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PSC 502.01: MPA Research Methods

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Political Science 502
RESEARCH METHODS

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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, reviewing the literature, formulating hypotheses or research questions, operationalizing variables, and choosing appropriate methods for gathering data and analyzing results. Special attention is given to the scientific method as a way of knowing.

COURSE OBJECTIVES

To further develop:

1. research skills
2. problem-solving skills
3. writing and organizational skills
4. team-building skills

Upon successful completion of this course, students will be able to design a research project that is consistent with the canons of social science methodology.

REQUIRED TEXT

Chava Frankfort-Nachmias and David Nachmias, Research Methods in the Social Sciences (New York: St. Martins, 5th, 2000).

RECOMMENDED STYLE MANUAL

Kate Turabian, A Manual for Writers of Term Papers, Theses, and Dissertations (Chicago: University of Chicago Press, 6th ed., 1996). $13 at Bookstore

ON RESERVE IN LIBRARY

Paul Trout, "Student Anti-Intellectualism and the Dumbing Down of the University," The Montana Professor 7 (Spring 1997): 4-10.

Paul Trout, "What Students Want: A Meditation on Course Evaluations," The Montana Professor.

COURSE REQUIREMENTS

Students are required to read all reading assignments, prepare answers to study questions, take one in-class exam, and write one annotated bibliography and two research designs.

DUE DATES		POINTS
Sept. 17 (Mon.)	Design 1, Annotated Bibliography	20
Oct. 1 (Mon.)	Design 1, Problem Statement and Hypotheses Sections	20
Oct. 10 (Wed.)	Deadline for identifying topic for Design 2	---
Oct. 29 (Mon.)	Design 1, Completed draft with rewrites and Methodology Sect.	20
Nov. 5 (Mon.)	Design 1, Final Version	100
Nov. 12 (Mon.)	Design 2, Problem Statement and Research Hypotheses sections	20
Nov. 26 (Mon.)	Design 2, Completed draft with rewrites and Methodology Sect.	20
Nov. 28 (Wed.)	In-Class Exam	100
Dec. 5 -19	Oral Presentation	20
Dec. 19 (Wed.)	Design 2, Final Version	100

Research designs will be graded based on the attached Scoresheet and evidence that the student has read and understood the reading assignments. There are 420 points possible; 378 points are needed for an "A" and 336 for a "B."

NOTE 1: Assignments submitted late will be reduced in score by one-half grade per day.
NOTE 2: Each draft submitted for a grade is to be a polished draft, not a rough draft.
NOTE 3: The instructor will gladly discuss all problems with you but will not read rough drafts.

READING ASSIGNMENTS

Sept. 12 The Scientific Method: An Overview

Read Chapter 1, the articles by Professor Trout (ON RESERVE), and other books and articles for your annotated bibliography which is due Monday, Sept. 17. Also, prepare answers to the following study questions (to be discussed in class but not submitted for a grade).

1. What is the relevance of social science methods to your career goals? (This calls for a personal conclusion).
2. What is the goal or purpose of science?
3. Why is astronomy a science and astrology not; what defines the difference?
4. What distinguishes the following ways of acquiring knowledge: a) the authoritarian mode, b) the mystical mode, c) the rationalistic mode, and d) the scientific mode?

5. What are some of the unique assumptions of the scientific mode?
6. What are some of the inherent limitations or weaknesses of the scientific method?
7. What are the seven stages of the research process and what occurs at each stage?
8. What are the two usages of the term "research design"?
9. Why is it important to prepare a written research design?
10. What is the purpose of the Problem Statement section of a design, and what strategies will you use to write one? (You will not find answers to this question in the text)

Sept. 19 The Conceptual Foundations of Research

Read Chapter 2, prepare answers to the study questions listed below, and work on your Research Problem and Hypotheses sections.

1. What steps are required for you to move from the abstract level at which we label a phenomenon to the concrete level at which you can measure aspects of that phenomenon? (See Figure 2.1 and class handout).
2. What are concepts and what is their importance to the research process?
3. What is the difference between a conceptual definition and an operational definition?
4. How can models help you **conceptualize** your research problem?

