PS 211: Introduction to Experimental Design

Fall 2025 · Section C1

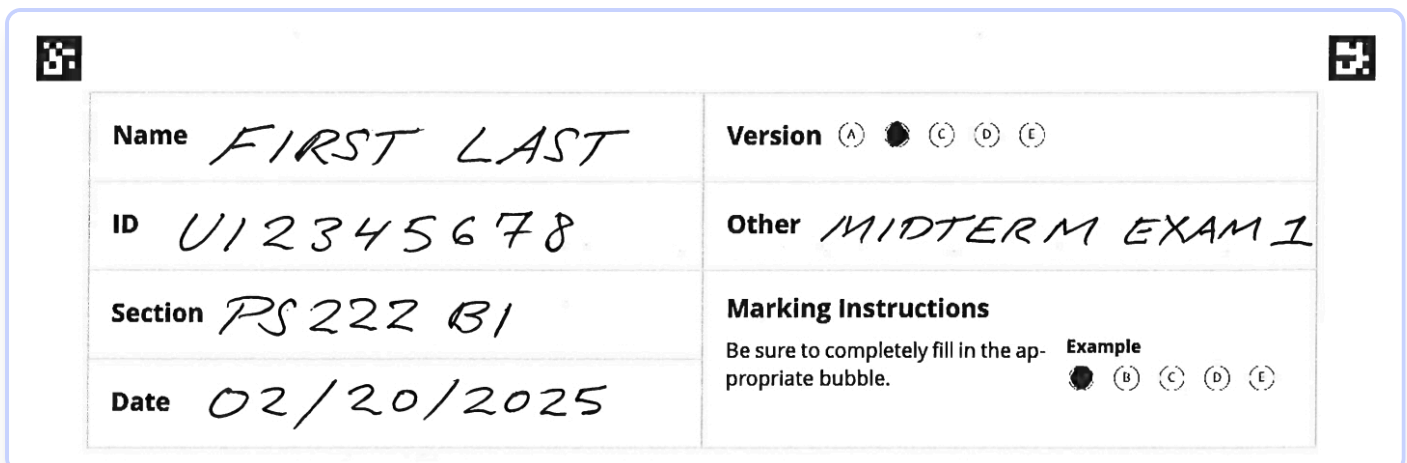
Discussion 4: Exam 1 Review & Poster Hypotheses

Outline for Today

- Attendance – please sign the sheet at the front
- I will cover Lecture 6 (not on the exam) next week (after the exam)
- Exam bubble sheet instructions
- Poster project: forming hypotheses
- Class quiz game

Exam bubble sheet instructions

- Bring a blue/black pen or pencil
- **Name in all caps**
- Must fill out **BU ID #** and **Exam Version**
- If you miss any of these things, then grading will be delayed for the entire class



Poster Project: broad topics → testable hypotheses

- Hypothesis = specific, directional prediction that connects your IV & DV
- Must be **measurable**, **clear**, and **feasible**
- Stuck? Think of hypotheses as "If..., then..." statements. *If (change in IV), then (change in DV)*
- Always specify the IV levels you're comparing
  - For >2 levels, describe the expected pattern (e.g., "Performance decreases as noise increases")
- E.g., "If students drink coffee before class, then their reaction times will be faster on a simple task compared to students who don't."
- E.g., "If people listen to upbeat music, then they will complete puzzles more quickly than when listening to calm music."
- E.g., "Students who study in quiet settings will recall more words than those who study with music."
- During class, check in with me so we can workshop your group's hypothesis

How to Brainstorm Research Ideas

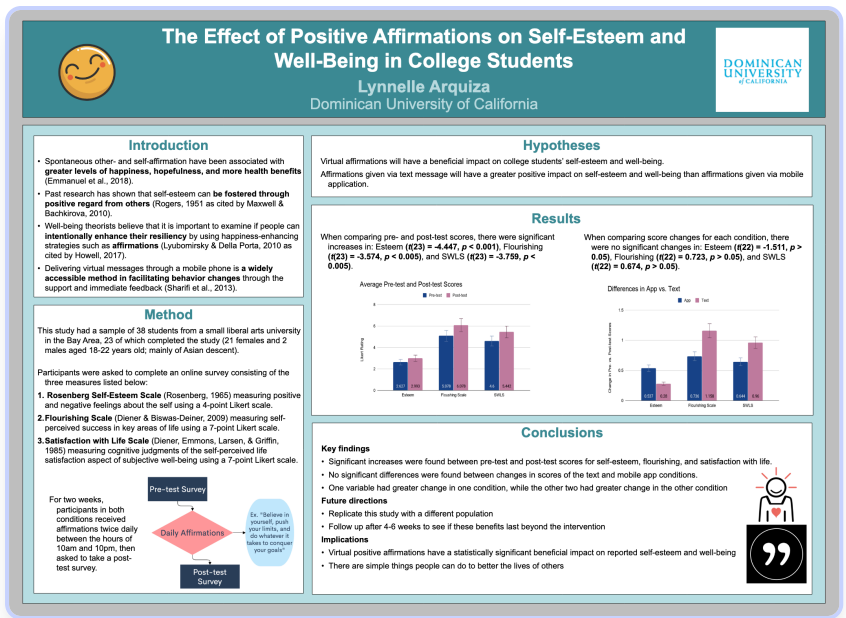
- Start with **broad psych topics** that interest you (e.g., sleep, stress, social media, learning).
- Ask: *What variables could we measure or manipulate?*
  - IV = what we change (e.g., study environment, type of task)
  - DV = what we measure (e.g., accuracy, reaction time, mood)
- Look for **connections to everyday life** or current issues.
- Keep it **simple and testable** within the scope of this class.
  - Although we will not be conducting experiments ourselves, our hypothetical study should still be attainable, understandable, and clearly tied to measurable variables.
- Be creative — but ground your ideas in **experimental design concepts** we've learned so far, so you can connect them directly to your poster.

Checklist – what should my poster have?

- Introduction
  - Current literature
  - Research question
  - Hypothesis
- Methods
  - Participants
  - Independent variable
  - Dependent variable
  - Analysis
- Results
  - Descriptive statistics
  - Inferential statistics
- Figures (1-2)
- Conclusion
- Limitations
- References (choose a citation style)

Design your figures and posters to be easily understood!

Good: https://scholar.dominican.edu/ug-student-posters/101/



Not so good: https://colinpurrington.com/2012/02/example-of-bad-scientific-poster/

Discussion poster project outline

- Discussion 3: Form groups and brainstorm research ideas
- Discussion 4: Research poster topics and form hypotheses
- Discussion 5: Refine topic and compile references
- Discussion 6-7: Introduction section
- Discussion 8-9: Methods section
- Discussion 10-11: Analysis plan and limitations section
- Discussion 12: Finalize poster
- Discussion 13: Group poster presentations!