First Name:_____ Last Name:_____

Student ID #: _____

PSC 041 Research Methods in Psychology WQ 2024

Unit 2 Exam Version F

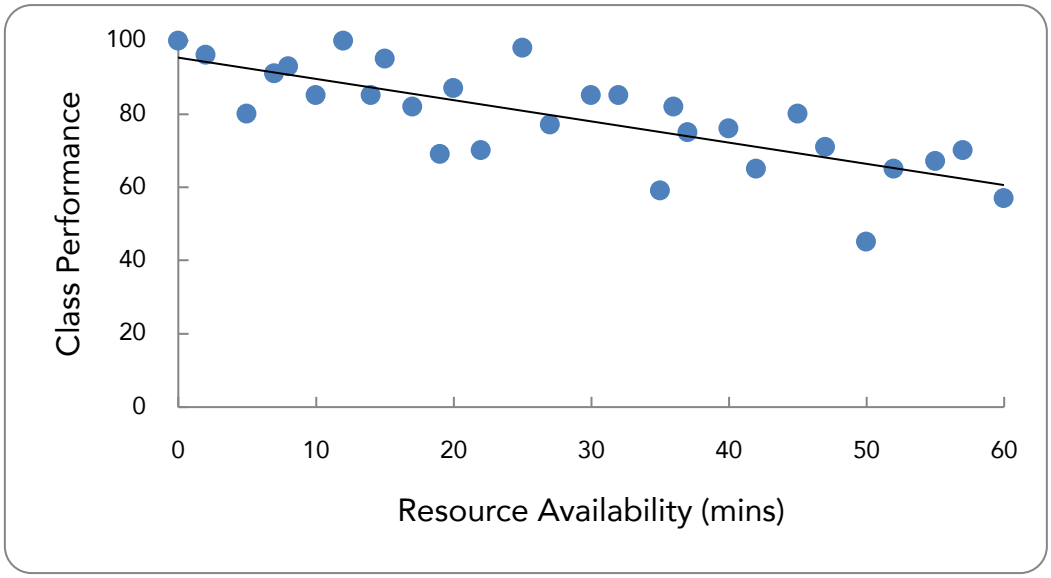
Research Summary

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

Adapted from: Ravizza, S. M., Uitvlugt, M. G., Fenn, K. M. (2016). Logged in and zoned out: How laptop internet use relates to classroom learning. *Psychological Science.*

The transition from in-person to virtual learning poses new opportunities and challenges. One of the most prominent issues being exam formats. Many professors have turned to "open-book" exams online, allowing students to utilize class and online resources as exam aids. This might seem like a gift to students, however, does access to a virtual world of information lead to better testing performance?

To investigate the relationship between online resource availability and class performance, researchers recruited 124 students enrolled in an introductory psychology course. When each student was ready to take an 1-hour timed exam they were instructed to restart their computer, open a single internet browser, and log into a proxy server. This proxy server tracked students' online resource availability by counting the number of minutes each student spent in any internet browser (e.g. Safari, Google Chrome, & Internet Explorer) tab other than the one opened for their exam. For each student, his, her, or their exam score (out of 100) was used as an indicator of class performance. Resource availability, as estimated by the time spent browsing other sites, was found to be related to student's class performance, $r(122) = -0.25$, $p = .01$. Researchers concluded that when taking exams, particularly those that have a time limit, spending too much time accessing other resources may hurt students more than help them.



Predictor Variable

Considering the predictor / independent variable, Resource Availability

10 pts 1. How did the researchers operationally define the predictor / independent variable? Describe it using your own words. *Be sure to include the levels or values and indicate how the codes will be interpreted.*

5 pts 2. The predictor / independent variable is (fill in the box)

- ☐ **Categorical**
- ☐ **Continuous**

5 pts 3. How was the predictor / independent variable measured? (fill in the box)

- ☐ **Observation**
- ☐ **Self-Report**
- ☐ **Physiological**
- ☐ **It was manipulated** (under the experimenter's control)

5 pts 4. Is this a causal or associative claim? (fill in the box)

- ☐ **Causal**
- ☐ **Associative**

20 pts 5. Threat to Construct Validity: This variable is vulnerable to a **Hawthorne effect** (reactivity). Describe why it is vulnerable to this effect. Describe how a researcher could reduce the vulnerability to this threat.