Sept. 26 Variables, Hypotheses, and Causal Models

Read Chapter 3, prepare answers to the study questions listed below, and complete your Research Problem and Hypotheses sections (**Due Monday, Oct. 1**).

1. What is a "research problem"?
2. What are units of analysis?
3. What are variables, and what distinguishes dependent, independent, and control variables?
4. How do you exercise control in correlational designs in contrast to experimental designs?
5. Why is it important to understand the concept of covariation?
6. What is a hypothesis? How might one be stated for a correlational design, and for an experimental design?
7. What is the purpose of a causal (or correlational) model, and how do you draw one? (This is not covered in text)

Oct. 3 Operationalizing Variables: Constructs and Indicators

Read the article by Kraft and Clary (paying attention to how the research was conceptualized and carried out, rather than the substance), and give some thought to the classroom assignment (see hand-out). Also, see professor to discuss your topic for Design 2 (Oct. 10 deadline).

Oct. 10 Types of Research Designs

Read Chapters 5 and 6, and prepare answers to the study questions listed below,

1. What is the key defining characteristic of an experimental design, and where does the concept of "treatment" come in?
2. What is the logic behind administering a pretest?
3. What conditions must be met to demonstrate that two variables are causally related?
4. What processes are used to satisfy these three conditions, and what is the logic behind each?
5. What is internal validity, and what intrinsic and extrinsic factors threaten it?
6. How can these threats be controlled or at leaset reduced?
7. What is external validity and how can it be maximized?
8. What distinguishes a quasi-experimental design from an experimental one?
9. What do case studies entail?
10. What do correlational designs entail?

Oct. 17 Measurement and Sampling

Read Chapters 7 and 8, work on completing Design #1, and prepare answers to the study questions listed below.

1. What is an example of "assigning numbers according to rules"?
2. What is the difference between nominal, ordinal, interval, and ratio data, and why should we care?
3. What is meant by the terms test reliability and validity?
4. What is meant by the term research population, and how do you write a research population statement?
5. What is meant by the term sample or sampling population, and when would you choose to study just a sample?
6. What is a sampling frame?
7. How do you ensure that a representative sample is drawn?
8. How do you know what sample size is sufficient?
9. What is a nonresponse error, and how do you cope with it?

Oct. 24 Survey Research and Questionnaire Construction

Read Chapters 10 and 11, prepare answers to the study questions listed below, and be prepared to work on your questionnaire in class.

1. What are the advantages and disadvantages of the mail questionnaire?
2. What can you do to increase the response rate?

3. What are the advantages and disadvantages of the personal interview?
4. What distinguishes a structured interview, focused interview, and a nondirective interview?
5. When might you use telephone interviewing?
6. How will you decide which method to use in your research?
7. What are some of the pitfalls to avoid when drafting survey questions?

Oct. 31 **No Class. Report to Library to Conduct Research for Design #2.

****Final Version of Design #1 is due Monday, Nov. 5****

Nov. 7 Other Data Collection Methods

Skim Chapters 9, 12, and 13, prepare answers to the study questions listed below, and complete Problem Statement and Research Hypotheses sections of Design 2 **(due Monday, Nov. 12)**

1. What do observational methods entail, and when might they be used?
2. What is the purpose of qualitative research and when might it be used?
3. What is the difference between complete participant and participant-as-observer methods?
4. What is the theory behind field research?
5. What does secondary data analysis entail?
6. What sources of secondary data might be used?
7. What is content analysis and when might it be used?

Nov. 14 Data Analysis – Social Science Lab

Read Chapter 14, and report to the Social Sciences Lab to test hypotheses.

Nov. 21 ****Thanksgiving Holiday**** **Design #2 due Monday, Nov. 26**

Nov. 28 ****In-class Exam****

Dec. 5 thru 19 Individual Student Presentations

Each student will make a 8-10 minute formal presentation of his or her research design, briefly laying out the research problem, the hypotheses, and methodology. Other class members will then offer constructive comments for 5 minutes, time allowing.

