

# Quantitative Literacy – PSYC 300 02L3

LO 1

## PSYC 300 02L3

Academic Year 2018-19

Outcomes Taxonomy

Term: 2018 Fall [Back to List](#)

GEP Level 1 Category 4 LO 1

### Foundation Level: Quantitative Literacy LO 1

Upon completing this requirement, students will be able to select, analyze, and interpret appropriate numerical data used in everyday life in numerical and graphical format.

Requested By: Quantitative Literacy

Remember, Apply, Analyze, Evaluate Nonfunctional Verb(s)

#### Assessments

[Exam](#) [Edit](#)

Sep 4, 2018 - Dec 16, 2018

Reinforced

[Attachments](#)

[Create Assessment](#)

EVALUATED RESULT		<a href="#">Latest</a>	
Exceeded	60%	15	
Met	16%	4	
Partially Met	20%	5	
Not Met	4%	1	

[Edit Results](#)

## Analysis

Because this outcome was assessed using three multiple choice questions, each question was scored as either correct or incorrect (0 or 1) and a total score was created by summing the values. As a result, each individual student could have received anywhere from a 0 (Unacceptable) to 3 (Exceptional). On this outcome, 19 students (76%) met or exceeded expectations, whereas 6 students (24%) did not meet the expectations.

## Summary

This indicates that, while most students were able to identify the appropriate statistical analysis for this portion of the course, a small number of students struggled with the task. Examination of the individual questions showed that, of the three questions, the second question was answered correctly most often.

## Use of Results

- During the review times and practice problems for each exam, I plan to bring in more examples that parallel the types of questions used on the exams.
- Whenever a data set is presented in class, students will be asked to identify the design features of the study and to explain the analyses strategy prior to analyzing the data.

LO2

# PSYC 300 02L3

📅 Academic Year 2018-19

📄 Outcomes **📄 Taxonomy**

Term: 2018 Fall [← Back to List](#)

GEP Level 1 Category 4 LO 2

## Foundation Level: Quantitative Literacy LO 2

Upon completing this requirement, students will be able to identify and apply appropriate strategies of quantitative problem solving in theoretical and practical applications.

Requested By: Quantitative Literacy

📄 Understand, Apply 📄 Nonfunctional Verb(s)

### Assessments

[Exam](#) [Edit](#)

Sep 4, 2018 - Dec 16, 2018

📄 Mastered

[Attachments](#) **9**

[Create Assessment](#)

EVALUATED RESULT		<a href="#">Latest</a>	
<b>Exam</b>			
Exceeded	<div><div style="width: 36%;"></div></div>	36%	9
Met	<div><div style="width: 52%;"></div></div>	52%	13
Partially Met	<div><div style="width: 8%;"></div></div>	8%	2
Not Met	<div><div style="width: 4%;"></div></div>	4%	1

[Edit Results](#)

## Analysis

Because this outcome was assessed using two 3-point problem-based questions, a total score was created by summing the points from the two questions. Consistent with the rubric, a student was marked as Unacceptable (0-1 points), Problematic (2-3 points), Satisfactory (4-5 points), or Exceptional (6 points).

## Summary

On this outcome, 22 students (88%) met or exceeded expectations, whereas only 3 students (12%) did not meet expectations. This indicates that student were quite successful in calculating the appropriate statistical procedure for the question. Examination of the individual questions showed very similar level of performance across the two questions.

## Use of Results

- I plan to simplify the first examples used in class to ensure development of the basic skills and then to scaffold increasingly more difficult examples to fortify and extend student skills.
- I also plan to develop a series of “remedial” problems designed for those students who have demonstrated difficulty with calculations earlier in the class.

LO3

# PSYC 300 02L3

📅 Academic Year 2018-19

📄 Outcomes ⚙️ Taxonomy

Term: 2018 Fall [← Back to List](#)

GEP Level 1 Category 4 LO 3

## Foundation Level: Quantitative Literacy LO 3

Upon completing this requirement, students will be able to construct a conclusion using quantitative justification.  
Requested By: Quantitative Literacy

⚙️ Create ⚠️ Nonfunctional Verb(s)

### Assessments [Create Assessment](#)

Exam [Edit](#)

Sep 4, 2018 - Dec 16, 2018

🔒 Reinforced [Attachments](#)

EVALUATED RESULT		<a href="#">Latest</a>	
Exceeded	<div style="width: 0%;"></div>	0%	0
Met	<div style="width: 76%;"></div>	76%	19
Partially Met	<div style="width: 12%;"></div>	12%	3
Not Met	<div style="width: 12%;"></div>	12%	3

[Edit Results](#)

## Analysis

Because this outcome was assessed using a simple acceptable-unacceptable judgment for each question but was measured across two questions, the sum of the points across the two questions indicated the performance for each student. Therefore, scores ranged from Unacceptable (0) to Satisfactory (2), with an Exceptional category not possible. [This is justified given that students were largely following templates in writing these sentences.] On this outcome, 19 students (76%) met expectations, whereas 6 students (24%) did not meet expectations.

### **Summary**

This indicates that the majority of students were able to effectively summarize the results of the statistical analyses in appropriate APA style, though several students missed aspects of the summary. To be fair, some of these students received poor scores on these questions because they did not calculate the necessary values in the previous parts of the questions and therefore had nothing to report; examination of the individual questions showed that this was particularly prevalent for the first problem-based question.

### **Use of Results**

- I plan to update the examples/templates and to clarify the importance of these for future students.
- Remedying the issues with Learning Outcome 2 should spill over to resolving this one to some extent.



## PSYC 300: STATISTICS FOR PSYCHOLOGISTS, FALL 2018

Lecture: MWF, 1:00 – 1:50, D216 Science

Section 3 Lab: Tuesdays, 9:00 – 10:50, D326 Science

Section 4 Lab: Tuesdays, 11:00 – 12:50, B238 Science

Contact Person

Title

Office

Phone

Email

Office Hours

### Course Objectives and Teaching Philosophy

#### Course Description and Objectives

This course will introduce you to statistical reasoning and the application of basic statistical (descriptive and inferential) procedures. This course is intended to provide an understanding of why a particular statistic is appropriate for a given experimental design as well as the "inner workings" of each statistical test.

This is a basic statistics course that meets the requirements for the Psychology Major as well as several other majors on campus. This course also meets the Quantitative Literacy requirements for the General Education Program. Therefore, while completing this course, you will:

- Explain the logic and appropriate applications of statistical analyses for univariate or bivariate research designs, problems, or hypotheses.
- Calculate the statistics necessary to solve problems (both manually and via computer), including descriptive statistics, statistical significance tests, effect sizes, and confidence intervals.
- Communicate the meaning of statistical analyses in everyday language and professional formats (e.g., graphs, tables, and words).

It is expected that you have already accrued a basic understanding of the fields of mathematics and psychology. As such, it requires that you have completed PSYC 110 (Introduction to Psychology) or its equivalent and MATH 095 (College Algebra) or its equivalent. It is strongly recommended that you have also completed PSYC 200 (Research Methods in Psychology).

#### My Teaching Philosophy and Strategy

My job is to facilitate your achievement of these objectives. *Thus, I am going to do what my professional training and experience suggest helps your long-term learning of important and relevant content and skills.* To that end, I emphasize timely reading of course materials, in-class participation, out-of-class activities and homework, and thorough examinations. Overall, you should not think of your professors as lecturers or information deliverers, but rather as discussants, consultants, and guides in your education.

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Additional descriptions of these learning outcomes and the course structure I use to meet them are available on the course Canvas site.

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## Course Grading

### Evaluation of Performance

Evaluation of student performance will be based on homework assignments and in-class exams. An overview of the point values for each of the course assessments is given below.

