

GUIDED PRACTICE

Class: Research Methods

Date assigned: Week 4

Date due: 3/1/2020

Time estimate to complete this assignment: 60 minutes

Overview/Introduction

What is this lesson about?

This lesson will introduce the rudimentary concepts behind research design, including the differences between non-experimental, quasi- and true-experimental designs.

Learning Objectives

Basic objectives

- a. Define the different types of experimental design (non-experimental, quasi-experimental and experimental), including its subcategories (case study, survey, correlational, longitudinal, cross-sectional).
- b. Describe the advantages and disadvantages of each type of experimental design.
- c. Explain the different variables that can be present in a design: independent vs. dependent variables, controls, confounds, mediators, and moderators.

Advanced objectives

- a. Write a research question and a testable hypothesis, specifying the independent variable, dependent variable, and how each will be operationalized.
- b. Design a non-experimental study to test the above hypothesis.
- c. Design a quasi- or true experimental study to test the above hypothesis.
- d. Write an APA-style paper with a literature review, methods, predicted results, discussion and references section on one of the the studies outlined above.

Preparatory Activities and Resources:

Name:

QUESTIONNAIRE DESIGN ACTIVITY

Open-ended Questions: respondents say anything they want in their own words. Useful when: asking about the frequency of something (count) or if you're unsure of the appropriate response options (note: you'll need to code these eventually).

How many cigarettes did you smoke yesterday?

Describe your relationship with your father.

Close-ended Questions: select response from a list of choices provided.

Dichotomous: question has only 2 possible responses.

Do you believe that the death penalty is ever justified?

Yes No

Nominal: when you are interested in the category of the response.

Which relative in your family are you closest to?

Father

Mother

Sister

Brother

Rank-order: rank preferences in order from best to worst.

Rank the following ice-cream flavors in order of your favorite from your least favorite (4) to your favorite (1).

Strawberry

Rocky road

Chocolate

Vanilla

Likert-Scale: indicate level of agreement on a 1-5 (or 1-7 or 1-9) bipolar scale.

I really enjoy eating bananas with peanut butter.

1 2 3 4 5

Strongly disagree *Strongly agree*

ACTIVITY 1: Generate a research question related to _____ (PICK YOUR OWN TOPIC).

General research question:

Hypothesis*:

*A good hypothesis must: a) make a prediction about the relationship between 2/more variables, and b) the predicted relationship must be unambiguous (i.e., only one way to interpret the relationship).

ACTIVITY 2: Come up with 3-5 questions that would test your hypothesis.

- a. At least 1 question should be categorical (e.g., dichotomous, nominal)
- b. At least 1 question should be continuous (e.g., count, Likert-type).

2. Playlist:

WATCH this video:

<https://methods.sagepub.com/video/researching-disgust-linking-theory-and-methods?fromsearch=true>

ANSWER THIS QUESTION ABOUT THE VIDEO:

What type of design (non-experimental, quasi or true experimental) did this study use?

READ: Zhou, X., Vohs, K. D., & Baumeister, R. F. (2009). The symbolic power of money: Reminders of money alter social distress and physical pain. *Psychological Science*, 20(6), 700-706.

<https://journals.sagepub.com/doi/pdf/10.1111/j.1467-9280.2009.02353.x>

ANSWER THESE QUESTIONS ABOUT THE ARTICLE:

- What is the nature of the study (non-experimental, quasi-experimental, experimental)?

- If experimental or quasi-experimental:
 - What are the factors (IVs/DVs)?

 - What is the design (e.g., # of factors, # of levels)?

 - Between or within subjects?

 - What are the predicted Main Effects and Interactions?

- Are there additional variables (controls, confounds, mediators, moderators)?
- What were the advantages/disadvantages of the design used?

Exercises: Please complete by 3/1/20.

METHOD FOR SUBMISSION: PLEASE COMPLETE THE FOLLOWING WORKSHEET AND BRING A COMPLETED COPY TO CLASS.

NAME:

Writing Hypotheses Worksheet

DEFINITIONS - A theory is a principle that explains some aspect of the social or natural world. A hypothesis is the basic statement that tests your theory. The hypothesis is a formal statement about your research question.

