

First Name: _____ Last Name: _____

Student ID #: _____

PSC 041

Research Methods in Psychology

WQ 2024

Unit 4 Exam Version A

Research Summary

Please answer the following questions in the space provided. Only write on the lines.

Adapted from: Hamm, J. M., Perry, R. P., Chipperfield, J. G., Hladkyj, S., Parker, P. C., Weiner, B. (2020). Reframing achievement setbacks: A motivation intervention to improve progress toward graduation for students in Science, Technology, Engineering, and Mathematics (STEM) fields. *Psychological Science*.

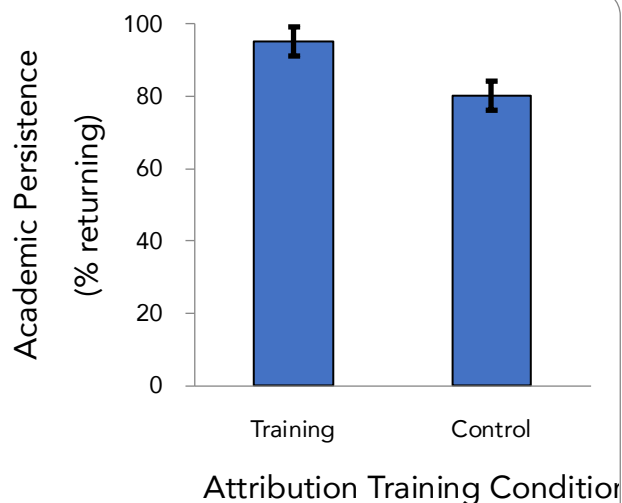
Why do some people finish a college degree and others drop out?

One thing that sets apart students who graduate from those who drop out is the amount of responsibility they take for their own academic performance. Those who graduate tend to take responsibility for their own actions and those who drop out tend to blame things beyond their control (i.e., imagining that a poor grade was due to an unfair professor rather than time spent studying.)

Can we train students about how to attribute their academic successes and failures in a way that can help them persist with their studies and earn sufficient units each year? To answer this question, researchers recruited almost 1,000 first-year students at a large public university who had earned low grades in high school and were majoring in Science, Technology, Engineering, or Mathematics (STEM). The poor performance in high school meant that these students were at risk for dropping courses.

Half of the participants were randomly assigned to participate in an attribution training condition, while the other half were in a no-training (control) condition. Those in the attribution training condition completed one-hour in-person training each week of the semester for both semesters of their freshman year. The training happened in groups of 20 and focused on helping them identify their own role in their college success. Participants were guided in understanding how their own actions and

choices (e.g., effort and study time) impact their academic performance and discussed ways to take responsibility for their academic experience. Participants in the control condition did not complete any training. At the beginning of the following year, the researchers looked up the university records and discovered which students returned for their second year and which students did not return. Results showed that the attribution training increased the proportion of students returning for the second year, $\chi^2(N=992) = 17.43, p = .003$. Overall, more than 88% of the students returned for their second year, 95% of those in the treatment condition and around 80% of those in the control condition.



Predictor Variable

Thinking about the Predictor / Independent Variable: Attribution Training Condition

Partial operational definition: Participants were either enrolled in one-hour per week attribution training or were not given any training

- 3 pts 1. The Predictor / Independent Variable is (fill in the box)
☐ **Continuous** ☐ **Categorical**
- 3 pts 2. How was the Predictor / Independent Variable measured? (fill in the box)
☐ **Observation** ☐ **Physiological**
☐ **Self-Report** ☐ **It was manipulated**
- 5 pts 3. Is this a causal or associative claim? (fill in the box)
☐ **Causal** ☐ **Associative**
- 5 pts 4. This variable is (fill in the box)
☐ **within group** ☐ **between groups**

Use this information only for the next two questions:

Another researcher wants to extend this finding using a different approach to address the same research question. This researcher asks each student to choose if they want to take part in the attribution training or not. Attendance at the training sessions indicates that they are in the training group.

