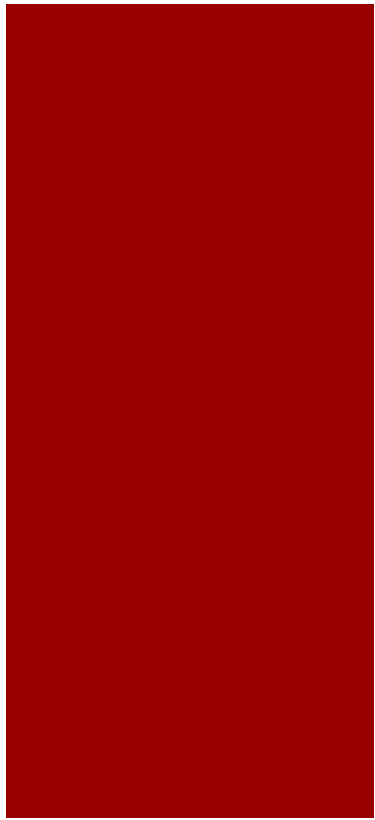




EDUC 890 Class 6

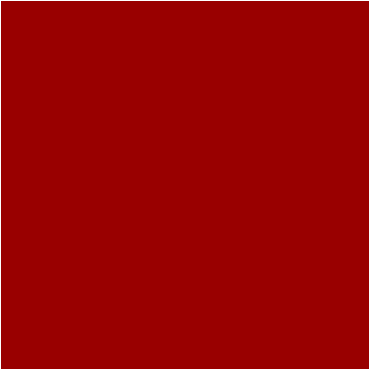
Chapter 6—Quantitative Research Designs



Quantitative

Chapter 6

- 2 types of quantitative research
- 5 common quantitative research designs
- How to identify/recognize the research design



Wait a minute! What *IS* a
quantitative research design?



- A logical set of procedures for collecting, analyzing and reporting numeric data to answer research questions and test hypotheses about specific variables

2 types of quantitative research

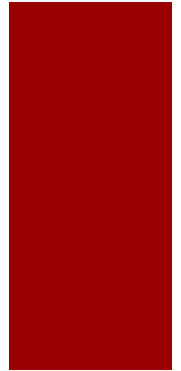
Experimental research

- Researcher tests the effect of an intervention
- ...by manipulating conditions experienced by participants
- *E.g. determining whether taking medicine effects cold symptoms*
- Conditions carefully controlled to minimize confounding variables
- **Goal:** to make cause and effect claims

Nonexperimental research

- Researcher describes variables
- ...**without** manipulating conditions experienced by participants
- *E.g.*
 - *describe principals' opinions about music education;*
 - *describe relationship between gender, age and marijuana use*
- Participants carefully selected so they are representative of a population
- **Goal:** to describe...
 - Relationships between variables
 - Trends for certain variables in a large population

5 common quantitative research designs



Experimental research

- True experiment
- Quasi-experiment
- Single-subject

Nonexperimental research

- Correlational
- Survey

****See figure 6.2 on p. 197****



Group work 1

Prepare a brief (5-minute) presentation to the class about one of the 5 designs:

- True experiment; Quasi-experiment; Single-subject; Correlational; Survey
- Include...
 - description,
 - intent/goals,
 - characteristics,
 - examples from the text,
 - details of an example that YOU concoct/ imagine,
 - *(if time allows)* details of an example that you find



Test your understanding...what **research design** is the famous marshmallow test?



- https://www.youtube.com/watch?v=QX_oy9614HQ
- **Note:** Children who delayed gratification ended up having higher SAT scores, lower levels of substance abuse, lower likelihood of obesity, better responses to stress, better social skills
- *Consider the bullets on p. 209 #4 to help you rationalize your answer.*



Group work 2

Identifying research designs

- Complete 'Understanding Research Article' questions 1-4 on p. 214
- *To help you answer these questions, reference the tips suggested on p. 209*



Question 1

- the early-intervention-outcomes study used a **nonexperimental** research design.
- Although the title includes the word intervention, the researchers did not manipulate the conditions experienced by participants.
- Instead, they described variables about families' participation in and experiences with early childhood services and programs.
- best characterized as a survey design. Evidence :
 - Researchers described trends (e.g., use of services, attitudes about services) for a large group (families in Illinois and Texas);
 - they refer to a large-scale assessment and survey data in the abstract;
 - they select a large sample to represent the population of interest;
 - they use a survey questionnaire to gather the data; and
 - the results emphasize reporting trends such as frequencies and means.



Question 2

- The authors **can claim** that certain relationships exist among the measured variables (e.g. race/ethnicity is related to the family outcomes measured with the survey) for the studied families.
- However, because they used a nonexperimental design, they **cannot claim** that certain variables **cause** families to experience certain types of outcomes.
- Because they did not use probability sampling to select participants from all possible families, they can make only **limited claims** about families in general in the United States. With the large sample, however, the results likely apply well to families within Illinois and Texas.



Question 3

- The quantitative bullying-intervention study used an **experimental research design**; the researchers manipulated the conditions experienced by the participants at each of the schools by introducing the social norms intervention and measuring its impact.
- Specifically: a **quasi-experimental pretest–posttest design**. Evidence:
 - the researchers determined the effect of a treatment;
 - they administered the treatment to intact groups (students in specific schools);
 - they manipulated the conditions experienced by participants by creating and administering the media posters;
 - they measured the outcome variables for the groups;
 - they statistically compared the groups at each school in terms of scores obtained before and after the intervention; and
 - the results emphasize comparing the scores to determine the effect of the intervention.



Question 4

- The authors can make **only limited claims** about the treatment causing the measured effects because other possible explanations were not well controlled.
- They indicate the limits of their claims when they noted that “a social norms intervention **may be a promising strategy** to help reduce bullying” (abstract) instead of claiming it definitely caused the measured effects.
- As no control condition was used for comparison and students were not randomly assigned to different conditions, the measured differences could have resulted for some other reason, e.g.
 - perhaps the students' perceptions and behaviors changed as a result of completing the preintervention measures, which encouraged them to think about and talk about bullying with their peers, or
 - perhaps some other event occurred, such as a poignant television show that raised students' awareness of bullying.
- The researchers also cannot claim that their results will apply to all middle school students, as only students from the schools in one region participated in the study.



Assignment #4

- Write a Topic, Problem, Purpose, and Research Question(s) of interest to you.
- See textbook examples of...
 - problem statements (Ch. 3),
 - purpose statements (p. 173, 180) and
 - research questions (p.175, 182)
-
- *You do not need to reference literature; I am looking for the careful design and articulation of these introductory elements to a research study.*

Homework

- Read the description of Assignment #4 (due Nov. 1) and bring questions next class.
- Kristy Timmons will be visiting—check out her faculty page
- Find a project, thesis or dissertation to describe for Assignment #5
- Read Ch. 7 & 8