Poor Theory:

“The elderly don’t care about the environment because they have other things to think about.”

Better theory:

“Aging makes you more focused on the present, and less focused on things with future payoffs.”

Poor Hypotheses

“Age is related to attitudes about protecting the environment.”

Better Hypothesis

“Age is related to attitudes about protecting the environment with younger adults being more supportive than older adults.”

Step 1: Formulate a theory based on the findings from your media article. If possible, pose it as a one-sentence statement about a relationship between two variables. EX: Social interaction makes people happier because human beings are fundamentally social animals.

Step 2: Now, you are ready to write a hypothesis (make an unambiguous statement about the relationship between your variables of interest). EX: Individuals who seek out social interaction more (i.e., extroverts) are more satisfied with their lives relative to individuals who seek out social interaction less (i.e., introverts).

Step 3: Define the variables in your hypothesis/theory by specifying what it is conceptually (e.g., life satisfaction is how happy people are with the current state of events in their life) AND what it is operationally (e.g., “how satisfied are you with your life?” 1 = not at all, 5 = very much).

Next, make a different, alternative theory (#2) that could also explain the findings from your media article. Then, indicate how could test this alternative theory by specifying the hypothesis and conceptual + operational definitions.

Theory # 1:

Hypothesis #1:

Conceptual Definition(s):

Operational Definitions(s):

Theory #2:

Hypothesis #2:

Conceptual Definition(s):

Operational Definitions(s):

Questions?

For questions, I am reachable by email and have office hours Tuesdays/Thursdays 9-11.

ADVANCED PRACTICE

Class: Research Methods

Date assigned: 3/1

Date due: 3/15

Time estimate to complete this assignment: 3 hours

Learning Objectives

Advanced objectives

- a. Write a research question and a testable hypothesis, specifying the independent variable, dependent variable, and how each will be operationalized.
 - b. Design a non-experimental study to test the above hypothesis.
 - c. Design a quasi- or true experimental study to test the above hypothesis.
 - d. Write an APA-style paper with a literature review, methods, predicted results, discussion and references section on one of the the studies outlined above.

Activities & deliverables

REFLECTION INSTRUCTIONS (due in class 3/15, along with your paper):

1. Finalize the research question from your pre-class guided practice and in-class activities to come up with a testable hypothesis. In your reflection, specify the independent variable, dependent variable, and how each will be operationalized.
2. Describe a potential a non-experimental study to test the above hypothesis.
3. Describe a potential a quasi- or true experimental study to test the above hypothesis.
4. Think about the two possible studies and reflect on which one would be ideal for your APA style paper; justify your decision.

PAPER INSTRUCTIONS (due in class 3/15, along with your reflection): This project is a proposal for a research study you would like to do. It should showcase your research and critical thinking abilities and demonstrate that you are ready to participate in psychology research. Your grade will be based on the following criteria: theoretical foundation, unique and sophisticated contribution to the field of psychology, creativity, methodological elegance, ethical adherence, written report (including adherence to APA style), and oral presentation.

ALL written assignments need to use 12-point Times New Roman font, double-spaced, with 1-inch margins.

PAPER RUBRIC

Introduction

1 pt for hook/introductory paragraph that overviews the paper

1 pt for a clear, specific, directional hypothesis

Main Body

3 points for each reference (idea, evidence in support of idea, how it relates to your hypothesis—1 pt each) = 9 pts total

Methods

1 pt for specifying the design (correlational, quasi, or experimental)

1 pt for participants (where recruited from, demographics, compensation)

1 pt for procedure

1 pt for measures

Predicted results

1 pt for specifying the correct statistical test

1 pt for explaining what you expect to find

General Discussion

1 pt for summarizing main points

1 pt for limitations and future directions

APA style: 1 pt

TOTAL: 20 PTS

Resources:

For APA style guides:

https://owl.purdue.edu/owl/research_and_citation/apa_style/apa_formatting_and_style_guide/general_format.html

For a basic tutorial on APA style:

<https://apastyle.apa.org/learn/tutorials/basics-tutorial>

For sample papers in APA style:

<https://apastyle.apa.org/search?query=&fq=StyleContentTypeFilt:%22Sample%20paper%22&sort=ContentDateSort%20desc& ga=2.159751869.1016061845.1567803272-326013615.1567108153>

Questions?