- 3 pts 5. How was this new Predictor / Independent Variable measured? (fill in the box)
☐ **Observation** ☐ **Physiological**
☐ **Self-Report** ☐ **It was manipulated**
- 5 pts 6. Is this new claim a causal or associative claim? (fill in the box)
☐ **Causal** ☐ **Associative**

Outcome Variable

Thinking about the outcome / dependent variable: Academic persistence

10 pts 7. How did the researchers **operationally define** the outcome / dependent variable? Describe it using your own words. *Be sure to include the levels or values and indicate how the codes will be interpreted.*

3 pts 8. The outcome / dependent variable is (fill in the box)

☐ **Continuous**

☐ **Categorical**

3 pts 9. How was the outcome / dependent variable measured? (fill in the box)

☐ **Observation**

☐ **Physiological**

☐ **Self-Report**

☐ **It was manipulated**

10 pts 10. Evaluate the **construct validity** of the outcome / dependent variable.

ProTips: Give an overall evaluation. Think about the face validity, the procedure, and the method-match to inform your decision. Use specific vocabulary. Be sure to only discuss this one variable.

Evaluate Internal Validity and Research Design

10 pts 11. For this research summary, *there is **not a history effect** because...*

10 pts 12. For this research summary, "making friends with the students in their 20-person weekly meetings during the training" **is a confound** because...

Sampling

5 pts 16. This is a _____ sample of all college students in the USA.

☐ **probability**

☐ **non-probability**

Summarize the findings

5 pts 13. How did the researchers summarize the findings? (fill in the box)

- ☐ **indicate strength and direction of the overall relationship**
- ☐ **compare group frequency**
- ☐ **compare group means**

5 pts 14. The error bars _____ overlap. Therefore, there likely ____ a real relationship between the variables? (fill in the box)

- | | |
|--|--|
| <input type="checkbox"/> do not; is | <input type="checkbox"/> do; is |
| <input type="checkbox"/> do not; is not | <input type="checkbox"/> do; is not |

5 pts 15. The p value is _____. Therefore, there ____ a statistically significant relationship between the variables? (fill in the box)

- | | |
|--|---|
| <input type="checkbox"/> greater than 0.5; is | <input type="checkbox"/> greater than 0.05; is |
| <input type="checkbox"/> greater than 0.5; is not | <input type="checkbox"/> greater than 0.05; is not |
| <input type="checkbox"/> less than 0.5; is | <input type="checkbox"/> less than 0.05; is |
| <input type="checkbox"/> less than 0.5; is not | <input type="checkbox"/> less than 0.05; is not |

Evaluate External Validity

10 pts 17. For this research, evaluate one aspect of **external validity**. You may include evidence for either a strength or a weakness. (e.g., is this authentic? does this generalize to other situations? does this generalize to other individuals?)

Use this information just for the following three questions:

Another researcher attempted to replicate this study. However, when they selected participants, they did not have any information about the students' intended major. They just selected participants from the entire incoming class rather than just those studying STEM. They then carefully replicated every step of the procedure. They did not find the same results; participants in the attribution training condition were just as likely to return the following year as those in the control group.

5 pts

18. This is a failure to

- ☐ **replicate**
- ☐ **generalize**

5 pts

19. This new finding brings into doubt the

- ☐ **external validity**
- ☐ **internal validity**

5 pts

20. This new finding ...

- ☐ **can be explained in a way that coexists with the original finding.**
- ☐ **indicates that one of the findings is likely to be invalid.**

Multiple Choice. Select the single best answer. Indicate your choice by filling in the box to the left of your selection. Do not put stray marks in the other boxes. If you need to change your answer and are unable to erase fully, clearly indicate your final choice (e.g., draw an arrow or circle it). 2.5 points each.

21. Spending on Social Security, Medicare, and Medicaid make up the largest portion of the U.S. federal budget.

This statement is ____ and therefore ____ belong in a scientific report

- | | |
|---|---|
| <input type="checkbox"/> factual, could | <input type="checkbox"/> opinion, could |
| <input type="checkbox"/> factual, could not | <input type="checkbox"/> opinion, could not |

22. Which of the following behaviors is/are (an) example(s) of plagiarism?

- ☐ Including a sentence that is copied without using quotation marks and a reference citation
- ☐ Representing another's work as your own
- ☐ Including a sentence that is copied and substituting a few words with their synonyms without citing the source
- ☐ All of these

23. In which section of a research article would a reader find the descriptive statistics that describe the findings of the study?

