design your research so it is not easily swayed by Murphy's Law (anything that can go wrong will, and usually at the worst time).

Your thesis proposal is the blueprint for your thesis (and your life in the next few years), so plan a project that can be completed with the available resources in a reasonable amount of time.

### Number 1: Choose an area of research that you are excited about

When you begin writing a thesis proposal, your advisor might give you a choice of dissertation topics.

What criteria should you use to make this decision?

**The most important advice that former graduate students have given is that your thesis topic should cover an area that you are truly passionate about.**

Regardless of your field, you will have good days and bad days.

On good days you will be enthusiastic and motivated to work.

On bad days, you might question whether your research makes any sense, and you might even doubt your ability to graduate.

**If you pick a meaningful topic, the daily setbacks in your research will not bring you down.**

You will still be working in an important field, and you will be learning the skills and expertise necessary for your career.

## **Number 2: Select a project which balances novelty with established research**

Given that you want to finish your thesis within a reasonable amount of time, should you research a novel or “hot” area, or to go with a “safer”, better-understood topic?

**One way to answer this question is to visualize yourself at every stage of your thesis.**

How will you make it happen?

Can you gather the resources and complete the work by your proposed graduation date?

Most likely your project will take longer than you anticipated, so allow some flexibility to account for contingencies.

**The general rule of thumb is that things take 2-4 times longer than predicted.**

If you have little expertise, begin your work by exploring questions in well-understood areas.

For example, you could learn the basics of your field, by extending the research projects of previous students, or trying to reproduce their data.

**Starting your research in an area where the methodology has been established will teach you the necessary research skills for your field.**

Once you learn the basics, you can expand your research by exploring novel areas, and build your own unique niche.

## Number 3: Ask well-defined open-ended questions for your thesis

One of the mistakes that some PhD students make while writing a thesis proposal is that they ask “High-risk” questions.

The most common type of high risk question is a “Yes/No” question, such as “Is this protein produced by cells under these conditions?”

**The reason that Yes/No questions can be “high-risk” is that sometimes the answers are only publishable if the answer is “Yes”.**

Negative results are usually not interesting enough for publication and you could have spent months or years researching a question that has a high chance of not being published.

For many students open-ended questions have a much higher likelihood of success.

In the case of one student in Biology, he thought about asking a question such as: “Do cells produce a particular protein under these conditions?”

However, if the answer had been “No”, it would not have been publishable.

Instead, he phrased his research question as follows: “What proteins do cell produce in these conditions”? or “How does XYZ influence the production of proteins”?

Be sure that your question is well-defined.

**In other words, when you ask your thesis question, think about the possible outcomes.**

What results do you expect? Are they interesting and publishable?

To summarize this key point, consider the following when constructing your thesis question:

- 1) Ask open-ended questions
- 2) Be sure that your possible outcomes are interesting and publishable

## Number 4: Look for projects that are educational and incorporate marketable skills

Think about your progression through graduate school as a pyramid.

As the years pass, you become more and more specialized with fewer and fewer people being experts in your field.

**By the time you graduate you will be part of a small community of people who specialize in your particular area.**

On the other hand, you will probably need a diverse skill set after graduation, so it is important to avoid the common mistake of narrowing your pyramid too quickly.

It is not necessary to learn all the subspecialties, but do familiarize yourself with the background literature and technical skills in your field.

**Some students make the mistake of focusing only on finishing graduate school quickly, rather than taking advantage of the learning opportunities.**

One way to add marketable skills to your resume is to collaborate on a side-project.

For example, if you specialize in cell culture then it would be advantageous if you collaborated on a project that added a different but related skill set such as DNA/RNA work, liquid chromatography, mass spectrometry or imaging.

**If you browse through job listings you will get an idea of which skill sets employers look for.**

Collaborating on complementary projects will help you to broaden your marketable skill sets, and also help you in deciding which career path is best suited for you.

### **Number 5: Visualize your finished publication(s)**

A physics PhD student I worked with had an advisor who outlined each paper even before the research was started.

He wrote down what questions he wanted to be answered, and what each graph and table should show.

This method was so helpful for the student, that he still designs his research papers in advance.

As you are in the process of writing your thesis proposal draft some preliminary answers to the following questions:

- What is your central hypothesis or research goal?

- What is the motivation for this study?
- What have other groups contributed to this research?
- What methods do you need to learn to complete this project?
- What are the possible outcomes, or results, of this study?
- What will your tables and graphs show?
- How does this work contribute to your field of research?

**Visualizing your publications while writing a thesis proposal will motivate you to work, because most graduate students feel a sense of pride when they hold their very first published paper in their hands.**

Most likely, the answers to the above questions will change with time and you might have several setbacks or forks in the road.

Fortunately, most students become more efficient as they progress through graduate school.

**Your cumulative experience will pay off during your last year when you are racing to finish your research and your dissertation simultaneously.**

In the meantime, work on defining your questions and methods meticulously, so that you will have a realistic plan to work with.

The last step in the process, “Visualizing your finished publications”, is probably the most important one in the 5-step process of writing a thesis proposal.

First, visualizing the end result of a major project is very motivating in itself. Second, publishing a paper is one of the most important steps towards earning your graduate degree.

Most PhD programs require at least one publication.

When you structure your research, and the writing of a thesis proposal, by asking the right questions, you will be able to design a realistic project that can be completed in time and provides you with marketable job skills.

**....and finally remember that:**

The perfect thesis does not exist.

We are usually our own worst critics.

This is ironic, considering we are the only ones who know how much work we have put in already.

Give yourself credit for all the work you have already done.

Yes, there may be a long road ahead of you but consider this inspiring quote:

**“You didn’t come this far to only come this far.”**

If you made it this far, you have what it takes to go just one step further.

Everything that you have accomplished have brought you to this point in your studies and career.

**All of us wish that we had accomplished more than we have, but genuine confidence will come from realizing how far you have already come.**

**What is the biggest challenge you face when it comes to your thesis proposal?**