ASSIGNMENTS

DESIGN 1

Many educators and policy analysts believe that college students are not performing as well as they could or should scholastically. You have decided to conduct social science research investigating the causes of variations in student performance levels. Because of time and monetary constraints, you have decided to rely upon a questionnaire administered to students in PSC 100.

The first task in conceptualizing and carrying out research is to write a research design (a.k.a. research proposal). Your design is to comprise three sections, as follows:

> The Research Problem - Must establish the nature of the research problem and identify the project's purpose/objectives.
>
> Research Hypotheses - Must identify the project's research hypotheses, citing the relevant literature as needed to establish their plausibility and the rationale behind them. Although most designs do not do so, I want you to draw a causal model as well, identifying the dependent and independent variables and the relationship(s) between them. Variables should be operationally defined here or in the next section.
>
> Methodology - This section describes the research population and methods of data collection and analysis. It also describes the project's design (i.e., experimental, quasi-experimental, or correlational) and how proper controls will be exercised. Where there are clear limitations that may threaten the validity of the results, these must also be discussed. I suggest using appropriate subheadings in this section.

Each section will ordinarily be 1-3 pages long, double-spaced (or 1 and 1/2 spaced to save trees).

To develop your team-building skills, you will work in teams of two or three. Each team member will write and submit his or her own design, but their must be agreement among team members about the problem, hypotheses, and methodology.

DESIGN 2 (Portofolio item for MPA students)

Take what you have learned in developing Design 1 to write your own individual design -- to be presented in class at the end of the term. Two parameters: First, your topic must be approved by the professor by the specified deadline. Second, it must propose an experimental, quasi-experimental, or correlational design. Pick a topic of interest to you, but make sure it is concrete.

ESSAY EXAM QUESTIONS (You will write on three questions drawn randomly in class)

1. **The research process.** For each of the seven stages of the research process (p. 20), define what needs to be accomplished and describe the strategies you might use to accomplish them effectively.

2. **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 methodology. (If you rely on the six assumptions outlined in the text, be sure to explain them in your own words).

3. **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.

4. **Sampling and generalizing.** You have decided to study loneliness among senior citizens using a survey methodology. 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 c) explain how you can study some subset of the research population (i.e., a sample) and still be able to generalize the results of the study to the research population as a whole.

5. **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 validity, and explain how the features of the classic experimental design (e.g., pretesting, control groups) allow you to safeguard it.

6. **Distinguishing scholarly from applied research**. Explain the difference between social science research conducted for scholarly purposes, and applied research conducted in response to an organizational need or problem. Explain how you would reorganize and rewrite Design 1 to satisfy the needs of UM administrators rather than the norms of academic scholarship.

****In answering all of these be sure to write full and complete essays. Put the question in context, define key concepts, explain key points, and provide examples where appropriate.****

SCORE SHEET FOR EVALUATING RESEARCH DESIGNS

The 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. Your research design should be organized according to the major headings below.

Instructions to evaluators:

Score the design on each of the dimensions identified below using the following five-point scale:

Excellent 5 4 3 2 1 Poor

Author: _____

Title: _____

I. STATEMENT OF THE RESEARCH PROBLEM

_____ 1. The design presents a clear, concise overview of the problem to be addressed by 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 policymakers 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.

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.

_____ 8. Key concepts/variables are operationally defined in a way that allows for their accurate measurement.

III. RESEARCH METHODOLOGY

_____ 9. The research population is defined and the method of collecting data is clearly explained.

_____ 10. The research is designed in a way to maximize the validity of study results.

_____ 11. Data collection methods are appropriate to stated research objectives.

_____ 12. Methods for analyzing the data and presenting results are clearly explained and are appropriate to testing research hypotheses.

_____ 13. Limitations of the methodology and/or potential threats to validity are discussed, along with possible strategies for overcoming design problems.

IV. OTHER

_____ 14. Design is well written and carefully edited.

_____ 15. Design utilizes appropriate reference and bibliographic style.

Comments:

Standard Evaluation Form for Oral Presentations

Rating Scale:	Outstanding		Average		Poor
	5	4	3	2	1

EVALUATIVE CRITERIA COMMENTS

_____ 1. Quality of Oral Presentation

a. Diction/articulateness: words are carefully chosen and articulated so that points are expressed clearly.

b. Volume/tone: the voice is projected so that all can hear; and volume and tone are varied to achieve desired timing and emphasis.