- | | |
|---------------------------------------|-------------------------------------|
| <input type="checkbox"/> Introduction | <input type="checkbox"/> Results |
| <input type="checkbox"/> Method | <input type="checkbox"/> Discussion |

Five principles of ethical research that are followed by the APA are respect for persons, beneficence, responsibility, integrity and justice.

24. Which of the following is included in the definition of justice?

- ☐ Individual performance in a research study is kept confidential
- ☐ Risk from the research to participants should be minimized
- ☐ Psychologists build trust and conduct their business professionally
- ☐ Research is conducted accurately and reported honestly
- ☐ The benefits of the research should apply broadly and not only to a particular group
- ☐ Participating in research is voluntary and participants can quit at any time
- ☐ Participants have an opportunity to understand the research and make an informed decision about participating

25. Which of the following is included in the definition of beneficence?

- ☐ Individual performance in a research study is kept confidential
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- ☐ Research is conducted accurately and reported honestly
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- ☐ Participating in research is voluntary and participants can quit at any time
- ☐ Participants have an opportunity to understand the research and make an informed decision about participating

26. To examine the use of phones during meals, a researcher observes people dining at a restaurant. Should this researcher obtain informed consent?

- ☐ Yes
- ☐ No

27. A researcher is concerned that a participant may share critical information about a study's purpose learned during a debriefing with other potential participants and that this disclosure could bias their responding. To avoid this potential bias, it ___ be ethical for the researcher to decide not to include a debriefing.

- ☐ would
- ☐ would not

28. Population: Enrolled undergraduate students at UC Davis.

Sample: Stand outside the MU at lunchtime. Approach students and ask them to participate in the study.

This sampling technique is best described as:

- | | |
|--------------------------------------|--|
| <input type="checkbox"/> Cluster | <input type="checkbox"/> Systematic |
| <input type="checkbox"/> Convenience | <input type="checkbox"/> Stratified Random |
| <input type="checkbox"/> Snowball | <input type="checkbox"/> Simple Random |
| <input type="checkbox"/> Quota | <input type="checkbox"/> Judgmental |

29. Which one of the following statements would be appropriate for the methods section of a research report?

- ☐ Past research shows men generally talk more than women
- ☐ For men, the average time talking was 10.7 minutes while for women the average was 7.4 minutes
- ☐ While the three men and three women discussed the issue, the experimenter measured time spent talking by starting and stopping stopwatches
- ☐ Contrary to popular belief, in groups of mixed gender, men talk more than women, interrupt more than women, and are more likely to direct discussion topics

30. Which one of the following statements would be appropriate for the introduction section of a research report?

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31. Random sampling impacts ____ validity. Random assignment impacts ____ validity

- | | | |
|--|--|--|
| <input type="checkbox"/> internal; external | <input type="checkbox"/> external; internal | <input type="checkbox"/> construct; internal |
| <input type="checkbox"/> internal; construct | <input type="checkbox"/> external; construct | <input type="checkbox"/> construct; external |

32. Which of the following is true of non-probability sampling but not for probability sampling?

- ☐ Every member of population has same likelihood of being chosen for sample
- ☐ Stronger external validity
- ☐ The sample may not be similar to population

33. If the outcome variable is measured ____ then we summarize it by calculating frequency and percent.

- | | |
|--|---|
| <input type="checkbox"/> categorically | <input type="checkbox"/> by observation |
| <input type="checkbox"/> continuously | <input type="checkbox"/> by survey |

34. All claims must have strong ____ but only ____ claims require strong external validity

- | | | |
|--|--|---|
| <input type="checkbox"/> Internal, value | <input type="checkbox"/> External, value | <input type="checkbox"/> Construct, value |
| <input type="checkbox"/> Internal, associative | <input type="checkbox"/> External, associative | <input type="checkbox"/> Construct, associative |
| <input type="checkbox"/> Internal, causal | <input type="checkbox"/> External, causal | <input type="checkbox"/> Construct, causal |