

EDUR 8131: Test 3  
(Total Points = 38)

**Due:** See Folio

**Instructions:** Submit test responses as a PDF attachment in Folio Dropbox. Dropbox submission instructions:

1. Convert your test responses to a PDF file -- only PDF files will be accepted.
2. In Folio, select "Assessments" and choose "Dropbox";
3. Select "EDUR 8131 Test 3"
4. "Submit Files" page will open:
  - a. select "Add a File"
  - b. select "Browse" button, locate your PDF then highlight that file and click "Open"
  - c. select "Upload"
  - d. add any Comments you wish
  - e. select "Submit" button to submit PDF file
5. Click "Done" on File Upload Results page.

Please note:

- Include your name at the top of the first page of your answer document; if no name appears then a percentage point penalty of -2 will be applied to the test grade.
- Include only answers and the corresponding test item number – DO NOT include test questions or test instructions, and the test item number; if these are included you will be required to resubmit answers.
- Occasionally students will write answers on the PDF test and because the test contains instructions and questions, there is little room for answers or for my feedback. Do not write answers on the test; use a new document to write answers.
- Include one or two lines of blank space between each question so I have room to write feedback.

Below is an example of an answer submission to illustrate the above instructions:

<http://www.bwgriffin.com/gsu/courses/Example-Test-Answers.pdf>

Contact me in Folio if you have questions. For instructions creating PDF files, see the course site:

<http://www.bwgriffin.com/gsu/courses/edur8131/>

Your name must appear at the top of the first page of your test responses. Failure to include your name will result in a 3-percentage point reduction of the test grade.

**Work independently of other people;** do not consult with anyone on this test. You may use your course notes, textbooks, and a statistical analysis program (e.g., Excel, SPSS) when addressing each question. Contact the instructor if you have questions.

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1. Below are several research scenarios. Indicate which set of statistical analyses (e.g., ANOVA, independent samples t test, correlated samples t test, correlation, chi-square, regression) should be used to analyze the data collected in study, and explain why that statistical test should be used (2 points each; 8 points total).

(a) Teachers at a local middle school were interested in exploring the effects of a collaborative peer tutor teaching program on the motivation levels seventh-grade students. Four of eight classes of seventh grade students were randomly selected at Bulloch Middle School to serve as subjects in this study. Students within each class were then randomly assigned to one of three groups: a collaborative peer tutor teaching program, group learning activities, or individual learning activities. Each class was taught by a different teacher. The Middleman motivation scale was used to measure motivation in the subjects, and this scale produces scores that range from 1 to 25 with higher scores indicating greater motivation. Validity for the Middleman scale was previously ascertained by examining how scores

from the Middleman motivation scale corresponded to scores from variables that are theoretically related to motivation, such as effort to achieve, persistence, intelligence, and self-efficacy. Internal consistency for scores from the Middleman scale typically range between .81 and .86. Data for the current study were collected at the end of a 16 week program. Analysis of these data revealed that students in the individual learning activities demonstrated a statistically higher level of motivation compared with students in the two other, traditional groups (collaborative peer tutor teaching program, and group learning activities).

(b) Two researchers hypothesized that students who spend less time reading at home will have lower standardized reading scores. The researchers asked all students in each fifth grade classroom within the local school district to participate in the study. These students kept daily home reading logs over a four month period. Based on this information, the researchers calculated the average number of minutes read daily for each student. The amount of reading time and the corresponding reading test score for each student were analyzed to determine the type of association between these two variables.

(c) A researcher developed a video designed to enhance creative writing. Fifty high school students were asked to participate in the study. Twenty-five were randomly assigned to group A and the other twenty-five were assigned to group B. The video was shown to group A, and group B read a short story by Mark Twain. Both groups knew they were participating in an experiment, and both groups also knew that group A was the experimental group. After receiving their treatments, both groups were asked to write an essay on anything they chose. Next three English teachers read each and every essay and provided a creativity score for the essay ranging from a low of one to a high of ten.

(d) Dr. Einstein is interested in determining whether an association exists between teacher experience with sexual harassment and satisfaction with their job. Einstein anticipates that teachers sexually harassed by their administrators will show less satisfaction with their jobs than teachers sexually harassed by other teachers. In addition, he also thinks that those who are sexually harassed, by anyone on the job, will be less satisfied with their jobs than those who are not sexually harassed. Einstein created a list of all public and private schools in the states of Texas, California, and New York, randomly selected thirty schools and mailed his sexual harassment and satisfaction instrument to each teacher within the thirty schools selected. Once the data from the surveys were received, Einstein analyzed the data to learn if satisfaction differed by harassment group. Satisfaction was measured on a scale that ranges from 15 to 75 with higher scores indicating greater satisfaction.

