Information Literacy Resources for Curriculum Development

Information Literacy Committee

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Project Proposal

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How to write a project proposal?

Sources: http://www.wpi.edu/Academics/Projects/writeproposal.html
http://www.ehow.com/how_2002069_write-research-proposal.html
http://www.statpac.com/research-papers/research-proposal.htm

Project proposal is a widely used communications tool in the professional world. In undergraduate research, it is often used as an informal "contract" to establish an agreement about the content and limits of the research project.

Basic sections of a proposal are:
- Abstract
- Introduction
- Literature review
- Methodology
- Conclusion
- Acknowledgement (if any)
- References

Abstract

This is a brief summary of your paper of around 200 words. This includes the research question, the reasoning behind and your methods and predicted findings.

A three-part abstract might well follow this order.
1. First part introduces the project topic.
2. Second part states what material will be examined, procedures employed to carry out the project, and the significance of the procedures.
3. Third part states the anticipated conclusions (or results, application, or real world use of the project).

An example:

"This paper studies the problem that how patterns emerge in dynamic social networks where agents can freely changes their neighbors. We propose a new agent interaction model. This model composes a general learning algorithm and a neighborhood update rule called Highest Weighted Neighborhood (HWN) for agents to dynamically choose their neighbors who can maximize the agents' utility through all previous interactions between the agents and these neighbors. Comparing with the traditional models that networks usually are static or agents choose their neighbors randomly, our model is able to handle dynamic interactions between rational selfish agents. We prove that in 2-agent 2-action pure coordination games, our system will stabilize in a clustering state and at that time all relationships in the network are rewarded the optimal payoff. Our experiments study the speed of the stabilization in various conditions when the agents have different memory windows and update frequencies."

1. Introduction

This 1) states the purpose of the study, 2) demonstrate your knowledge of the topic and its importance, 3) describe any major issues and key research points, and 4) pinpoint the variables and explain any boundaries of the study.

For Abstract and Introduction, though the reader encounters them first, you probably should write them last since you will need to have mastered the other parts of the proposal to provide an effective overview.

The Introduction will be the first major section the reader encounters, so you want to make it as effective as you can to encourage further interest. The Introduction states the broad problem objectives, helps introduce the project subject, and explains why the problem is worth solving and who will be interested in the solutions.

Some questions to cover here are:
1. What is the project subject?
2. What are the goals of the project? the sub-goals?
3. How will the results be used?
4. What is the general method or procedure being used to conduct the project?
5. Sometimes a proposal and more often a report will contain an *Executive Summary* as the last part of Introduction. It will provide a succinct overview of each section of the entire paper.

1.1. Introductory paragraphs

Section 1 begins with a few short introductory paragraphs (a couple of pages at most). The primary goal of the introductory paragraphs is to catch the attention of the readers and to get them "turned on" about the subject. It sets the stage for the paper and puts your topic in perspective. The introduction often contains dramatic and general statements about the need for the study. It uses dramatic illustrations or quotes to set the tone. When writing the introduction, put yourself in your reader's position - would you continue reading?

1.2. Statement of the Problem

The statement of the problem is the focal point of your research. It is just one sentence (with several paragraphs of elaboration).

Example of a problem statement:
> "While the value of simulations as a tool in the natural sciences has been realized for quite some time, its potential in the social sciences is only beginning to be explored."

While the problem statement itself is just one sentence, it is always accompanied by several paragraphs that elaborate on the problem. Present persuasive arguments why the problem is important enough to study. Explain how the problem relates to real world. Try to give dramatic and concrete illustrations of the problem. After writing this section, make sure you can easily identify the single sentence that is the problem statement.

1.3. Purpose

The purpose is a single statement or paragraph that explains what the study intends to accomplish. A few typical statements are: The goal of this study is to...... overcome the difficulty with ...... discover what ...... understand the causes or effects of ...... refine our current understanding of ...... provide a new interpretation of ......, etc.

1.4. Significance of the Study

This section creates a perspective for looking at the problem. It points out how your study relates to the larger issues and uses a persuasive rationale to justify the reason for your study. It makes the purpose worth pursuing. The significance of the study answers the questions: Why is your study important? To whom is it important? What benefit(s) will occur if your study is done?