Assessments of Objectives:	Points Earned:
<u>Collaborative Homework Assignments:</u>	
Assignment 1: Math and Methods Review	____ / 12 points
Assignment 2: Frequency Distributions	____ / 12 points
Assignment 3: Descriptive Statistics	____ / 12 points
Assignment 4: Standardized Distributions	____ / 12 points
Assignment 5: Statistical Relationships	____ / 12 points
Assignment 6: Sampling Distributions	____ / 12 points
Assignment 7: Interval Estimation	____ / 12 points
Assignment 8: One Sample Statistics	____ / 12 points
Assignment 9: Two Sample Statistics	____ / 12 points
Assignment 10: Analysis of Variance	____ / 12 points
Assignment 11: Pairwise Comparisons	____ / 12 points
Assignment 12: Repeated ANOVA	____ / 12 points
Assignment 13: Factorial ANOVA	____ / 12 points
<u>Individual Assignments and Exams:</u>	
Exam 1: Descriptive Statistics	____ / 40 points
Exam 1: Mandatory Redo	____ / 12 points
Exam 2: Basic Inferential Processes	____ / 40 points
Exam 2: Mandatory Redo	____ / 12 points
Exam 3: Multiple Group Differences	____ / 40 points
	<b>____ / 300 points</b>

*NOTE: Extra credit will NOT be available in this course.*

The weekly homework assignments are designed to provide you with opportunities to explore the main concepts and to apply the material. *You may confer with other students and the instructor if you have questions, but you must submit work that is your own.*

The in-class exams are a combination of multiple choice questions, short essay questions, and problem-based questions. *You will be permitted to use your notes during the exam.* The exams, as well as the “redo” portions of the exams, are to be done independently (without consulting with other students).

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The grading rubric and sample questions for the exams  
are available on the course Canvas site.

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### Late Assignments and Make-Up Exams

*Each assignment's due date is clearly marked on this syllabus.* If you know ahead of time that you will miss a due date for an assignment, you should submit the assignment before the due date.

*Similarly, each exam will start promptly at the beginning of class on the scheduled exam day.* Students who arrive late to an exam will only be allowed to take it if they arrive before the first student finishes and leaves the room. After that point, requests to take exams will be declined unless they are consistent with the make-up policy below.

For all unexpected absences (e.g., illnesses, etc.), I require notice no later than the morning of the due date or exam. Only students with instructor-validated documentation for the absence will be given an extension or a make-up exam; failure to follow this policy will result in an automatic zero for the assessment in question.

Unless you are taking an exam through the Disability and Assistive Technology Center, all make-up exams will be proctored through the Department of Psychology during one of the official times. I will notify you of available times, and you will be expected to schedule during one of these times. Under most conditions, make-up exams should be completed within one week of the original exam date.

## Determination of Final Course Grades

Final course grades are determined by the percentage of possible points that you earn.

Grade:	Points Earned:	% of Total:	Grade:	Points Earned:	% of Total:
A	278 – 300	93%-100%	C+	230 – 238	77%-79%
A-	269 – 277	90%-92%	C	218 – 229	73%-76%
B+	260 – 268	87%-89%	C-	209 – 217	70%-72%
B	248 – 259	83%-86%	D+	200 – 208	67%-69%
B-	239 – 247	80%-82%	D	179 – 199	60%-66%

NOTE: Scores below 60% equate to a grade of F.

Final grades of “Incomplete” will be given only under extreme circumstances. An Incomplete is not an option for students who feel overwhelmed by academics, work schedules, or extracurricular activities. Typically, an Incomplete must be completed within one semester otherwise an “F” will result.

## Course Materials

### Required and Additional Readings

There one required textbook for this class and it is available at text rental. If you decide to purchase, borrow, or rent the book through another source, please be sure to get the correct edition. Note that we are using the “brief course” version.

Aron, A., Coups, E. J., & Aron, E. N. (2011). *Statistics for the behavioral and social sciences: A brief course* (5<sup>th</sup> ed.). Upper Saddle River, NJ: Prentice Hall.

At various points throughout the course, I may need to supplement the text with chapters and articles from other sources.

### Online Materials

All homework assignments, exam study guides, course grades, and additional course materials will be posted online through Canvas. *Students should check this site regularly to get the updated courses materials.* First and foremost, you should be comfortable using online resources to learn.

If you need technical assistance at any time during the course or to report a problem with Canvas, you can visit with a Student Technology Tutor (Albertson Hall 018, 715-346-3568, [tlctutor@uwsp.edu](mailto:tlctutor@uwsp.edu)) or seek assistance from the HELP Desk (Albertson Hall 027, 715-346-HELP or 1-877-832-8977, [techhelp@uwsp.edu](mailto:techhelp@uwsp.edu)). *Failure to report a problem in obtaining the course materials will be treated as a failure to complete the requirement.*

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Optional readings, videos, and links providing useful advice for performing well in this course are posted on the course Canvas site.

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## Calculators and Computers

*Calculators are highly recommended for the assignments and most in-class work; you will also be allowed to use calculators on the exams. However, do not use a calculator as a crutch. If you do not understand the math you are asking the calculator to do, you will not understand the concept that you need to learn.*

*Most of the later homework assignments will also include a significant amount of computer work involving the software package SPSS (Statistical Package for the Social Sciences). It is accessible in all computer labs on campus through the Network Menu. We will spend considerable time in class dedicated to helping you understand this program.*

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An online textbook for using and understanding statistical software is available on my website and accessible through the course Canvas site.

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## Classroom Conduct and Accommodations

UWSP values a safe, honest, respectful, and inviting learning environment and has developed guidelines to ensure that each student has the opportunity to succeed. *All students are expected to be familiar with and to abide by the university's Community Rights and Responsibilities document (see <https://www.uwsp.edu/dos/Documents/CommunityRights.pdf>).*

### Attendance and Class Conduct

*By university policy, regular attendance is required (see <http://www.uwsp.edu/regrec/Pages/Attendance-Policy.aspx>). Thus, I will not give points for attendance; you are simply expected to be in class, both in body and mind. If this expectation poses a problem for you, please consider taking the course in a different semester.*

*Under federal and state laws, and university guidelines, I am required to report acts of a criminal or offensive nature that occur both within and outside of class. This includes acts of sexual harassment and assault, bias and hate crimes, illicit drug use, and acts of violence. Any disclosure or description of these incidents – both current and in the past – may be reported to the Dean of Students office (<http://www.uwsp.edu/dos/>) or the local authorities.*

### Academic Misconduct

*Academic misconduct (i.e., cheating) will result in an automatic zero on that exam or assignment for all people involved. I will follow up on all cases in the manner described in Community Rights and Responsibilities document.*

*Representation of another person's work as your own (i.e., plagiarism) will result in an immediate rejection of the work. Any student who engages in plagiarism will be given the opportunity to repeat the work and have it graded appropriately. Consistent with university policy, a written reprimand will be placed in the student's disciplinary file. "Accidental plagiarism" – naiveté about what constitutes plagiarism – will not be accepted as a legitimate excuse.*

*To maintain the integrity of in-class exams, the use of electronic devices will not be permitted during exams without prior documented approval from the Disability Services office or other pertinent offices on campus. This includes, but is not limited to, requests to use cellular or wireless network-enabled mobile devices for foreign language translation assistance. Students who are found using these devices will be dismissed and receive a zero for their exams.*

### Accommodations and Disabilities

If there are factors creating difficulties for you in this course that are recognized disabilities under the Americans with Disabilities Act, please provide me with appropriate notification from the Disability and Assistive Technology Center (103 Student Services Center, 715-346-3365, or at <http://www.uwsp.edu/disability/>). *I will follow all recommendations made by the Disability and Assistive Technology Center.*



If you are having difficulties of a personal (not academic) nature, I will refer you to the UWSP Counseling Center (Third Floor Delzell Hall, 715-346-3553, or at [counsel@uwsp.edu](mailto:counsel@uwsp.edu)). *Appropriate accommodations may be made for due dates, testing procedures, etc. at the instructor's discretion.*

### Extra Assistance and Tutoring

*If you would like extra assistance related to course materials or have any questions related to your performance in the course, please come by my office hours or set up an appointment. This should always be your first step in getting assistance, as most questions and concerns can be best addressed this way.*

However, if you would prefer help from a student beyond your instructor or colleagues in this class, you should contact the UWSP Tutoring-Learning Center (<http://www.uwsp.edu/tlc/>, 018 LRC, 715-346-3568).