_____ 2. Quality of Physical Presentation

a. Eye contact: presenter maintains eye contact, regularly shifting attention to all segments of the audience.

b. Gestures/movement/mannerisms: presenter moves and uses gestures effectively while avoiding distracting mannerisms and overreliance on notes.

c. Appearance/demeanor: presenter is dressed appropriately and maintains a confident, professional demeanor.

_____ 3. Content of Presentation

a. Organization and logical sequencing: the presentation demonstrates a well-developed introduction, body, and conclusion, transitions appropriately from one point to the next, and uses examples to clarify or support key points.

b. Quality of content: content is accurate and well-researched.

_____ 4. Use of graphics/visual aids: aids are easily read by every member of the audience, are of professional quality, and are well chosen to illustrate key points.

Total Score: _____ Student's Name: _____

Social Science Research:
Organizing and Writing the Research Design

The research design is also known as the research proposal or the prospectus. It sets out what you propose to do, how, and why. The following model is appropriate for use whether you are preparing to write a thesis, an applied research report, or a grant proposal.

Section	Strategies
Problem Statement (develops the problem under study and establishes the project's purpose)	1. Before writing, become an SME by consulting a) sources that give overview of the subject area, and b) other studies having similar objectives. Write an annotated bibliography. 2. Use the funneling technique to identify the various levels of the research problem, using citations where appropriate. 3. Close this section with an explicit Purpose Statement that encapsulates the goals of your project. 4. Find the optimal balance between completeness and brevity.
Research Hypotheses/ Research Questions (Identifies key research hypotheses or questions and explains the rationale behind them)	1. Review about five similar studies to a) demonstrate your knowledge of field, b) provide basis for generating hypotheses, e.g. their plausibility, c) identify methodological deficiencies that you intend to overcome, and d) establish connection between your proposal and the existing body of knowledge. Make sure the significance of the proposed study shines through. 2. Your hypotheses/research questions should be specific, concrete, and achievable. List them; do not bury them in the narrative. Be sure to explain the rationale for each hypothesis. 3. Make the connection between your hypotheses/questions and and your research objectives explicit.
Methodology (Identifies the research population, and methods of data collection and analysis)	1. Your choice of design, and data collection methods, must flow logically from your research objectives. 2. Be sure to operationally define all terms used in hypotheses/ research questions.

SOCIAL SCIENCE RESEARCH: ORGANIZING AND WRITING THE FINAL REPORT OR JOURNAL ARTICLE

Whether you are writing a thesis, a journal article, or a technical report, the results of social science research is typically reported as shown below.

Section	Strategies
I. Introduction (develops the problem under study, establishes the project's purpose, and identifies hypotheses or research questions)	1. Use funneling technique to identify the various levels of the research problem; borrow heavily from prospectus. 2. Cite only that literature needed to identify the problem, place your research in the context of previous research, and establish the rationale behind your hypotheses/questions. 3. Include an explicit purpose statement that encapsulates the goals of the project. 4. List hypotheses/research questions; don't bury them in narrative. Make sure they relate logically to your research objectives.
II. Methodology (Describes the research population and methods of data collection and analysis)	1. In describing your methodology, emphasize how your design and data collection methods flowed logically from your hypotheses or research questions. 2. Describe the steps you took to safeguard the validity of your study.
III. Results (report of the results)	1. Report the results in logical order, usually proceeding one question at a time (if a survey design). 2. Use a three part strategy when presenting data: a) indicate the reason for asking the question; b) present the data in an appropriate table or graph; and c) state what the data indicate on their face.
IV. Analysis/Discussion (interprets the results)	1. Analyze the data in logical order, usually one hypothesis or research question at a time.
V. Conclusions	1. Give the reader the bottom line. Given your research objectives, what do we ultimately learn from the study?

Note: Applied reports also contain an executive summary at the beginning and recommendations at the end. They also identify research questions rather than formal hypotheses.