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PSC 502.01: MPA Research Methods

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PSC 502
MPA Research Methods
Spring 2008

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Important Notice for MPA Students: This course (PSC 502) and the applied research project (PSC 597) are no longer required for graduation. However, they are still strongly encouraged as electives. Many of our graduates insist that research skills are highly valued in the world of work. If you have any questions about this change, please email me.

Course Description

This course covers the essential ingredients for successfully designing and carrying out social science and applied research. These ingredients include defining the problem, formulating hypotheses or research questions, operationalizing key concepts or variables, and choosing appropriate methods for gathering and analyzing data.

Course Objectives

1. To understand the scientific method as a distinct way of "knowing reality".
2. To learn to distinguish social science research from applied research.
3. To develop skill in writing research designs.

Required Text

Chava Frankfort-Nachmias and David Nachmias, Research Methods in the Social Sciences (New York: St Martins, 2000).

This book can be ordered through the UM Bookstore and mailed to you for an additional \$6 (www.umtbookstore.com or call 406-243-1234).

Course Requirements

Lessons must be completed each Thursday by roughly midnight.

Students are required to read all assigned readings, participate on the discussion board, take one exam, and write two research designs.

Course Grading

Annotated Bibliography (20 points)
Design 1, Problem Statement Section(20 points)
Design 1, Research Hypothesis Section (20 points)
Design 1, Methodology Section (20 points)
Design 1, Final Draft (100 points)
Take-Home Exam (100 points)
Design 2 (100 points)

A = 353-380 points; A- = 342-352; B+ = 331-341 points; B = 315-330; B- = 304-314.

Weekly Assignments

Design #1: Social Science Research Design

Many educators and policy analysts believe that college students are not performing as well as they could or should academically. You are a political scientist who has noticed that the level of student performance is especially low in your freshman classes. As a social scientist, you decide to conduct research investigating the causes of variations in student performance levels. Your thinking is initially informed by an article by Trout, but you do additional reading to investigate this problem. Because of time and monetary constraints, you have decided to investigate the problem by surveying students in your Freshman-level American government course. You have also chosen a "correlational research design" in which your goal is to explore the effects of X (the independent variable) on Y (the dependent variable).

After reviewing the available literature, you begin the task of drafting your research design. It is roughly 8-10 pages in length (double-spaced) and is comprised of three sections: 1) Problem Statement; 2) Research Hypothesis(es); 3) Research Methodology.

Lesson 1 (Due Jan. 31)

The Scientific Method

Read the mini-lecture, read Chapter 1 (pp. 2-7 and 18-19) of the textbook, and skim chapters 5 and 6 to get a sense of what the three primary types of research design involve. Also, read Paul Trout's article "What Students Want" (on electronic reserve), and respond to the questions posed on the Discussion Board. Begin work on your Annotated Bibliography which is due Monday, Feb. 18.

Annotated Bibliography. Write a 4-5 page annotated bibliography (double-spaced) with 6-8 bibliographic entries. (An entry consists of the work's official citation and a 1-2 paragraph summary of relevant information, e.g., research findings). Paul Trout's article may serve as one of your entries (cite: Montana Professor, Spring 1997, pp. 12-19). Remember, you are looking for three kinds of information: 1) information establishing that your "research problem" really is a problem and holds considerable significance; 2) studies that have been conducted on your "research problem" (your dependent variable);

and 3) studies indicating the causes/explanations for the "research problem," especially the cause (independent variable) that you have chosen to focus your research on. As you read, keep the causes (explanations) clearly distinguished from the effect (your puzzling problem).

Lesson 2 (Due Feb. 7) Conceptualizing a Research Problem

Read the mini-lecture, Chapter 2 (pp. 24-31), and Melissa Wangler's Research Design on electronic reserve, and respond to the questions posed on the Discussion Board. Continue conducting research for your annotated bibliography.