## Tentative Course Schedule

This section offers a tentative schedule for the semester. Any changes in reading assignments, course schedule, or other aspects of the class will be announced in class and posted on Canvas. *You are responsible for all announcements of changes regardless of whether you are present in class.*

Additionally, please pay attention to the university calendar and associated policies. Specifically, I will strictly adhere to the university calendar, including drop/add dates and the final exam schedule. See <http://www.uwsp.edu/regrec/Pages/calendars.aspx> for more details.

DATE	Preparatory Readings	Topic for Class	Homework
<b>Week 1</b> 9-4	<b>Overview of the Course: What is Statistics for Psychologists All About?</b> Landrum (2002)	Introduction to the Course	
<b>Part I: Basic Measurement and Descriptive Statistics</b>			
<b>Week 2</b> 9-5 9-7 9-10 9-11	<b>Frequency Distributions: How Do We Describe and Represent What We Measure?</b> Aron et al. (2011, Ch. 1)	Understanding Variables and Scores Understanding Research Design Calculating Frequencies and Percentiles Lab on Frequency Distributions	Assignment 1 Due
<b>Week 3</b> 9-12 9-14 9-17 9-18	<b>Descriptive Statistics: How Do We Best Summarize a Distribution?</b> Aron et al. (2011, Ch. 2)	Understanding Distributions Characteristics Calculating Central Tendency Calculating Variability Lab on Descriptive Statistics	Assignment 2 Due
<b>Week 4</b> 9-19 9-21 9-24 9-25	<b>Standardized Scores: How Do We Use Transformations to Communicate Relative Standing?</b>	Understanding Standardized Scores Calculating Percentiles with z Scores Calculating Probability with Scores Lab on Standardized Scores	Assignment 3 Due
<b>Week 5</b> 9-26 9-28 10-1 10-2	<b>Correlations: How Do We Measure the Relationship Between Variables?</b> Aron et al. (2011, Ch. 3)	Understanding Statistical Relationships Calculating Correlations Calculating Shared Variance Lab on Correlations	Assignment 4 Due
<b>Week 6</b> 10-3 10-5 10-8 10-9	<b>Integration: How Can We Integrate What We Know About Measurement and Description?</b>	Exam Preview Conceptual Integration Integration Problems <b>Exam 1</b>	Assignment 5 Due

<b>Part II: One and Two Sample Estimation and Inferences</b>			
<b>Week 7</b>	<b>Sampling Distributions: How Do We Determine the Likelihood of a Statistic?</b>		
10-10	Aron et al. (2011, Ch. 4)	Exam Review and Applied Probability	
10-12		Understanding Sampling Processes	
10-15		Calculating the Probability of a Statistic	Exam 1 Redo Due
10-16		Lab on Sampling Distributions	
<b>Week 8</b>	<b>Interval Estimation: How Do We Make Inferences about an Unknown Population Mean?</b>		
10-17	Aron et al. (2011, Ch. 6)	Understanding Interval Estimation	
10-19		Calculating Probability Using a <i>t</i> Distribution	
10-22		Calculating Confidence Intervals	Assignment 6 Due
10-23		Lab on Interval Estimation	
<b>Week 9</b>	<b>One Sample Statistics: How Do We Use Probability to Make Decisions about a Mean?</b>		
10-24	Aron et al. (2011, Ch. 5)	Understanding Statistical Significance	
10-26	Aron et al. (2011, Ch. 8)	Calculating a One Sample <i>t</i> Test	
10-29		Calculating Supplemental Statistics	Assignment 7 Due
10-30		Lab on One Sample Statistics	
<b>Week 10</b>	<b>Independent Samples: How Do We Determine Whether Two Groups are Different?</b>		
10-31	Aron et al. (2011, Ch. 9)	Understanding Independent Sample Designs	
11-2		Calculating Independent Sample Statistics	
11-5	Aron et al. (2011, Ch. 7)	Calculating Statistical Power	Assignment 8 Due
11-6		Lab on Independent Sample Statistics	
<b>Week 11</b>	<b>Integration: How Can We Integrate What We Know About Sampling and Inferences?</b>		
11-7		Exam Preview	
11-9		Conceptual Integration	
11-12		Integration Problems	Assignment 9 Due
11-13		<b>Exam 2</b>	
<b>Part III: Multiple Sample Estimation and Inferences</b>			
<b>Week 12</b>	<b>One-Way Analysis of Variance: How Do We Determine Whether Multiple Groups are Different?</b>		
11-14	Aron et al. (2011, pp. 314-333)	Understanding Multiple Group Designs	
11-16		Calculating Sources of Variability	
11-19		Calculating an Analysis of Variance	Exam 2 Redo Due
11-20		Lab on the One Way ANOVA	
<b>Week 13</b>	<b>Post Hoc Comparisons: How Do We Best Make Multiple Comparisons Among Samples?</b>		
11-21	Aron et al. (2011, pp. 333-338)	Understanding Pairwise Comparisons	
11-23		No Class (Happy Thanksgiving!)	
11-26		Calculating Post Hoc Comparisons	Assignment 10 Due
11-27		Lab on Post Hoc Comparisons	
<b>Week 14</b>	<b>Repeated Measures ANOVA: How Do We Test Differences in Within Subjects Designs?</b>		
11-28	Aron et al. (2009, Ch. W02)	Understanding Within Subjects Designs	
11-30		Calculating a Repeated Measures ANOVA	
12-3		Calculating Repeated Measures Statistics	Assignment 11 Due
12-4		Lab on Repeated Measures ANOVA	
<b>Week 15</b>	<b>Factorial ANOVA: How Do We Test Differences in a Multiple Factor Design?</b>		
12-5	Aron et al. (2011, pp. 338-364)	Understanding Factorial Designs	
12-7		Calculating a Factorial ANOVA	
12-10		Calculating Factorial Statistics	Assignment 12 Due
12-11		Lab on the Factorial ANOVA	
<b>Week 16</b>	<b>Integration: How Can We Integrate What We Know About Multi-Group Analyses?</b>		
12-12	Aron et al. (2011, Ch. 12)	Conceptual Integration	
12-14		Integration Problems	
12-20		<b>Exam 3 (8:00-10:00)</b>	Assignment 13 Due

## RELEVANT LEARNING OUTCOMES

### Statistics for Psychologists

### Overview of Learning Outcomes

Learning outcomes are descriptions of what students should be able to know and do following a particular course or program. Learning outcomes are useful in that they identify a set of goals for instructors to use in their teaching. These learning outcomes provide an essential set of building blocks for the assessment of students' performance. Most universities and professional organizations recommend that instructors identify a set of objectives for each course and assess the extent to which students meet these objectives.

### Relevant Local and National Learning Outcomes

The University of Wisconsin – Stevens Point (2016) specifies three learning outcomes that are particularly relevant to all Quantitative Literacy courses (which includes this course). Students completing this course should be able to:

- Select, analyze, and interpret appropriate numerical data used in everyday life in numerical and graphical format. (UWSP GEP QL Outcome 1)
- Identify and apply appropriate strategies of quantitative problem solving in theoretical and practical applications. (UWSP GEP QL Outcome 2)
- Construct a conclusion using quantitative justification. (UWSP GEP QL Outcome 3)

Similarly, the American Psychological Association (APA, 2013) offers a list of student learning outcomes for all psychology curricula. With regards to statistics courses, the following outcomes are particularly relevant. Students completing this course should be able to:

- Interpret complex statistical findings and graphs in the context of their level of statistical significance, including the influence of effect size, and explain these findings using a common language. (APA Outcome 2.2E)
- Communicate quantitative data in statistics, graphs, and tables. (APA Outcome 4.1F)

Finally, a Statistical Literacy Task Force (2014) proposed 26 more specific and detailed learning outcomes for statistics and methodology courses within Psychology. However, these outcomes are not policy approved by APA or by UWSP and are, therefore, not elaborated on here. They were, however, taken into consideration during the creation of my course.