2. For each of the following indicate whether the decision regarding the null hypothesis is reject or fail to reject. When needed, assume  $\alpha = .05$ . (1 point each; 5 points total).

	Obtained Statistic	Test Information	Decision
(a)	$t = -3.26$	Critical $t = \pm 2.85$	_____
(b)	$b_1 = 0.11$	CI = .04, .18	_____
(c)	$F = 9.08$	Critical $F = 2.86$	_____
(d)	$R^2 = .75$	p-value = .01	_____
(e)	$Z = 1.97$	p-value = .049	_____

### Important Note

For the remaining items you are to create an APA styled results presentation. This will include a table of results, and written inference and interpretation. If you are unclear about APA styled tables, review carefully the examples provided in the linked Word document on the Course Index. Each item is worth 10 points (unless specified otherwise) and will be graded according to the following rubric: Calculation Numeric Results 5 points, Written Presentation 2 points, and APA style 3 point.

3. Foos and Clark (1982) studied the influence of expectations on test performance. They found that the kind of test that a student expected to take would affect the way in which they studied the material. Below are scores from an experiment designed to replicate Foos and Clark's research. A total of 20 undergraduate students were given a 3000-word passage to read and were told that they would be tested over the material. They were then assigned to one of four

treatment groups. In the first group, the students were told to expect a multiple-choice test, in the second group, they were told to expect an essay; in the third group, they were told to expect a memory test; and in the fourth group they were not told what to expect. After studying the passage, all students were give exactly the same test, which had a combination of multiple-choice and short-answer items. Given below are scores from their test. Is there any evidence that expectation influences performance? Use an ANOVA for these data. (10 points)

Type of Test Expected			
Multiple-Choice	Essay	Memory	Told Nothing
10	12	19	22
9	16	23	19
7	13	19	18
14	15	21	25
8	10	23	23

Note. Higher scores indicate better performance on the final test.

4. Recently I collect data from 920 students asking them to evaluate instruction in their classes at GSU. Many questions were asked including one that asked students to rate their instructor. The specific wording and response options for this question are listed below:

	Poor	Fair	Good	Very Good	Excellent
30. Overall, how would you rate this instructor?	1	2	3	4	5

Two other variables measure were intrinsic motivation (internal interest in learning material for the given course) and instructor autonomy support for students (providing students with some degree of decision making within the course). To measure intrinsic motivation, responses to the following three items were averaged:

	Strongly Disagree				Strongly Agree
20. The most satisfying thing for you in this course is trying to understand the content as thoroughly as possible.	1	2	3	4	5
21. In a class like this, you prefer course material that really challenges you so you can learn new things.	1	2	3	4	5
22. In a class like this, you prefer course material that arouses your curiosity, even if it is difficult to learn.	1	2	3	4	5

To measure autonomy support, responses to these items were averaged:

	Strongly Disagree				Strongly Agree
24. The instructor was willing to negotiate course requirements with students.	1	2	3	4	5
25. Students had some choice in course requirements or activities that would affect their grade.	1	2	3	4	5
26. The instructor made changes to course requirements or activities as a result of student comments or concerns.	1	2	3	4	5

Of interest to researchers of student ratings is whether autonomy support and intrinsic motivation predict overall student ratings of the instructor, and whether one is a stronger predictor than the other. Below are 30 randomly

selected cases from the data of 920 student responses. Use these data to learn whether autonomy support and intrinsic motivation predict overall ratings of the instructor. Use regression for these data which are linked below. (10 points)

[http://www.bwgriffin.com/gsu/courses/edur8131/data/test3\\_student\\_ratings.sav](http://www.bwgriffin.com/gsu/courses/edur8131/data/test3_student_ratings.sav)

Overall Rating of Instructor	Autonomy support	Intrinsic motivation
4.00	4.00	3.00
4.00	3.00	3.00
4.00	3.67	3.67
3.00	3.00	2.67
5.00	4.33	4.67
4.00	1.00	4.67
5.00	4.00	5.00
2.00	2.67	3.33
2.00	3.00	2.00
5.00	4.33	4.00
4.00	3.67	4.33
5.00	5.00	5.00
5.00	4.00	1.00
1.00	1.00	3.00
5.00	3.67	5.00
5.00	4.00	4.00
4.00	4.00	3.67
4.00	1.67	3.67
4.00	3.67	3.00
3.00	3.00	1.00
3.00	4.00	3.00
4.00	3.67	3.00
2.00	1.00	4.00
1.00	3.33	4.33
3.00	2.33	3.33
5.00	4.33	3.67
5.00	3.33	4.33
5.00	3.67	4.00
5.00	4.00	3.33
4.00	3.00	3.33