Outcome Variable

Considering the outcome / dependent variable, Class Performance

Partial operational definition: Grade on an exam

5 pts 6. The outcome / dependent variable is (fill in the box)

- ☐ **Categorical**
- ☐ **Continuous**

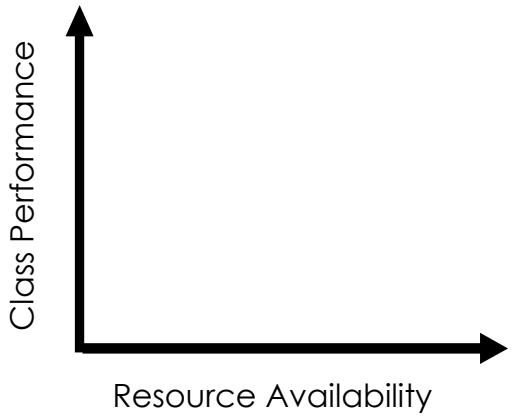
5 pts 7. How was the outcome / dependent variable measured? (fill in the box)

- ☐ **Observation**
- ☐ **Self-Report**
- ☐ **Physiological**
- ☐ **It was manipulated** (under the experimenter's control)

20 pts 8. 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.

Hypothesis

10 pts 9. Sketch the null hypothesis:



Summarize the findings

5 pts 10. What sort of relationship did the research reveal?

- ☐ **No relationship**
- ☐ **Strong negative linear relationship**
- ☐ **Moderate negative linear relationship**
- ☐ **Weak negative linear relationship**
- ☐ **Strong positive linear relationship**
- ☐ **Moderate positive linear relationship**
- ☐ **Weak positive linear relationship**

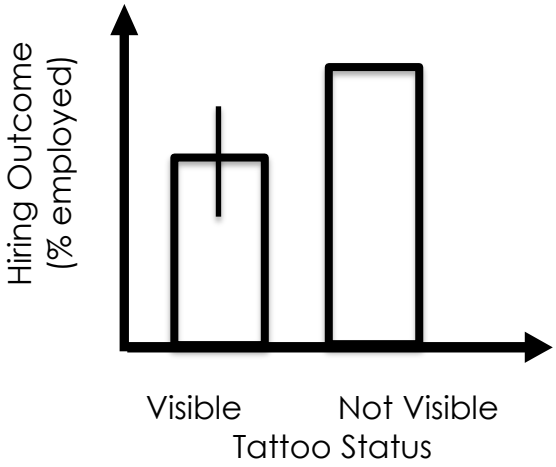
5 pts 11. The *p* value is _____ . Therefore, there ___ a statistically significant relationship between the variables. (fill in the box)

- ☐ **greater than 0.05; is**
- ☐ **greater than 0.05; is not**
- ☐ **less than 0.05; is**
- ☐ **less than 0.05; is not**
- ☐ **greater than 0.5; is**
- ☐ **greater than 0.5; is not**
- ☐ **less than 0.5; is**
- ☐ **less than 0.5; is not**

5 pts 12. Does this interpretation follow from this study: "increased internet usage caused a decrease in class performance" Why or why not?

Multiple choice/ fill in the blank / short answer.
Select the single best answer. Indicate your choice by filling in the box to the left of your selection. Write or draw other answers in the space provided.
2.5 points each.

13. Draw the remaining error bar on this graph such that the graph supports this claim: Having visible tattoos is related to getting a job



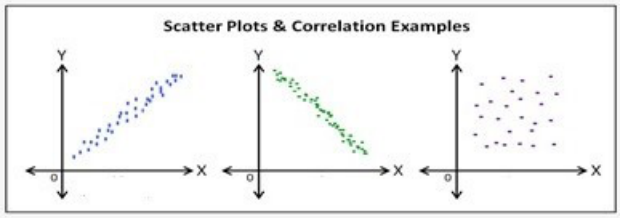
14. A correlation coefficient (*r*) greater than .1 means that _____.
    - ☐ as the value of one variable goes up, the other goes down
    - ☐ as the value of one variable goes up, the other also goes up

15. Which of the following tells us the direction of a correlation coefficient?
    - ☐ the sign of the r-value
    - ☐ the absolute value of the r-value