Monday, Feb. 18 **Submit your annotated bibliography by email attachment.**

Monday, Feb. 25: **Submit your Problem Statement section by email attachment.**

Problem Statement: Remember that there is a certain logic that must be followed as you write your Problem Statement. First, you introduce the "puzzling phenomenon that begs for explanation" (i.e., The Research Problem). Second, you establish its significance, i.e., why it is worthy of study, what impacts it has on society, etc. Third, you acknowledge that research has identified many possible explanations for it, and then you identify the one explanation that "has received too little attention." Fourth, you review the existing research literature on the effects of X (the explanation that has received too little attention) on Y (your problem/dependent variable). Finally, you establish the purpose of the proposed research and the value that is expected from it.

Lesson 3 (Due Feb. 28) Identifying Variables and Developing Hypotheses

Read the mini-lecture and Chapter 3, and respond to the questions posed on the Discussion Board.

Lesson 4 (Due March 6) Operationalizing Variables: Constructs and Indicators

Read the mini-lecture and the article by Kraft and Clary on electronic reserve (paying careful attention to how the research problem was conceptualized and the variables operationalized), and respond to the questions posed on the Discussion Board. **Submit your Research Hypothesis section, along with a re-written Problem Statement section, by Monday, March 10.**

Research Hypothesis Section: This section identifies your research hypothesis, offers a rationale regarding its plausibility, explains how the independent and dependent variables will be operationalized (operationally measured), and presents a causal model illustrating the hypothesized relationship between X and Y. (To keep things simple, we will propose to test just one hypothesis. However, if you decide to measure one of the variables in more than one way (exam grade, gpa), you would need to test your hypothesis more than once).

Lesson 5 (Due March 13)

Research Ethics and Institutional Review

Read Chapter 4 and complete sections 1, 2, and 6 of the Online Research Ethics Course as follows: 1) Go to the University's Institutional Review Board (IRB) website at www.umt.edu/research/irb.htm; 2) click on the link to "University of Montana Online Research Ethics Course;" and 3) Complete sections 1, 2, and 6, and take the assessment quiz at the end of each section.

Because the University receives federal funds, all research proposals must be reviewed and approved by the IRB. This includes the applied research projects that MPA students may choose to conduct. So, when you have written your applied research proposal, you will also need to go to the IRB website, download and complete the "IRB Checklist" form, write brief responses to the eleven questions found under the link entitled "Components of an IRB Submission," and send the latter two documents to me for a signature. Our goal is to get an exemption from full IRB review (assuming we are not proposing to work with "vulnerable populations").

Lesson 6 (Due March 20)

Types of Research Designs

Read the mini-lecture, read Chapters 5 and 6, and respond to the questions posed on the Discussion Board.

Week of March 24: Spring Break

Lesson 7 (Due April 3)

Measurement and Sampling

Read the mini-lecture, read Chapters 7 and 8, and respond to the questions posed on the Discussion Board. Begin working on Methodology Section.

Lesson 8 (Due April 10)

Survey Research and Questionnaire Construction

Read the mini-lecture, read Chapters 10 and 11, and respond to the questions posed on the Discussion Board. Continue working on Methodology Section.

Lesson 9 (Due April 17)

Other Data Collection Methods and Data Analysis

Read the mini-lecture, skim chapters 9, 12, 13, and 14, and respond to the questions posed on the Discussion Board.

Due Monday, April 21

Draft of Design 1 (rewrite of first two sections, plus methodology section and questionnaire).

Methodology Section. This section should include 4 subsections: Research and Sample Populations; Data Collection; Data Analysis; Limitations.

Due Monday, April 28

Take-Home Exam (See Questions Below)

Read the mini-lecture and begin rewriting Design #1 in the form of an applied research design, as explained below.

Applied Research Design: You are the Associate Provost for Student Retention at a local university. You are concerned about the large number of students who are academically suspended and never return to college. You decide to address this problem by finding out why so many students get into academic trouble and generating appropriate conclusions and/or recommendations. Accordingly, you write up a research design for an applied research project (approximately 5 pages in length double spaced) and submit it to your boss (me).

You demonstrate that you understand the difference between formal social science research and applied research by taking a social science design (design #1) and rewriting it so that it adopts the tone, form, and purpose of applied research.