For questions, I am reachable by email and have office hours Tuesdays/Thursdays 9-11.

Flipped IN-CLASS Lesson Plan Template- Workshopping it!

Topic or concept:

This lesson will introduce the rudimentary concepts behind research design, including the differences between non-experimental, quasi- and true-experimental designs.

Basic objectives for preparatory work:

Define the different types of experimental design (non-experimental, quasi-experimental and experimental), including its subcategories (case study, survey, correlational, longitudinal, cross-sectional).

Describe the advantages and disadvantages of each type of experimental design.

Explain the different variables that can be present in a design: independent vs. dependent variables, controls, confounds, mediators, and moderators.

Advanced objectives for classwork & after class work:

Write a research question and a testable hypothesis, specifying the independent variable, dependent variable, and how each will be operationalized.

Design a non-experimental study to test the above hypothesis.

Design a quasi- or true experimental study to test the above hypothesis.

Write an APA-style paper with a literature review, methods, predicted results, discussion and references section on one of the the studies outlined above.

	Time planned	Activity and rationale	Resources needed
Beginning of class period	5 minutes	<p>Watch a video clip of Clive, the worst case of amnesia recorded in a patient to date. Afterwards, ask students: What does this case study teach us?</p> <p>Why are case studies like this important?</p> <p>• https://www.youtube.com/watch?v=Vwigmktix2Y</p>	VGA/projector; sound
Middle of period	10 minutes	<p>JIGSAW: Divide students into small groups and assign each group a type of design:</p> <ol style="list-style-type: none"> 1. Case study 2. Survey research 3. Quasi-experiment 4. True-experiment <p>Using their notes from the pre-class guided practice, have each group come to a consensus on the defining features of each design, its advantages/disadvantages, and an example of what the design looks like.</p>	Space for groups to form their own workstations; materials (paper/pencil or laptops) for groups to take notes
Middle of period	10 minutes	JIGSAW PRESENTATIONS: Each group presents their findings for 2-3 minutes each.	VGA/laptop/projector for groups who want to present using Powerpoint/Prezi

Middle of period	2 minutes	<p>POLL: Using Clicker, Menti, or raising of hands, ask students the following questions:</p> <p>Typically carry \$1.50 or more in coins in your pocket or purse?</p> <p>Have you ever been camping?</p> <p>Have you worn blue jeans at least once in the past week?</p> <p>Do you prefer ice cream over apple pie as a dessert?</p> <p>Have you ever visited Disneyland?</p> <p>Do you know the difference between an apple and a potato?</p> <p>Use their answers to demonstrate that their responses to one is likely correlated to their responses to the others, but this is no causal relationship.</p>	Smartphones or physical clickers for students
middle of period	8 minutes	<p>DISCUSSION: Ask students to come up with their own examples of illusory correlations. Examples:</p> <ul style="list-style-type: none"> ☒ It always rains on the week-end ☒ It always rains after you wash the car ☒ The phone always rings when you are in the shower ☒ Librarians are quiet ☒ Doctors are wealthy 	None

middle of period	10 minutes	<p>SMALL GROUPS: Ask groups to create 1 quasi-experimental, between-subjects, non-equivalent groups design, post-test only.</p> <p>Ask: How would you rule out confounds/show causality?</p> <p>In addition, ask students to create 1 quasi-experimental, within-subjects, pretest-posttest design</p> <p>Ask: How would you address possible testing/outside event effects?</p>	Space for groups to form their own workstations; materials (paper/pencil or laptops) for groups to take notes
End of period	15 minutes	<p>THINK-PAIR-SHARE</p> <p>Prepare students for the post-class assignment (APA style paper) by asking them to think about the nature of the study they want to design (non-experimental, quasi-experimental, experimental) and draft the following, then pair and share with a partner:</p> <p>If experimental or quasi-experimental:</p> <p>What are the factors (IVs/DVs)?</p> <p>What is the design (e.g., # of factors, # of levels)?</p> <p>Between or within subjects?</p> <p>What are the predicted Main Effects and Interactions?</p> <p>Afterwards, hand students the advanced guided practice</p>	Paper/laptops for notetaking; space for partners to discuss and share; hard copies of the advanced guided practice to pass out

