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## Do Psychology Students Learn to Critically Evaluate Research Evidence?

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CPA 2025, St. John's, Newfoundland

1

## Background

- Psychology programs claim that students learn to interpret and evaluate research evidence, but it is not clear that this is the case
- One of the most fundamental and important aspects of research methodology concerns internal validity
- Ignoring internal validity can lead to the development and implementation of ineffective or even harmful practices and policies

2

## Present Study

- Examine the extent to which undergraduate psychology students learn to distinguish between evidence that more clearly versus less clearly demonstrates a causal effect
- Is ability to distinguish between such evidence associated with
  - Completion of a research methods course?
  - Higher grades in the research methods course?

3

## Measure

- We created brief descriptions of research evidence for different study skills programs
- 4 descriptions, presented in randomly selected pairs, for a total of 6 pairs
- Total score = the proportion of correct responses (e.g., .70 = 70% correct responses)

4

Your university wants to implement a study skills program for university students to help them get better grades in their university courses. Your job is to use your knowledge of research methods to choose the program with the strongest evidence for its effectiveness at raising university students' grades.

Based on the evidence presented below for each program, which study skills program would you recommend your university implement?

5

- Program 1
  - ✗ Students who volunteered to participate in this study skills program had a grade point average (GPA) for the following year that was 10% higher than did students who did not participate in the study skills program.
- Program 2
  - ✓ Students who were randomly assigned to participate in this study skills program had a grade point average (GPA) for the following year that was 10% higher than did students who were randomly assigned not to participate in the study skills program.

6

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- Program 1
  - Students who volunteered to participate in this study skills program had a grade point average (GPA) of 85% for the following year.
- Program 2
  - Students who volunteered to participate in this study skills program had a grade point average (GPA) for the following year that was 10% higher than did students who did not participate in the study skills program. This difference remained even after statistically controlling for differences between the groups on age, gender, race, income, and past grades in university and high school.

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7

## Method

- Online survey with test and questions about course completion and grades
- 389 students in undergraduate psychology courses
- 22 faculty members in psychology department

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8

## Validity of the Test

- Faculty agreed with our ranking of the evidence in our research methods test
  - $M = 0.99$ ($SD = 0.03$)
- Provides some confidence in the validity of our test

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9

## Test Performance not Associated with Completion of Research Methods Course

- Little difference in test performance between students who had taken a research methods course and those who had not taken that course ($r = .04$)
  - Completed research methods course ($n = 117$)
    - $M = .56$ ($SD = .27$)
  - Did not complete research methods course ($n = 272$)
    - $M = .53$ ($SD = .29$)

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10

## Test Performance Weakly Associated with Grade in Research Methods Course

- Only a small association between test performance and a higher letter grade in the research methods course
  - $r = .10$
  - Median grade = A- (ranged from D- to A+)

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11

## Conclusion

- Our results are consistent with the possibility that students are not learning basic ideas about internal validity from psychology research methods courses
- Without such basic knowledge, it is unlikely that students will graduate with the ability to make evidence-based decisions that psychology departments promise and that employers and society need

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12

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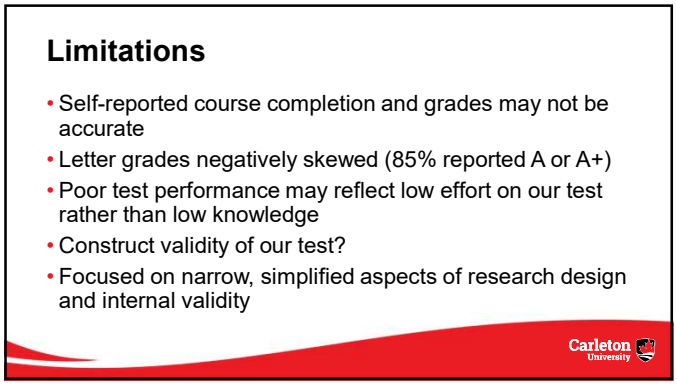


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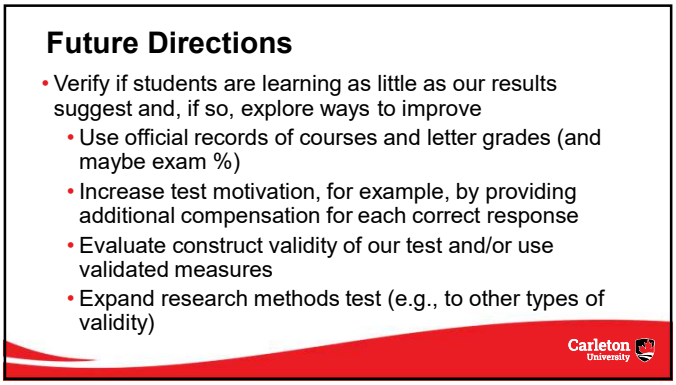


14


15