Psychology 211, Research Methods
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CONSTRUCTING THE RESEARCH DESIGN

The following components should be a part of your research design and ultimately your final research paper. Each component is described.

INTRODUCTION

- The specific aims of the project: what do you plan to accomplish?
- Discuss what question you will answer (what hypothesis you are testing).
- Make sure your statement of the question is clear and specific.
- Discuss how your proposed study will answer the question. (No specifics of methodology here, this goes in the next section.)
- Longterm objectives: How does this project fit into a larger framework? Write as if your study is one in a chain of many.
- Show that the experiment has some significance to our understanding of behavior.

Background/Review of the Related Literature

- Here is where your literature review is most relevant. How does this work evolve from the history surrounding it? Discuss what other people, who are interested in the same topic have done and found in the past, and show how your experiment emerges from their work. Perhaps you are replicating and extending past work, perhaps you think someone overlooked something important and you are going to investigate that something. Whatever the rationale behind your study, show that it is linked to what has gone before.
- It is your responsibility as a scholar to look into and understand the history of your topic and educate your reader about that history.
- Construct your literature review so that you are guiding the reader on a tour of the relevant past studies, showing how each fits into a logical train that leads toward your particular study. References to others' research should emphasize results rather than who did the work or peripheral details of method.
- The secret to the introduction is to be highly organized. Plan (e.g. outline) the structure before you write a single word. Each paragraph should focus on one step in the train of thought that ultimately leads to your study.

Methodology

- There are two critical questions to be addressed in the methodology: how will data be collected ? and, how will data be analyzed?

- This section tells, in extensive detail, how you are going to answer the question/hypothesis presented in the introduction. In terms of degree of detail, the goal is to make it possible for someone else to do exactly what you want to do without having to consult you further. Your goal is to show whomever reviews your plan that you know exactly what you need to do and that you are capable of doing it. This section should include discussion of the following (not necessarily in this order).

- **The Data Needed.** What observations or measurements do you need to make in order to answer your question or address your hypothesis? Be as precise as possible. For example, if your goal is to gauge students' attitudes toward professors, you can't simply say that you will "ask questions about student attitudes towards professors." Exactly what questions will you ask? How will you compile and evaluate all the answers in order to make some sense out of them? Will all students be asked all the same questions? Will they be allowed to make comments that don't necessarily reply to any of your questions? You should constantly ask such questions of yourself; this section is not finished until all such questions are adequately answered.

Data Location

- **How will the data be obtained.** Specify who your subjects will be, how you will select and recruit them, why you chose those subjects rather than others, whether your subjects will be divided into groups and, if so, how, where the data collection will take place, what will happen to a typical participant from the moment he or she is involved in the research until the moment the research is completed, etc. This section should also describe any equipment or special materials you will need to collect your data. (This dos not include standard supplies such as paper, tables, watches, etc.)

- **How will the data be analyzed.** What will you do with the observations/numbers/answers that you gather from each participant in order to address your research question/hypothesis? This is not simply an exercise in naming off statistical tests. You need to describe exactly what numbers will be processed by which tests, and why, and what should come out of the other end of your tests. Be careful to emphasize the purpose of the analysis, not the analysis itself. For example, do not write " a t-test will be used to see if the groups are different." Rather, write "the mean response times of each group will be compared, using a t test, to see if the experimental group responded more quickly..." You may need to justify your choice of analysis procedure if your data are amenable to more than one type of analysis. Do not confuse graphs and tables – which are extremely useful data display devices - with data analysis.

Expected Results and Future Directions

- What do you expect will happen? What results do you think you will get? These results will most likely lead you to ask other related questions – all good experiments leave one with more questions than one had originally - so this section should explore possibilities for future research. For example, suppose you find that sophomores rate their professors more negatively than juniors. Now you might wonder why that is so. Does increased experience with college change one's opinion of instructors? Are juniors just mellower people than sophomores? Are professors ho tend to teach upper division courses better teachers than those who focus on lower division courses? Each of these questions lead to further research.

- It is just as important to consider that you may not get the results that you expect. In this section try to anticipate possible flaws, confounds, limitations, etc. inherent in your planned research. Perhaps time limitations restrict your ability to follow your subjects' performance long-term, and perhaps meaningful differences between groups may not emerge for a year or so. Perhaps you assumed that your test or measurement technique is sensitive to the phenomenon you want to measure, but what if it isn't? Be sure to examine all of the assumptions inherent in your research study, and consider the possibility that they could be wrong.

References

- This last section of the paper should provide a bibliographic listing of all the research reports, books, review chapters, etc. to which you refer in the research design. Refer to the APA manual. Follow the APA format in all respects.