Flipped BEFORE CLASS Work Plan Template

Basic learning objectives	Activity and rationale	Instructions to students
<p>Define the different types of experimental design (non-experimental, quasi-experimental and experimental), including its subcategories (case study, survey, correlational, longitudinal, cross-sectional).</p> <p>Describe the advantages and disadvantages of each type of experimental design.</p> <p>Explain the different variables that can be present in a design: independent vs. dependent variables, controls, confounds, mediators, and moderators.</p>	<p>Even if the student never pursues a career as a research psychologist, all of them will come across research in everyday life from newspapers, social media, non-profit organizations, corporations, and the government. Thus, a major goal of this course is to develop their capacity for understanding and critically evaluating "scientific evidence."</p>	<ol style="list-style-type: none"> 1. Complete the QUESTIONNAIRE DESIGN ACTIVITY (see Guided Practice). 2. WATCH this video: https://methods.sagepub.com/video/researching-disgust-linking-theory-and-methods?fromsearch=true <p>ANSWER THE QUESTION ABOUT THE VIDEO (see Guided Practice).</p> <ol style="list-style-type: none"> 3. READ: Zhou, X., Vohs, K. D., & Baumeister, R. F. (2009). The symbolic power of money: Reminders of money alter social distress and physical pain. <i>Psychological Science</i>, 20(6), 700-706. https://journals.sagepub.com/doi/pdf/10.1111/j.1467-9280.2009.02353.x <p>ANSWER THESE QUESTIONS ABOUT THE ARTICLE (see Guided Practice).</p> <ol style="list-style-type: none"> 4. Complete the <u>Writing Hypotheses Worksheet (see Guided Practice)</u>.

Flipped AFTER CLASS Work Plan Template

Advanced learning objective	Activity and rationale	Instructions to students
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<p>Write a research question and a testable hypothesis, specifying the independent variable, dependent variable, and how each will be operationalized.</p> <p>Design a non-experimental study to test the above hypothesis.</p> <p>Design a quasi- or true experimental study to test the above hypothesis.</p> <p>Write an APA-style paper with a literature review, methods, predicted results, discussion and references section on one of the the studies outlined above.</p>	<p>A goal of this course is to sharpen students' ability to produce original psychological research in psychology and communicate it effectively in writing. Even if they do not plan to have a career in psychology or research, many of them will enter fields where their skills as a researcher will be a huge asset, and they may very well find yourself drawing on the material from this course to produce and evaluate original research as part of their job.</p>	<p>This project is a proposal for a research study you would like to do. It should showcase your research and critical thinking abilities and demonstrate that you are ready to participate in psychology research. Your grade will be based on the following criteria: theoretical foundation, unique and sophisticated contribution to the field of psychology, creativity, methodological elegance, ethical adherence, written report (including adherence to APA style), and oral presentation.</p> <p>ALL written assignments need to use 12-point Times New Roman font, double-spaced, with 1-inch margins.</p> <p>PAPER RUBRIC</p> <p>Introduction 1 pt for hook/introductory paragraph that overviews the paper 1 pt for a clear, specific, directional hypothesis</p> <p>Main Body 3 points for each reference (idea, evidence in support of idea, how it relates to your hypothesis—1 pt each) = 9 pts total</p> <p>Methods 1 pt for specifying the design (correlational, quasi, or experimental) 1 pt for participants (where recruited from, demographics, compensation) 1 pt for procedure 1 pt for measures</p> <p>Predicted results 1 pt for specifying the correct statistical test 1 pt for explaining what you expect to find</p> <p>General Discussion</p>
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		<p>1 pt for summarizing main points 1 pt for limitations and future directions APA style: 1 pt TOTAL: 20 PTS</p>
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