16. Which of the following values indicates a moderate correlation coefficient?
    - ☐ +/- 1.00 to 1.50
    - ☐ +/- .50 to 1.00
    - ☐ +/- .30 to .50
    - ☐ +/- .10 to .30
    - ☐ 0

17. Which of the graphs below show a strong positive correlation coefficient?

☐ A ☐ B ☐ C



18. The finding that "the fewer classes a person takes, the less money they spend on textbooks" illustrates ____relationship.
    - ☐ a positive linear
    - ☐ a negative linear
    - ☐ a curvilinear
    - ☐ no relationship

19. Which of the following statements is not an example of circular reasoning:
    - ☐ "Time was measured accurately because the two conditions took different lengths of time"
    - ☐ "Time was measured accurately because we used a stop watch"

20. You are developing a new test of Working Memory (how much information you can keep in mind and work with at a time). You take the currently accepted test and score a 12 (average) on a scale of 6-18.

    You then take your new test three times. Here are the results:
    Trial one: 6
    Trial two: 18
    Trial three: 12

    Your new Working Memory test is:
    - ☐ Valid but not reliable
    - ☐ Reliable but not valid
    - ☐ Neither valid nor reliable
    - ☐ Both valid and reliable

21. Which of the following types of data would be best gathered through self-report measures?
    - ☐ Physiological states
    - ☐ Knowledge or abilities
    - ☐ Behaviors
    - ☐ Feelings, beliefs, or opinions

22. A researcher administered a survey and is concerned that some participants may have hurried to answer the questions and answered them all negatively without taking the time to read the questions and consider the appropriate response for each one. To deal with this concern when designing future surveys, the researcher should _____.
    - ☐ plan to measure split-half reliability
    - ☐ add reverse-worded questions
    - ☐ plan to administer the survey again and measure the test-retest reliability
    - ☐ hide the goal of the survey from participants

23. Which of the following is an example of a directional research hypothesis?
    - ☐ Participants who spend longer browsing internet resources will do worse on the exam.
    - ☐ The time spent browsing internet resources will not be related to exam score.
    - ☐ Will participants who spend longer browsing internet resources do worse on the exam?

24. Which of the following is an example of Faking Bad?
    - ☐ pretending to not be in pain when you are in a lot of pain
    - ☐ pretending to be in a lot of pain when you are not feeling much pain
    - ☐ pretending to really like milk when you are talking with a dairy farmer
    - ☐ lying about who you will vote for to a pollster

25. At a swim meet, three judges score a diver a 5, 9, and 4 out of a possible 10 points. This is an example of low _____
    - ☐ internal validity
    - ☐ external validity
    - ☐ split-half reliability
    - ☐ inter-rater reliability

26. The reliability of measure has to do with the_____
    - ☐ Consistency in producing the same results
    - ☐ The accuracy of the measurements for the construct

27. Before recording any behaviors displayed by children in a third-grade classroom, Emeril visits the classroom continually for three weeks. Emeril's visitations will help lessen
    - ☐ validity.
    - ☐ reactivity.
    - ☐ reliability.
    - ☐ sampling bias.

28. Surveys are most effective at gatherings information about
    - ☐ attitudes and intentions
    - ☐ behaviors
    - ☐ causal relationships
    - ☐ all of the above

29. Jack has a difficult time answering the question "Are you in favor of increasing tuition in order to increase the number of classes and parking spaces offered?" because it is a _____ question.
    - ☐ loaded
    - ☐ double-barreled
    - ☐ simplistic
    - ☐ yea-saying and nay-saying

30. A positive correlation coefficient tells us that
    - ☐ the relationship between our two variables is very strong.
    - ☐ there is no relationship between variables.
    - ☐ if we have a high score on one variable, we have a low score on the second variable.
    - ☐ if we have a low score on one variable, we also have a low score on the second variable.

31. If it was discovered that drinking fine wine was associated with good health, one could:
    - ☐ predict that people who are healthier tend to drink fine wine
    - ☐ conclude that people who can afford to drink wine can also afford good health care
    - ☐ conclude that only healthy people drink wine
    - ☐ conclude that some chemical in the wine caused improved bodily functions

32. If you question the construct validity of a study, which of the following questions would you be asking?
    - ☐ How were the participants recruited?
    - ☐ Which statistic should be computed?
    - ☐ Were the variables measured accurately?
    - ☐ Does the predictor variable cause changes in the outcome variable?