Due Thurs., May 8 Applied Research Design

Take-Home Exam Questions

Write on all of the following questions. If you remain on point and offer tight analysis, you should be able to address each question in 2 pages or less (double spaced). Write full and complete essays (introduction, body, conclusion); put each question in context, define key concepts, explain key points, and provide examples where appropriate. Although this is an open-book take-home exam, be sure to respond to the questions in your own words.

1. The Scientific Method. Explain what is unique about the scientific method as a way of acquiring knowledge, i.e., how it is unique in terms of assumptions and methods, and offer your assessment of both its value and its limitations.

Warning: This questions calls for more than linear analysis (lists and steps). You must address the larger questions of concern, e.g., does the scientific method enable us to "know social reality"? Does it help us live full, rich, and just lives?

2. Moving from Conceptualization to Measurement. You have decided to study loneliness among senior citizens using a survey methodology. Explain the steps you will go through in moving from the conceptual level to the empirical level, i.e., the level at which something can be counted.

Warning: This question calls for more than linear analysis. You must address the larger questions of concern, e.g., can we really measure things that don't have empirical existence? Can we really "count" loneliness, alienation, anti-intellectualism, or nimbyism??

3. Sampling and Generalizing. You have decided to study loneliness among senior citizens in Missoula County using a survey. Define your research population (i.e., give an example of a research population statement), identify the sampling frame you will use and possible problems with it, and explain how you can study some subset of the population (i.e., your sample) and still be able to generalize the results of the study to the research population as a whole.

Warning: This question calls for more than linear analysis. You must address the larger questions of concern, e.g., how can we study 400 people and draw conclusions about 4,000, or 40,000, or even 4,000,000? HOW is this possible; what is the underlying theory?

4. The Classic Experiment. You wish to determine whether a training program improves the skills of employees using an experimental design. Explain the logic of experimentation and describe how you might conduct an experiment in this instance. In the process, define internal validity, identify some of the intrinsic and extrinsic factors that may threaten internal validity, and explain how the features of the classic experimental design (e.g., pretesting, control groups) allow you to safeguard it.

Warning: This question also comes with its own context: how can we ensure the validity of the results of our research?

Score Sheet for Evaluating Social Science Designs

A research design describes the steps that will be taken in completing a research project. Its purpose is to guide the researcher in collecting, analyzing, and interpreting data. It should contain the three major components identified below.

Each item below will be scored on a five point scale, with 5 being "excellent" and 1 being "poor."

I. Problem Statement

_____ 1. The design presents a clear and concise statement of the problem to be addressed by the proposed research.

_____ 2. The design presents a clear statement of the purpose(s) of the proposed research.

_____ 3. The significance of the research problem is clearly established with reference to one or more of the following:

a. Results will help policy makers address a societal or organizational problem that holds serious consequences.

b. Results will help fill a significant research gap, i.e., a gap in our substantive knowledge of the subject.

c. Results will help build theoretical knowledge regarding the relationships among important variables.

d. Results will clarify problems in ways that will facilitate further research and exploration.

_____ 4. The research literature is cited, where appropriate, to demonstrate the relationship of the proposed research to the previous research and/or to place the proposed research in the context of a larger theoretical framework.

II. Research Hypotheses

_____ 5. Hypotheses to be tested are clearly stated and their rationales clearly explained.

_____ 6. The proposed research is limited in scope to goals that can be achieved realistically.

_____ 7. Independent and dependent variables are identified and the hypothesized relationship between them is described and/or illustrated with a causal model.

_____ 8. Variables are conceptually and operationally defined in a way that allows for their accurate measurement.

III. Research Methodology

_____ 9. The research population (and sample population where appropriate) is defined and the method of collecting data is clearly explained.

_____ 10. Data collection methods are appropriate to stated objectives.

_____ 11. Methods for analyzing the data and presenting results are clearly explained and are appropriate to testing the research hypotheses.

_____ 12. Limitations of the methodology and/or potential threats to validity are identified and assessed.

IV. Other

_____ 13. Design is well written and carefully edited.

_____ 14. Design utilizes appropriate reference and bibliographic style.