EDP 384: Research Design and Methods for Psychology and Education
Fall 2014, Tues/Thur, 11:00 am - 12:20 pm
SZB 432

Instructor: James E. Pustejovsky
Email: pusto@austin.utexas.edu
Phone: 512-471-0683
Office hours: Mondays, 1-3 pm or by appointment
Office: SZB 538 D

Course Description

This course will introduce essential concepts and methods used in quantitative empirical research in the fields of education and psychology, in order to prepare students both to be informed consumers of research and to conduct empirical research of their own. The focus is predominantly on quantitative methods, though qualitative perspectives will also be presented as counter-points. The course is organized around four main themes: measurement, populations and sampling, experimental causal research, and quasi-experimental causal research. On each theme, we will read relevant theoretical and methodological literature, discuss empirical research in light of those concepts, and develop research proposals using the methods that we discuss. Throughout, emphasis will be placed on building intuition and heuristics regarding research designs and methods, rather than mastering technical details.

Learning Goals

By the end of this course, students should be able to…

- Identify and describe the important operational features of different types of research designs (e.g., surveys, randomized experiments, quasi-experimental designs).
- Identify major strengths and weaknesses of different research designs.
- Critique the design of published studies that use quantitative, empirical research methods in terms of construct validity, internal validity, and external validity.
- Construct proposals for empirical research studies using a variety of different research designs.

Pre-Requisites

- EDP 380P Measurement & Evaluation or equivalent training
- EDP 382K Correlation & Regression or equivalent training (or prior consent of the instructor)

Readings

- Required text: Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and Quasi-Experimental Design for Generalized Causal Inference*. Boston, MA: Houghton, Mifflin, & Co.
- Further readings posted on Canvas.

Research Proposals

It is impossible to learn how to ride a bicycle only by reading about it. Similarly, one of the best ways—if not the only way—to learn how to design empirical research studies is through practicing. Therefore, a major component of this course involves developing short (8-10 page), realistic research proposals that use the methods and tools covered under each theme of the course. Students will develop initial drafts of their proposals, submit them for feedback from their peers, and then revise and resubmit final drafts. ***Only the final drafts of the proposals will be graded***. Students may work on each project in a group of up to three; all students in the group will receive the same grade on the project.

Writing

It is expected that the research proposals will be well composed, following the style and tone of an academic paper. Students who need assistance with their writing are encouraged to seek help from the Sanger Learning Center (http://www.utexas.edu/ugs/slc/grad), which offers free tutoring services for graduate students.

Students will need to cite other scholarly work in your assignments, following APA6 format. I highly recommend using reference management software such as Microsoft EndNote, Zotero, or Mendeley. Software like this will make it much easier to format your citations and reference lists.

Article Presentations

Over the course of the semester, students will read and discuss a number of empirical research articles that use the designs discussed in each section of the course. Each student will be in charge of presenting and leading discussion of one article. The presentation should cover: 1) the motivation for the research, 2) the main research question(s), 3) relevant details about how the research was carried out, 4) a succinct summary of the results, and 5) implications of the findings. Through discussion, the class will then identify any important shortcomings or critiques of the research.

Evaluation

- Proposals (60%). There will be four proposals in all. Each proposal has two due-dates: one for a draft that will be distributed for peer feedback and a second for a final draft. Late submissions on the first draft will lose the benefit of peer review, and will

lead to final drafts being marked down 20% per day. Late submissions on the final draft will be marked down 20% per day.

- Peer reviews (20%). Students' reviews of their peers' proposals will be evaluated for thoroughness, relevance, and constructiveness. Late submissions will not be accepted.
- Article presentation and discussion (10%). Each student will sign up to present and lead discussion of one article over the course of the semester. Presentations and discussions will be evaluated on the extent to which the student has prepared thoroughly.
- Class participation (10%). Students are expected to attend each meeting and to be informed, active participants in class discussions. Besides asking and answering questions during class discussions, other modes of participation include coming to office hours to discuss the course material (but not to discuss grades). Class participation will be evaluated based on the instructor's global impression over the entire semester.

A tentative rubric for assignment of final grades is listed below. ***The instructor reserves the right to modify this rubric.*** Square brackets correspond to ≤ or ≥; rounded parentheses correspond to < or >.

A	[90, 100]	C+	[74, 77)
A-	[87, 90)	C	[70, 74)
B+	[84, 87)	C-	[67, 70)
B	[80, 84)	D	[60, 67)
B-	[77, 80)	F	[0, 60)

Attendance

Students are responsible for all of the material presented during class meetings. If a student must miss a class, it is their responsibility to obtain from classmates and thoroughly review notes or summaries of the material that they missed. Frequent or unexcused absences will adversely affect a student's participation grade.

Academic Integrity

Following the University's honor code, students are expected to maintain absolute integrity and a high standard of individual honor in scholastic work. All assignments (projects and presentations) must be completed with the utmost honesty, which includes acknowledging the contributions of other sources to your scholastic efforts; avoiding plagiarism; and completing assignments independently unless expressly authorized otherwise. ***Assignments containing any plagiarized material will not be accepted.***

ADA Accommodations

The University of Texas at Austin provides upon request appropriate accommodations for qualified students with disabilities. For more information, please contact the Office of the Dean of Students at 471-6259, 471-4671 TTY.

Religious Holidays

By UT Austin policy, students must notify the instructor of a pending absence due to religious observance at least fourteen days in advance. If the student must miss a class, an examination, a work assignment, or a project in order to observe a religious holy day, the student will be given an opportunity to complete the missed work within a reasonable time after the absence, with no penalty.

Tentative Schedule

Introduction
8/28 – Types of research questions
9/2 – Reading, summarizing, and critiquing research
9/4 – Research questions

Measurement
9/9 – The validity typology, construct validity
9/11 –Reliability
9/16 – Effect sizes
9/18 – Designing associational research
9/23 – Criticisms of quantitative approaches to measurement/testing, discussion of measurement projects

Populations and sampling
9/25 – External validity, probability sampling
9/30 – Multi-stage (cluster) sampling
10/2 – Stratification
10/7 – Missing data
10/9 – Criticisms of probability sampling
10/14 – Discussion of survey sampling projects

Causal research: Randomized experiments
10/16 – Simple randomized experiments
10/21 – Internal validity, design choices
10/23 – Power
10/28 – Block-randomization and covariate adjustment
10/30 – Cluster-randomized designs
11/4 – Field issues: compliance and fidelity
11/6 – Field issues: attrition
11/11 – Criticism of the experimental paradigm
11/13 – Discussion of randomized experiment projects

Causal research: Quasi-experiments
11/18 – Regression discontinuities
11/20 – Interrupted time series
11/25 – Single-case designs
12/2 – Statistical adjustment, matching, and balancing
12/4 – Discussion of quasi-experiment projects