### Specific Learning Outcomes for My Statistics Course

I have outlined three more specific learning outcomes that are designed to encompass and combine the UWSP and APA learning outcomes described above. I believe that by fulfilling these learning outcomes, students will meet the spirit of both the UWSP and APA outcomes. Specifically, students completing this course will:

- Explain the logic and appropriate applications of statistical analyses for univariate or bivariate research designs, problems, or hypotheses. (Aligns with UWSP GEP QL Outcome 1)
- Calculate the statistics necessary to solve problems (both manually and via computer), including descriptive statistics, statistical significance tests, effect sizes, and confidence intervals. (Aligns with UWSP GEP QL Outcome 2)
- Communicate the meaning of statistical analyses in everyday language and professional formats (e.g., graphs, tables, and words). (Aligns with UWSP GEP QL Outcome 3)

## How the Learning Outcomes are Addressed and Assessed in My Course

The relevant learning outcomes are outlined on the first day of the course, are explicitly emphasized throughout the course, and form the cornerstone of the grading rubric used in the course (see Wendorf, 2007).

In Table 1 below (in a format adapted from Fink, 2003), I have outlined how my statistics course is designed around these learning outcomes. The table briefly describes the learning experiences and assessment techniques that are directly relevant to each outcome.

Overall, I encourage all of my students to be familiar with this information because it explains why and how the various assignments and exams in the course are important.

## References

- American Psychological Association. (2013). *APA guidelines for the undergraduate psychology major (Version 2.0)*. Washington, DC: Author. Retrieved from [www http://www.apa.org/ed/precollege/about/psymajor-guidelines.aspx](http://www.apa.org/ed/precollege/about/psymajor-guidelines.aspx)
- Fink, D.L. (2003). *Creating significant learning experiences: An integrated approach to designing college courses*. San Francisco: Jossey-Bass.
- Statistical Literacy Task Force. (2014). *Statistical literacy in the undergraduate psychology curriculum*. Retrieved from [http://teachpsych.org/Resources/Documents/otrp/resources/statistics/STP\\_Statistical%20Literacy\\_Psychology%20Major%20Learning%20Goals\\_4-2014.pdf](http://teachpsych.org/Resources/Documents/otrp/resources/statistics/STP_Statistical%20Literacy_Psychology%20Major%20Learning%20Goals_4-2014.pdf)
- University of Wisconsin – Stevens Point. (2016). GEP learning outcomes. Retrieved from <https://www.uwsp.edu/gep/documents/GEPCategoryLearningOutcomesRevisedSpring2016.pdf>
- Wendorf, C. A. (2007). *Grading rubric and explanation for all of my courses*. Retrieved from <http://www4.uwsp.edu/psych/cw/portfolio/Wendorf-GradingRubricExplanation.pdf>

**Table 1: Explicit and Assessed Learning Outcomes for Statistics for Psychologists**

<b>Learning Outcomes</b> What specific learning outcome is explicitly addressed in this learning experience?	<b>Course/Unit/Experience Design</b> What do students specifically do to address the learning outcome during this learning experience?	<b>Assessment Context</b> What is the assessment method and its context/setting for this learning experience?	<b>Formal Feedback</b> What formal feedback do students receive about their representation of learning in this experience?
Explain the logic and appropriate applications of statistical analyses for univariate or bivariate research designs, problems, or hypotheses.	As preparation for each type of statistical analysis, students work on in-class worksheets and homework assignments that address the logic behind the analysis and its application to specific research designs.	Both homework assignments and in-class exams test students' knowledge of statistical and related research methodology terms and concepts.	Homework and exams are quickly graded (and relevant comments are made) and returned the next day. For each exam, students are required to re-do the entire exam, incorporating explanations that respond to the feedback.
Calculate the statistics necessary to solve problems (both manually and via computer), including descriptive statistics, statistical significance tests, effect sizes, and confidence intervals.	Students work on in-class worksheets and homework assignments that require them to calculate and interpret basic descriptive and inferential statistics by hand and using SPSS.	Both homework assignments and in-class exams test students' ability to calculate and interpret basic descriptive and inferential statistics.	Homework and exams are quickly graded (and relevant comments are made) and returned the next day. For each exam, students are required to re-do the entire exam, incorporating explanations that respond to the feedback.
Communicate the meaning of statistical analyses in everyday language and professional formats (e.g., graphs, tables, and words).	On in-class worksheets and homework assignments, students describe all results in APA style, which also involves using clear interpretations of the findings.	In addition to the graded homework assignments, in-class exams also test students' ability to describe results in APA style and to describe conceptual interpretations.	Homework and exams are quickly graded (and relevant comments are made) and returned the next day. For each exam, students are required to re-do the entire exam, incorporating explanations that respond to the feedback.

# PSYC 300 QL ASSESSMENT

## Description of Assessment/Assignment

The learning outcomes were assessed using a Final Exam in the course. The relevant questions from the example are included on the following pages.

**Learning Outcome 1: Explain the logic and appropriate applications of statistical analyses for univariate and bivariate research designs, problems, or hypotheses. (Aligns with UWSP GEP QL Outcome 1)**

Because this outcome was not a “featured” outcome and was only addressed at the “reinforced” level, it was assessed using multiple choice questions on the exam. These questions were similar to activities throughout the course, where students were presented with a research scenario/description and had to identify features of the study. In this case (Question 1-3 on the exam below), students had to identify the appropriate statistical test associated with the study.

**Learning Outcome 2: Calculate the statistics necessary to solve problems (both manually and via computer), including descriptive statistics, statistical significance tests, effect sizes, and confidence intervals. (Aligns with UWSP GEP QL Outcome 2)**

This is the featured learning outcome in the course. Though students would use a computer to do some analyses in the course, the exam focuses on more limited manual calculations. In the problem-based questions below (Part A for each question), students had to calculate the requested values.

**Learning Outcome 3: Communicate the meaning of statistical analyses in everyday language and professional formats (e.g., graphs, tables, and words). (Aligns with UWSP GEP QL Outcome 3)**

This is also not a featured outcome in this assessment. Following the problem-based questions (Part B for each question below), students needed to summarize the analyses in appropriate APA style. In these cases, the summaries would be single sentences with statistical information (and not in tables or graphs).

**EXAM 3: MULTIPLE SAMPLE DESIGNS**  
**PSYC 300: Statistics for Psychologists**

Exam Grade:  
\_\_\_\_ / 40

Course Grade:  
\_\_\_\_\_

**Multiple Choice Questions (12 questions; 1 pt. each)** - Circle the single BEST answer to each question.

1. To examine people's reactions to violence in TV shows, I set up three viewing rooms, each equipped with a television monitor. Participants in first room were shown 120 minutes worth of romantic comedies, which contain no violence. After viewing the movie, participants rated the intensity of their emotional discomfort with the film clips. The second group watched 120 minutes of violent scenes from action films and rated their emotional discomfort. The third group watched 120 minutes of violent scenes from cartoons and rated their emotional discomfort.

For this scenario, a(n) \_\_\_\_\_ would be the most appropriate statistical significance test and \_\_\_\_\_ would be the most appropriate effect size measure.

- a. Independent Samples t test; Cohen's d
  - b. One-way Analysis of Variance; eta-squared**
  - c. Repeated measures Analysis of Variance; partial eta-squared
  - d. Factorial Analysis of Variance; partial eta-squared
2. Researchers were interested in whether moral judgment scores (which can range from 0 to 100) could be faked. Participants were first given the test of moral judgment without special instructions. Next, the same participants were told to pretend that they were political radicals, and that they should answer the moral judgment questions as such. Finally, the participants were told to pretend that they were political conservatives and answer the questions a third time.

For this scenario, a(n) \_\_\_\_\_ would be the most appropriate statistical significance test and \_\_\_\_\_ would be the most appropriate effect size measure.