1.5. Research Questions and/or Hypotheses and/or Null Hypotheses

What is your specific research question(s) and do you hold any hypotheses or null hypotheses? No elaboration is included in this section. An example would be: The research questions for this study will be: 1. What are the attitudes of... 2. Is there a significant difference between...3. Is there a significant relationship between...

2. Literature Review

The Literature Review tells your audience what the state of the art in your topic is. It is important because it shows what previous researchers have discovered. You probably should tackle the "Literature Review" first since mastering it will give you the background you need to write other sections.

This section is usually quite long and primarily depends upon how much research has previously been done in the area you are planning to investigate. If you are planning to explore a relatively new area, the literature review should cite similar areas of study or studies that lead up to the current research. Never say that your area is so new that no research exists. It is one of the key elements that proposal readers look at when deciding whether or not to approve a proposal.

This section should also contain a definition of terms section when appropriate. Include it if your paper uses special terms that are unique to your field of inquiry or that might not be understood by the general reader. "*Operational definitions*" (definitions that you have formulated for the study) should also be included. An example of an operational definition is:

"For the purpose of this research, improvement is operationally defined as posttest score minus pretest score".

Good questions to answer in this section are:
1. What kinds of research have been done before (how do you find source materials through library)?
2. How have others gone about trying to solve problems you want to tackle, and in what ways will your approach build on and vary from previous work?

Think of the background section as the place where you identify and discuss the most important papers, books, or any other kind of source materials for your project. A well written review will provide a sense of critical issues and debates which form the background for your own original work.

Everything in your literature review section should be mentioned in your bibliography, **BUT** not everything in the bibliography is important enough to be mentioned in the literature review. In other words, this section is a comment on the most valuable material you have identified which you will need to assimilate to do your project. The literature review thus provides a guide to all material you list separately as bibliography.

3. Methodology

The Methodology lays out the method you have selected to conduct your research. The methodology is the heart of the proposal because it must tell the reader how you propose to carry out your project. It must convince me or your reader that you clearly understand your task, have a logical time plan for solving your problems, and have identified all the resources you need.

Some of the questions the reader will expect you to answer in this section are:
1. What are the tasks and sub-tasks identified to achieve your objectives?
2. What is your method?

3. Explain the implementation of your methods. Demonstrate your knowledge on the methods you used and explain how they benefit your research.
4. What data are needed for the project and how will they be collected? If the project requires a survey or interviews, the design of this instrument (especially the selection of participants) must be explained and justified.
5. What method or process will be used to analyze this data and where else (if anywhere) has this method or process been used?
6. Predict your results. You have no results at this stage, but it is suggested that you have some idea of the data you will collect and what kinds of procedures will be used to answer your question or hypothesis.
7. What time frame do you think you will need to accomplish identified tasks or subtasks?
8. If you are working on a team, which teammates will accomplish which sections?

4. Conclusion

This section discusses the potential impact of your results. Readers will want to know the benefits and possible drawbacks of your research.
1) Discuss the findings. Do your findings support existing theories? Explain why you think you found what you did. Present plausible reasons why the results might have turned out the way they did.
2) Present recommendations based on your findings. Avoid the temptation to present recommendations based on your own beliefs or biases that are not specifically supported by your data. Recommendations fall into two categories. The first is recommendations to the study sponsor. What actions do you recommend they take based upon the data. The second is recommendations to other researchers. There are almost always ways that a study could be improved or refined. What would you change if you were to do your study over again? These are the recommendations to other researchers.

5. Acknowledgement (if any)

Here to acknowledge any significant help you received, from colleagues or grants.

6. References

References usually consist of footnotes and a bibliography. Footnotes may appear a) at the bottom of the page, b) at the end of the chapters, or c) at the end of the report but before the appendices. Footnotes usually cite appropriate sources of information (including interviews or verbal contributions from others) or occasionally indicate cross-reference to additional material. The form of the note varies with the professional area concerned, so check with the journal or conference on which you publish.

The bibliography lists all materials cited in notes. Its value as a list of relevant materials often makes it useful to consult independent of the report itself (so be sure to check bibliographies in your sources for relevant materials.) Bibliographies are often used as the sole source for the full reference for footnotes; the footnotes very briefly cite the work in question (by author(s) and year, for example), leaving the full citation in the bibliography.