

Quantitative Research Methods

**Jacob Campbell, LICSW
at Heritage University**

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Surveys and Quantitative
Data Analysis



Types of Research Design

Quantitative Designs

- Experiment
- Survey
- Program evaluation*
- Secondary data*

Qualitative Designs

- Interview
- Focus group



Survey Design

Strengths	Limitations
<p>Cost-effectiveness Generalizability Reliability Versatility Longitudinal designs are great</p>	<p>Inflexibility Lack of depth For cross-sectional designs, difficulty with time order Phone, mail, internet, and in-person surveys all have issues</p>



Writing Quantitative Survey Questions

- Questions are based on operational definitions (But also include other variables and characteristics)
- Concise, easy to understand
- Address the “most knowledgeable people” about a topic Think back to sampling
- Clear wording (Double negatives, double-barreled questions and answers, jargon, slang)
- Neutral wording (Leading language, social desirability)
- Pretesting is key



Writing Quantitative Survey Questions

- Closed-ended questions (Mutually exclusive and exhaustive response options)
- Fence-sitters and floaters
- Filter questions, Matrix questions
- Group your questions by theme
- Ordering is important, though tricky
- Think about the time needed to complete the questionnaire
- Look professional



Bridges Program Parent Questionnaire

Questionnaire Data Collection Report

We are sending out this questionnaire to all of the parents who have children that participate in the Pasco School District Bridges Program. Your responses are anonymous, and this survey is only used to inform and improve the Bridges Program and the work that we do with your child.

1 School Connection and Quality

1.1 Do you feel that there is a good support system for your child at school?

Select the most appropriate option

Yes No I'm Not Sure

1.2 How connected do you feel connected to the school community at your child's school?

Select the most appropriate option

Very Connected Very Disconnected

1.3 How satisfied are you with the behavioral interventions for your child?

Select the most appropriate option

Very satisfied Very dissatisfied

1.4 Do you feel that you are a part of the IEP team for your child?

Select the most appropriate option

Very involved Very not involved

1.5 Are there ways that the school could foster a better connection between your family and itself?

Write in any comments that you have

2 Behavior Supporting Outside Services

2.1 Has your child ever participated in non-school services to assist in supporting his or her behavior or mental health (such as mental health therapy, counseling, wraparound services, medication management, etc.)?

Select all that apply

Mental health therapy or counseling Wraparound services
 Medication by primary care physician Medication by psychiatrist

other:

None

2.2 To your knowledge, does the school help coordinate and communicate with these services?

Select the most appropriate option

Yes No I'm Not Sure Not Applicable



Group Activity - Survey Creation

Create a 5-10 question survey which addresses the topic of “study skills,” though the specific research question is up to you...

- Include questions and answers
- Follow best practices listed in the book
- Don't ask anything sensitive



Group Activity - Data Collection

- Gather data from all of the class



Group Activity - Debrief

- What questions worked well? Didn't work so well?
- What research questions could we answer?
- What would univariate analysis look like here?
- What bivariate relationships could we explore?
Multivariate?
- What would you do differently, if you could?
- Setting? Format?



Basic experimental design

Classic Experimental Design

- Experimental and control groups
- Random assignment
- Pretest and posttest

Variations

- Posttest only (testing effects)
- Solomon four group design
- Using a comparison group



Quasi-Experimental Design

- Nonequivalent comparison group design (true experiment, without random assignment)
- Natural experiments
- Ex post facto control group
- Time series
- Matching (Individual and Aggregate)



Pre-Experimental Design

- Static group comparison
- One-shot case study
- One-group, pre/posttest

Severe limitations



Logic of Experimental Design

- Internal vs. external validity
- Replication
- Threats to validity
 - Noncomparable groups
 - Selection bias
 - Placebo effect
 - Researcher effects



Analyzing Quantitative Data

- Response rates and nonresponse bias
- Importance of creating a codebook



Quantitative Data Analysis

- Univariate analysis
 - Measures of central tendency
 - Frequencies
- Bivariate analysis
 - Chi-square, t-test, ANOVA, and correlation
- Multivariate analysis
 - Regression, MANOVA