- a. Independent Samples t test; Cohen's d
  - b. One-way Analysis of Variance; eta-squared
  - c. Repeated measures Analysis of Variance; partial eta-squared**
  - d. Factorial Analysis of Variance; partial eta-squared
3. In a study in Industrial/Organizational Psychology, personnel managers are asked to review a job application and then rate the likelihood that they would hire the applicant using a 0 to 100 scale (with higher numbers indicating higher likelihood). The case descriptions for the applicant are identical for all managers except that for half of the managers the applicant is male and for the other half the applicant is female. In addition, half of applications for each gender of applicant are accompanied with photographs of an attractive candidate and half with photos of unattractive candidates.

For this scenario, a(n) \_\_\_\_\_ would be the most appropriate statistical significance test and \_\_\_\_\_ would be the most appropriate effect size measure.

- a. Independent Samples t test; Cohen's d
- b. One-way Analysis of Variance; eta-squared
- c. Repeated measures Analysis of Variance; partial eta-squared
- d. Factorial Analysis of Variance; partial eta-squared**

**[QUESTIONS HAVE BEEN REMOVED FROM THIS EXAM  
FOR THE SAKE OF BREVITY IN THIS ASSESSMENT REPORT.]**

**Problem-Based Questions (4 questions; 4 pts. each)** - For each question, calculate the appropriate values. Report the results in correct APA style (when asked).

1. **Both Questions 1 and 2 refer to the following scenario:** Suppose a researcher was interested in students' perceptions of course difficulty. Twenty-seven students evaluated the difficulty of Introductory Psychology ( $n = 9, M = 6.000, SD = 2.000$ ), Statistics ( $n = 9, M = 5.000, SD = 1.500$ ), and Social Psychology ( $n = 9, M = 4.000, SD = 1.000$ ). These ratings of difficulty could range from 0 to 10 with higher means indicating higher levels of perceived difficulty.

a. Conduct the analyses (using an  $\alpha = .05$ ) by filling in the **appropriate** cells in the table below. If a cell should not have a value in it, please leave it blank. (3 pts.)

	Sum of Squares	df	Mean Square	F	Sig.	Eta-Squared
Between Groups	18.000	2	9.000	3.724	<.05	.237
Within Groups	58.000	24	2.417			
Total	76.000	26				

For the sig. value, simply indicate if the result has " $p < .05$ " or if it has " $p > .05$ ".

b. What conclusion would you draw from this analysis? Using appropriate APA style, describe the meaning of the analyses in terms of the variable under investigation. (Confidence intervals are not necessary.) (1 pt.)

2. **This question uses the scenario described in Question 1:** Conduct each possible *post hoc* pair-wise comparison in order to determine which, if any, of the courses were rated significantly different.

a. Conduct the analyses (using an  $\alpha = .05$ ) by filling in the **appropriate** cells in the table below. If a cell should not have a value in it, please leave it blank. (3 pts.)

Psychology Class	Psychology Class	Mean Difference	Std. Error	Sig.
Introductory Psychology	Statistics	1.000	.733	>.05
	Social Psychology	2.000	.733	<.05
Statistics	Introductory Psychology	-1.000	.733	>.05
	Social Psychology	1.000	.733	>.05

For the sig. value, simply indicate if the result has " $p < .05$ " or if it has " $p > .05$ ".

b. What conclusion would you draw from these analyses? Describe the meaning of the analyses in terms of the variables and groups under investigation. (APA style is NOT required for this question.) (1 pt.)

**[QUESTIONS HAVE BEEN REMOVED FROM THIS EXAM FOR THE SAKE OF BREVITY IN THIS ASSESSMENT REPORT.]**



**Table 1: Explicit and Assessed Learning Outcomes for Statistics for Psychologists**

<b>Learning Outcomes</b> What specific learning outcome is explicitly addressed in this learning experience?	<b>Course/Unit/Experience Design</b> What do students specifically do to address the learning outcome during this learning experience?	<b>Assessment Context</b> What is the assessment method and its context/setting for this learning experience?	<b>Formal Feedback</b> What formal feedback do students receive about their representation of learning in this experience?
Explain the logic and appropriate applications of statistical analyses for univariate or bivariate research designs, problems, or hypotheses.	As preparation for each type of statistical analysis, students work on in-class worksheets and homework assignments that address the logic behind the analysis and its application to specific research designs.	Both homework assignments and in-class exams test students' knowledge of statistical and related research methodology terms and concepts.	Homework and exams are quickly graded (and relevant comments are made) and returned the next day. For each exam, students are required to re-do the entire exam, incorporating explanations that respond to the feedback.
Calculate the statistics necessary to solve problems (both manually and via computer), including descriptive statistics, statistical significance tests, effect sizes, and confidence intervals.	Students work on in-class worksheets and homework assignments that require them to calculate and interpret basic descriptive and inferential statistics by hand and using SPSS.	Both homework assignments and in-class exams test students' ability to calculate and interpret basic descriptive and inferential statistics.	Homework and exams are quickly graded (and relevant comments are made) and returned the next day. For each exam, students are required to re-do the entire exam, incorporating explanations that respond to the feedback.
Communicate the meaning of statistical analyses in everyday language and professional formats (e.g., graphs, tables, and words).	On in-class worksheets and homework assignments, students describe all results in APA style, which also involves using clear interpretations of the findings.	In addition to the graded homework assignments, in-class exams also test students' ability to describe results in APA style and to describe conceptual interpretations.	Homework and exams are quickly graded (and relevant comments are made) and returned the next day. For each exam, students are required to re-do the entire exam, incorporating explanations that respond to the feedback.

**Problem-Based Questions (4 questions; 4 pts. each)** – Each question had two parts: calculating the relevant values, and writing the results in APA style.

**1. One-Way Analysis of Variance with Effect Size.**

Category	Unacceptable	Problematic	Satisfactory	Good
Procedures & Formulae (0-3 Points)	<input type="checkbox"/> Inappropriate <input type="checkbox"/> Incorrect <input type="checkbox"/> Incomplete	<input type="checkbox"/> Relevancy Vague <input type="checkbox"/> Major Inaccuracies <input type="checkbox"/> Lacking Details	<input type="checkbox"/> Relevancy Implied <input type="checkbox"/> Minor Inaccuracies <input type="checkbox"/> Details Too Broad	<input type="checkbox"/> Relevancy Described No Inaccuracies Thorough Details
Interpretation & Integration (0-1 Points)	<input type="checkbox"/> Improper Format for Question <input type="checkbox"/> Several Grammatical/Spelling Errors <input type="checkbox"/> Unclear or Haphazard Organization		<input type="checkbox"/> Proper Format for Question Few Grammatical/Spelling Errors Focused and Integrated Organization	

General Comments:

**2. Tukey HSD Post Hoc Tests.**

Category	Unacceptable	Problematic	Satisfactory	Good
Procedures & Formulae (0-3 Points)	<input type="checkbox"/> Inappropriate <input type="checkbox"/> Incorrect <input type="checkbox"/> Incomplete	<input type="checkbox"/> Relevancy Vague <input type="checkbox"/> Major Inaccuracies <input type="checkbox"/> Lacking Details	<input type="checkbox"/> Relevancy Implied <input type="checkbox"/> Minor Inaccuracies <input type="checkbox"/> Details Too Broad	<input type="checkbox"/> Relevancy Described No Inaccuracies Thorough Details
Interpretation & Integration (0-1 Points)	<input type="checkbox"/> Improper Format for Question <input type="checkbox"/> Several Grammatical/Spelling Errors <input type="checkbox"/> Unclear or Haphazard Organization		<input type="checkbox"/> Proper Format for Question Few Grammatical/Spelling Errors Focused and Integrated Organization	

General Comments:

# PSYC 300 QL ASSESSMENT

## Assessment Results

Given the nature of the assessment, the results are presented separately for each learning outcome.

**Learning Outcome 1: Explain the logic and appropriate applications of statistical analyses for univariate and bivariate research designs, problems, or hypotheses. (Aligns with UWSP GEP QL Outcome 1)**

Reminder: This is NOT the featured outcome.

Because this outcome was assessed using three multiple choice questions, each question was scored as either correct or incorrect (0 or 1) and a total score was created by summing the values. As a result, each individual student could have received anywhere from a 0 (Unacceptable) to 3 (Exceptional).

Total Score	Unacceptable (0)	Problematic (1)	Satisfactory (2)	Exceptional (3)
LO 1	1 Student (4%)	5 Students (20%)	4 Students (16%)	15 Students (60%)

On this outcome, 19 students (76%) met or exceeded expectations, whereas 6 students (24%) did not meet the expectations. This indicates that, while most students were able to identify the appropriate statistical analysis for this portion of the course, a small number of students struggled with the task. Examination of the individual questions showed that, of the three questions, the second question was answered correctly most often.

**Learning Outcome 2: Calculate the statistics necessary to solve problems (both manually and via computer), including descriptive statistics, statistical significance tests, effect sizes, and confidence intervals. (Aligns with UWSP GEP QL Outcome 2)**

Reminder: This is THE FEATURED OUTCOME.

Because this outcome was assessed using two 3-point problem-based questions, a total score was created by summing the points from the two questions. Consistent with the rubric, a student was marked as Unacceptable (0-1 points), Problematic (2-3 points), Satisfactory (4-5 points), or Exceptional (6 points).

Total Score	Unacceptable (0-1)	Problematic (2-3)	Satisfactory (4-5)	Exceptional (6)
LO 2	1 Student (4%)	2 Students (8%)	13 Students (52%)	9 Students (36%)

On this outcome, 22 students (88%) met or exceeded expectations, whereas only 3 students (12%) did not meet expectations. This indicates that student were quite successful in calculating the appropriate statistical procedure for the question. Examination of the individual questions showed very similar level of performance across the two questions.

**Learning Outcome 3: Communicate the meaning of statistical analyses in everyday language and professional formats (e.g., graphs, tables, and words). (Aligns with UWSP GEP QL Outcome 3)**

Reminder: This is NOT the featured outcome.

Because this outcome was assessed using a simple acceptable-unacceptable judgment for each question but was measured across two questions, the sum of the points across the two questions indicated the performance for each student. Therefore, scores ranged from Unacceptable (0) to Satisfactory (2), with an

Exceptional category not possible. [This is justified given that students were largely following templates in writing these sentences.]

Total Score	Unacceptable (0)	Problematic (1)	Satisfactory (2)	Exceptional (6)
LO 3	3 Students (12%)	3 Students (12%)	19 Students (76%)	N/A

On this outcome, 19 students (76%) met expectations, whereas 6 students (24%) did not meet expectations. This indicates that the majority of students were able to effectively summarize the results of the statistical analyses in appropriate APA style, though several students missed aspects of the summary. To be fair, some of these students received poor scores on these questions because they did not calculate the necessary values in the previous parts of the questions and therefore had nothing to report; examination of the individual questions showed that this was particularly prevalent for the first problem-based question.

# PSYC 300 QL ASSESSMENT

## Future Plans for Improvement

Though some global changes to the course are planned, I will address specific plans for improvement on the basis of this assessment separately for each learning outcome.

### **Learning Outcome 1: Explain the logic and appropriate applications of statistical analyses for univariate and bivariate research designs, problems, or hypotheses. (Aligns with UWSP GEP QL Outcome 1)**

Though not the featured outcome, the assessment showed that students generally did well on this outcome. This is consistent with past assessment.

Nonetheless, several changes are in order. First, whenever a data set is presented in class, students will be asked to identify the design features of the study and to explain the analyses strategy prior to analyzing the data; though this has been done a several points in the class before, it has not been a consistent imperative for each and every example. Second, during the review times and practice problems for each exam, I plan to bring in more examples that parallel the types of questions used on the exams; again, this is currently in use, but the new plan calls for more opportunities and examples.

### **Learning Outcome 2: Calculate the statistics necessary to solve problems (both manually and via computer), including descriptive statistics, statistical significance tests, effect sizes, and confidence intervals. (Aligns with UWSP GEP QL Outcome 2)**

As a featured outcome in this course (and therefore for this assessment), results were strongly positive. This too is consistent with all past assessments.

However, a handful of students struggle with this every semester, and the struggling generally increases as the semester (and exam) goes on. Therefore, I plan to simplify the first examples used in class to ensure development of the basic skills and then to scaffold increasingly more difficult examples to fortify and extend student skills. I also plan to develop a series of “remedial” problems designed for those students who have demonstrated difficulty with calculations earlier in the class.

### **Learning Outcome 3: Communicate the meaning of statistical analyses in everyday language and professional formats (e.g., graphs, tables, and words). (Aligns with UWSP GEP QL Outcome 3)**

This too is not the featured or main emphasis of the course, but it is an important element (and one that I believe distinguishes my sections of the course from other instructors’ sections). Given that students worked on this aspect on every homework and that they were given numerous examples and templates to follow, the struggles are perhaps more surprising than on the other aspects of the course. Therefore, I plan to update the examples/templates and to clarify the importance of these for future students.

That said, the assessment of this outcome was not entirely independent from the previous outcome, as students needed to have some calculations (even if they were wrong) in order to write about the results. An examination of the results from the students who did not meet expectations on this outcome showed that nearly every single case resulted from this problem. Therefore, remedying the issues with Learning Outcome 2 should spill over to resolving this one to some extent.

**Problem-Based Questions (4 questions; 4 pts. each)** - For each question, calculate the appropriate values. Report the results in correct APA style (when asked).

1. **Both Questions 1 and 2 refer to the following scenario:** Suppose a researcher was interested in students' perceptions of course difficulty. Twenty-seven students evaluated the difficulty of Introductory Psychology ( $n = 9, M = 6.000, SD = 2.000$ ), Statistics ( $n = 9, M = 5.000, SD = 1.500$ ), and Social Psychology ( $n = 9, M = 4.000, SD = 1.000$ ). These ratings of difficulty could range from 0 to 10 with higher means indicating higher levels of perceived difficulty. *Mtotal = 5*

a. Conduct the analyses (using an  $\alpha = .05$ ) by filling in the **appropriate** cells in the table below. If a cell should not have a value in it, please leave it blank. (3 pts.)

$SS_B = 9(6-5)^2 + 9(5-5)^2 + 9(4-5)^2$   
 $= 9 + 0 + 9 = 18$   
 $df_B = 3-1 = 2$   
 $MS_B = \frac{18}{2} = 9$

$SS_W = (2^2)8 + (1.5^2)8 + (1^2)8 = 32 + 18 + 8 = 58$   
 $df_W = 8+8+8 = 24$   
 $MS_W = \frac{58}{24} = 2.417$

	Sum of Squares	df	Mean Square	F	Sig.	Eta-Squared
Between Groups	18	2	9	3.724	$p < .05$	0.237
Within Groups	58	24	2.417			
Total	76.000	26				

$F = \frac{9}{2.417} = 3.724$   
 $\eta^2 = \frac{18}{76} = 0.237$

For the sig. value, simply indicate if the result has " $p < .05$ " or if it has " $p > .05$ ".

b. What conclusion would you draw from this analysis? Using appropriate APA style, describe the meaning of the analyses in terms of the variable under investigation. (Confidence intervals are not necessary.) (1 pt.)

A one-way ANOVA was used to compare students' mean perceptions of course difficulty across three groups. Students in the Introductory Psychology ( $n=9, M=6.00, SD=2.00$ ) rated the course the most difficult compared to students in the Statistics course ( $n=9, M=5.00, SD=1.50$ ) and students in the Social Psychology course ( $n=9, M=4.00, SD=1.00$ ),  $F(2, 24) = 3.724, p < 0.05, \eta^2 = 0.237$ .

2. **This question uses the scenario described in Question 1:** Conduct each possible *post hoc* pair-wise comparison in order to determine which, if any, of the courses were rated significantly different.

a. Conduct the analyses (using an  $\alpha = .05$ ) by filling in the **appropriate** cells in the table below. If a cell should not have a value in it, please leave it blank. (3 pts.)

Psychology Class	Psychology Class	Mean Difference	Std. Error	HSD	Sig.
Introductory Psychology	Statistics	6-5 = 1	0.733	1.364	$p > .05$
	Social Psychology	6-4 = 2	0.733	2.729	$p < .05$
Statistics	Introductory Psychology	5-6 = -1	0.733	-1.364	$p > .05$
	Social Psychology	5-4 = 1	0.733	1.364	$p > .05$

$SE_{diff} = \sqrt{\frac{2.417}{9} + \frac{2.417}{9}}$   
 $= \sqrt{0.269 + 0.269}$   
 $= \sqrt{0.538}$   
 $= 0.733$

For the sig. value, simply indicate if the result has " $p < .05$ " or if it has " $p > .05$ ".

b. What conclusion would you draw from these analyses? Describe the meaning of the analyses in terms of the variables and groups under investigation. (APA style is NOT required for this question.) (1 pt.)

The students in the Introductory Psychology and Social Psychology rated the difficulty of the courses significantly different. The students did not rate the course Introductory Psychology and Statistics or Statistics and Social Psychology significantly different in perceived difficulty.

**Problem-Based Questions (4 questions; 4 pts. each)** – Each question had two parts: calculating the relevant values, and writing the results in APA style.

**1. One-Way Analysis of Variance with Effect Size.**

Category	Unacceptable	Problematic	Satisfactory	Good
Procedures & Formulae (0-3 Points)	<input type="checkbox"/> Inappropriate <input type="checkbox"/> Incorrect <input type="checkbox"/> Incomplete	<input type="checkbox"/> Relevancy Vague <input type="checkbox"/> Major Inaccuracies <input type="checkbox"/> Lacking Details	<input type="checkbox"/> Relevancy Implied <input type="checkbox"/> Minor Inaccuracies <input type="checkbox"/> Details Too Broad	<input checked="" type="checkbox"/> Relevancy Described No Inaccuracies Thorough Details
Interpretation & Integration (0-1 Points)	<input type="checkbox"/> Improper Format for Question <input type="checkbox"/> Several Grammatical/Spelling Errors <input type="checkbox"/> Unclear or Haphazard Organization		<input checked="" type="checkbox"/> Proper Format for Question Few Grammatical/Spelling Errors Focused and Integrated Organization	

General Comments:

ALL CALCULATED VALUES ARE CORRECT! ALL RELEVANT WORK IS SHOWN.

THE APA STYLE SUMMARY INCLUDES ALL NECESSARY INFORMATION, THOUGH IMPLIED, YOU COULD STATE WHETHER IT'S SIGNIFICANT AND IF EFFECT SIZE IS LARGE.

**2. Tukey HSD Post Hoc Tests.**

Category	Unacceptable	Problematic	Satisfactory	Good
Procedures & Formulae (0-3 Points)	<input type="checkbox"/> Inappropriate <input type="checkbox"/> Incorrect <input type="checkbox"/> Incomplete	<input type="checkbox"/> Relevancy Vague <input type="checkbox"/> Major Inaccuracies <input type="checkbox"/> Lacking Details	<input type="checkbox"/> Relevancy Implied <input type="checkbox"/> Minor Inaccuracies <input type="checkbox"/> Details Too Broad	<input checked="" type="checkbox"/> Relevancy Described No Inaccuracies Thorough Details
Interpretation & Integration (0-1 Points)	<input type="checkbox"/> Improper Format for Question <input type="checkbox"/> Several Grammatical/Spelling Errors <input type="checkbox"/> Unclear or Haphazard Organization		<input checked="" type="checkbox"/> Proper Format for Question Few Grammatical/Spelling Errors Focused and Integrated Organization	

General Comments:

ALL CALCULATED VALUES ARE SHOWN AND ARE CORRECT.

THE SUMMARY IS APPROPRIATE IN STYLE AND SUBSTANCE. THE VALUES ARE ALL CORRECTLY INTERPRETED.

**Problem-Based Questions (4 questions; 4 pts. each)** - For each question, calculate the appropriate values. Report the results in correct APA style (when asked).

Psych=1 Stats=2 Social=3

1. **Both Questions 1 and 2 refer to the following scenario:** Suppose a researcher was interested in students' perceptions of course difficulty. Twenty-seven students evaluated the difficulty of Introductory Psychology ( $n = 9, M = 6.000, SD = 2.000$ ), Statistics ( $n = 9, M = 5.000, SD = 1.500$ ), and Social Psychology ( $n = 9, M = 4.000, SD = 1.000$ ). These ratings of difficulty could range from 0 to 10 with higher means indicating higher levels of perceived difficulty.

a. Conduct the analyses (using an  $\alpha = .05$ ) by filling in the **appropriate** cells in the table below. If a cell should not have a value in it, please leave it blank. (3 pts.)

	Sum of Squares	df	Mean Square	F	Sig.	Eta-Squared
Between Groups	73.1486	8	9.14357	3.2066		
Within Groups	2.8514	8	.35642	0.12499		
Total	76.000	16	4.75	3.3316		

For the sig. value, simply indicate if the result has " $p < .05$ " or if it has " $p > .05$ ".

b. What conclusion would you draw from this analysis? Using appropriate APA style, describe the meaning of the analyses in terms of the variable under investigation. (Confidence intervals are not necessary.) (1 pt.)

A one way Anova showed diff between ratings of difficulty between Psych ( $n=9, M=6, SD=2$ ), Social ( $n=9, M=5, SD=1.5$ ) and Stats ( $n=9, M=5, SD=1.5$ )  
 $F = (8, 8) = 25.65, p = \dots, \eta^2 = \dots$

2. **This question uses the scenario described in Question 1:** Conduct each possible *post hoc* pair-wise comparison in order to determine which, if any, of the courses were rated significantly different.

a. Conduct the analyses (using an  $\alpha = .05$ ) by filling in the **appropriate** cells in the table below. If a cell should not have a value in it, please leave it blank. (3 pts.)

Psychology Class	Psychology Class	Mean Difference	Std. Error	Sig.
Introductory Psychology	Statistics	1.0		
	Social Psychology	2.0		
Statistics	Introductory Psychology	-1.0		
	Social Psychology	1.0		

For the sig. value, simply indicate if the result has " $p < .05$ " or if it has " $p > .05$ ".

b. What conclusion would you draw from these analyses? Describe the meaning of the analyses in terms of the variables and groups under investigation. (APA style is NOT required for this question.) (1 pt.)



**Problem-Based Questions (4 questions; 4 pts. each)** – Each question had two parts: calculating the relevant values, and writing the results in APA style.

**1. One-Way Analysis of Variance with Effect Size.**

Category	Unacceptable	Problematic	Satisfactory	Good
Procedures & Formulae (0-3 Points)	<input type="checkbox"/> Inappropriate <input type="checkbox"/> Incorrect <input type="checkbox"/> Incomplete	<input type="checkbox"/> Relevancy Vague <input checked="" type="checkbox"/> Major Inaccuracies <input type="checkbox"/> Lacking Details	<input type="checkbox"/> Relevancy Implied <input type="checkbox"/> Minor Inaccuracies <input type="checkbox"/> Details Too Broad	<input type="checkbox"/> Relevancy Described No Inaccuracies Thorough Details
Interpretation & Integration (0-1 Points)	<input checked="" type="checkbox"/> Improper Format for Question <input type="checkbox"/> Several Grammatical/Spelling Errors <input type="checkbox"/> Unclear or Haphazard Organization		<input type="checkbox"/> Proper Format for Question Few Grammatical/Spelling Errors Focused and Integrated Organization	

General Comments:

THOUGH SOME VALUES ARE CALCULATED, THEY ARE INCORRECT. NO WORK IS PRESENTED THAT MAKES IT POSSIBLE TO FIND SOURCE OF ERRORS. ASPECTS OF THE SUMMARY FOLLOW APA STYLE, BUT PRESENTED VALUES ARE INCORRECT AND INCONSISTENT WITH THE CALCULATED VALUES.

**2. Tukey HSD Post Hoc Tests.**

Category	Unacceptable	Problematic	Satisfactory	Good
Procedures & Formulae (0-3 Points)	<input type="checkbox"/> Inappropriate <input type="checkbox"/> Incorrect <input type="checkbox"/> Incomplete	<input type="checkbox"/> Relevancy Vague <input checked="" type="checkbox"/> Major Inaccuracies <input checked="" type="checkbox"/> Lacking Details	<input type="checkbox"/> Relevancy Implied <input type="checkbox"/> Minor Inaccuracies <input type="checkbox"/> Details Too Broad	<input type="checkbox"/> Relevancy Described No Inaccuracies Thorough Details
Interpretation & Integration (0-1 Points)	<input checked="" type="checkbox"/> Improper Format for Question <input type="checkbox"/> Several Grammatical/Spelling Errors <input type="checkbox"/> Unclear or Haphazard Organization		<input type="checkbox"/> Proper Format for Question Few Grammatical/Spelling Errors Focused and Integrated Organization	

General Comments:

THE MEAN DIFFERENCES ARE CALCULATED, BUT NO OTHER VALUES ARE PRESENTED. NO WORK IS OFFERED TO SUGGEST THESE PORTIONS WERE ATTEMPTED. NO SUMMARY OF THE FINDINGS IS OFFERED.

# 2018-2019 Foundation Level GEP Assessment QL (Fall)

Rubric: UWSP FLC Feedback Rubric for GEP Assessment

## QL-PSYC 300 02L3

Results Access

Last Edited: 5/3/2019

Number of  
Evaluations **2**

Your final score is the **Average Score** taken from all of the evaluations listed below.

Average  
Score **100%**

### Distribution of Achievements

	Not Meeting GEP Expectations	Partially Meeting GEP Expectations	Meeting GEP Expectations
Course Syllabus & Schedule	0	0	2
Explanation of Alignment	0	0	2
Description of Assignment used for the GEP Assessment	0	0	2
Course Learning Activities Targeting the GEP Category	0	0	2
Assessment Instrument (Criteria/Rubric)	0	0	2
Assessment Results & Interpretation	0	0	2
Future Plans/Plans for Improvement	0	0	2
<b>Achievement Totals</b>	<b>0</b>	<b>0</b>	<b>16</b>

## Distribution of Achievements

	Not Meeting GEP Expectations	Partially Meeting GEP Expectations	Meeting GEP Expectations
Samples of student work	0	0	2
<b>Achievement Totals</b>	<b>0</b>	<b>0</b>	<b>16</b>

## Individual Evaluations

### Evaluation 2

Last Edited: REVIEWER 2, 5/3/2019, 1:18PM

### Evaluation Score

20/20 pts

# 100%

#### Course Syllabus & Schedule

Course syllabus and a calendar/schedule of course activities and assignments show when and to what degree the GEP Category Learning Outcomes (LOs) are addressed in the course.

**Comment:** GEP LOs are clearly stated within the syllabus and in the statistics for psychologists document.

#### Meeting GEP Expectations

**3 points**

*out of 3*

#### Explanation of Alignment

Explanation of alignment is expected to detail the relationship between the specific course learning outcomes and the GEP Category LOs. "Alignment" here means the relationship between each of the GEP Category LOs and what students learn in the course.

**Comment:** No Comment

#### Meeting GEP Expectations

**3 points**

*out of 3*

#### Description of Assignment used for the GEP Assessment

The discipline-appropriate evaluation used to assess student attainment of the targeted GEP Category LOs. Typical assessments include papers, projects, performances, presentations, or exams.

**Comment:** No Comment

**Meeting GEP Expectations****3 points***out of 3***Course Learning Activities Targeting the GEP Category**

A detailed description of specific course activities, assignments, and/or experiences, preparing students to successfully complete the discipline-appropriate evaluation and meet expectations for achievement of the GEP LOs.

**Comment:** Assignments were shown in the assessment table to show the scaffolding over the semester.

**Meeting GEP Expectations****2 points***out of 2***Assessment Instrument (Criteria/Rubric)**

Specific criteria, with a clear connection to the targeted GEP Category LOs, are used to assess student work and provide them with feedback.

**Comment:** Scoring clearly described within the analysis

**Meeting GEP Expectations****2 points***out of 2***Assessment Results & Interpretation**

To report the results, include both raw numbers and the percentage of students scoring at each level of attainment on each criterion assessed, as well as the interpretation of these results.

**Comment:** No Comment

**Meeting GEP Expectations****3 points***out of 3***Future Plans/Plans for Improvement**

Reflection on success of your course(s) in helping students meet expectations for the targeted GEP Category LOs and discussion of plans to maintain and/or improve performance related to these outcomes.

**Comment:** Well thought out plans for future plans.

**Meeting GEP Expectations**

**3 points***out of 3***Samples of student work**

Samples of student work representing at least two levels of achievement (meeting and not meeting GEP expectations) with clear indication of evaluation process.

**Comment:** No Comment

**Meeting GEP Expectations****1 points***out of 1*

**General Comment:** GEP LOs clearly outlined in syllabus and in Table 1.

**Evaluation 1**  **E()**

Last Edited: REVIEWER 1, 4/19/2019, 1:54PM

**Evaluation Score**

20/20 pts

**100%****Course Syllabus & Schedule**

Course syllabus and a calendar/schedule of course activities and assignments show when and to what degree the GEP Category Learning Outcomes (LOs) are addressed in the course.

**Comment:** The inclusion of GEP QL LOs is clear

**Meeting GEP Expectations****3 points***out of 3***Explanation of Alignment**

Explanation of alignment is expected to detail the relationship between the specific course learning outcomes and the GEP Category LOs. "Alignment" here means the relationship between each of the GEP Category LOs and what students learn in the course.

**Comment:** The alignment is very clear in many ways in a very long syllabus :-)

**Meeting GEP Expectations**

**3 points**  
*out of 3*

### Description of Assignment used for the GEP Assessment

The discipline-appropriate evaluation used to assess student attainment of the targeted GEP Category LOs. Typical assessments include papers, projects, performances, presentations, or exams.

**Comment:** There was a clear description of which evaluations were used to assess the GEP LOs. Which LOs were featured was also clear.

### Meeting GEP Expectations

**3 points**  
*out of 3*

### Course Learning Activities Targeting the GEP Category

A detailed description of specific course activities, assignments, and/or experiences, preparing students to successfully complete the discipline-appropriate evaluation and meet expectations for achievement of the GEP LOs.

**Comment:** The scaffolding is clear. The instructor even uses the word "scaffolding" to help us assess the materials.

### Meeting GEP Expectations

**2 points**  
*out of 2*

### Assessment Instrument (Criteria/Rubric)

Specific criteria, with a clear connection to the targeted GEP Category LOs, are used to assess student work and provide them with feedback.

**Comment:** No Comment

### Meeting GEP Expectations

**2 points**  
*out of 2*

### Assessment Results & Interpretation

To report the results, include both raw numbers and the percentage of students scoring at each level of attainment on each criterion assessed, as well as the interpretation of these results.

**Comment:** A summary of the results is provided along with the tabulation done by Campus Labs.

### Meeting GEP Expectations

**3 points**

*out of 3***Future Plans/Plans for Improvement**

Reflection on success of your course(s) in helping students meet expectations for the targeted GEP Category LOs and discussion of plans to maintain and/or improve performance related to these outcomes.

**Comment:** The materials show the instructor reflecting on what went well as well as what could be improved.

**Meeting GEP Expectations****3 points***out of 3***Samples of student work**

Samples of student work representing at least two levels of achievement (meeting and not meeting GEP expectations) with clear indication of evaluation process.

**Comment:** Samples of student work are provided with annotation.

**Meeting GEP Expectations****1 points***out of 1*

**General Comment:** No Comment