Psychology 314L (52524)
Experimental Research Methods
Fall 2020

Lecture Location: Zoom (Links Located on Blackboard)
Days and Time: Tuesday & Thursday; 8:00 a.m. to 9:20 a.m.
Lab Location: Zoom (Links Located on Blackboard)
Lab Day and Times: Wednesday, 10:00 a.m. to 11:50 a.m.; Thursday, 2:00 p.m. to 3:50 p.m.
Online portion at http://blackboard.usc.edu

Instructor Information

Dr. Clayton L. Stephenson
Assistant Professor (Teaching) Psychology
clstephe@usc.edu
Office Location: Home ☺
Office Hours: By Appointment; Email to Schedule
I'm more than happy to meet with you one-on-one!

TA Information

Jackson Trager
jptrager@usc.edu

Syllabus

Course Description

Experimental research methods in psychology; nature and concepts of scientific method. Lab exercises, data analysis and preparation of APA style empirical report.

My Course Summary

Psychology is a science. Science requires specific methods that tests, supports, or disconfirms hypotheses that lend supporting evidence or no evidence to a theory. Therefore, the course you are about to take is one of the most important courses you will take in psychology. Without rigorous, systematic research methods, much of the theoretical and practical knowledge we have about perception, cognition, attitudes, learning, human development, stereotypes, and many other areas in psychology would not exist. Although this course is not content specific, the knowledge and content of the course can be applied to any content specific course in psychology and neuroscience. You will learn about the philosophy of science, the various types of methods psychologists use, how to conduct an experiment, and write a research paper adhering to the Publication Manual of the American Psychological Association.

Prerequisites

PSYC 100 (Introduction to Psychology)

Teaching Objectives

1) Provide students with the fundamental knowledge of experimental research methods and design used in psychology.
2) Facilitate students understanding for how using valid scientific methods can improve and create knowledge in the field of psychology.

3) Guide and mentor students in developing, completing, writing, and presenting a valid and ethical psychology experiment.

Student Learning Objectives

After successfully completing this course, students will be able to . . .

1) identify areas in psychology in which they have strong interests.
2) describe and discuss the concepts in various psychological research methods and design.
3) critically analyze scientific claims made in popular and academic media.
4) analyze and interpret quantitative data.
5) collaborate and complete psychological research projects with their peers.
6) verbally present their research findings in a coherent and concise manner.

Required Texts

American Psychological Association. (2020). *Publication manual of the American psychological association* (7th ed.). Washington, DC: American Psychological Association.

Goodwin, K.A. & Goodwin, C.J. (2017). *Research in psychology: Methods and design* (8th ed.). John Wiley & Sons, Inc.

Beins, B. C. & Beins, A. M. (2012). *Effective writing in psychology: Papers, posters, and presentations* (2nd ed.). John Wiley & Sons, Inc.

NOTE: Goodwin & Goodwin textbook is abbreviated as (GOOD) in the schedule. Biens & Beins textbook is abbreviated as (BEINS). The Publication Manual is abbreviated as (APA).

Supplemental Readings. (Various dates). *Posted on Blackboard.*

NOTE: Texts are available at the bookstore or online.

Assessment	Focused Learning Objective(s)	Due Date	Percent of Final Grade: Points
Research Proposal	1, 2, 3, 5, 6	October 2nd by 11:59 p.m.	20 (individual grade): 100
Final Research Paper	1, 2, 3, 4, 5, 6	November 17th by 11:59 p.m.	25 (individual grade): 100
Research Project Presentation	4, 5, 6	November 17th, 8:00 a.m. to 10:00 a.m.	20 (individual grade): 100
Lab Assignments	1, 2, 3, 4, 5, 6	Continuous	25 (individual or group): 10 points each
Participation	2, 3, 5, 6	Continuous	10 (individual or group): 10 points each

Research Proposal & Final Research Paper

You will write a research proposal throughout the first half of the semester and collect data in accordance to your proposal during the second half of the semester. The research proposal is an important process in providing a clear statement of the problem, an argument for the purpose of

your study using appropriate sources, how previous studies relate to your study, formal research questions and hypotheses, a full methods section, and a data analysis plan. The final research paper will be the result of your semester's lab work and a demonstration of your ability to apply your knowledge so that you have a real experimental study to report. You will work in groups of three or four to in completing the project, but you will write the proposal and final paper individually. ***Please Note: These two papers are 45% of your grade, so be diligent in writing your paper and getting help from your lab instructor or me immediately if you have any problems.***

Research Project Presentation

In place of a final exam, you will present your research project with your group. Presentations are presented in a conference format and must be professional. You may be as creative as you want to be in presenting your study and PowerPoint is *NOT* required. A rubric on how you are graded is posted on Blackboard. You are also required to listen to everyone's presentation and you will be docked one letter grade on your project presentation grade for leaving early. ***Please Note: The presentation is 20% of your grade, so you will be held to high expectation and standards.***

Weekly Lab Assignments

The lab assignments are designed for you to acquire the necessary skills, knowledge, and tools to complete your research proposal and final research paper. Labs are also designed for you to acquire, at the minimum, a working knowledge of the process involved in completing an experiment from start to finish. Some lab assignments require each person to turn in an assignment while others require one person to turn in an assignment for the group. *You will receive detailed instructions for completing each lab assignment; read them carefully because it is **your responsibility** to turn in the assignments as instructed!* You will also learn or relearn statistical software, how to read output, and how to use APA format in your papers. ***Lab assignments are due five days after the lab day at 11:59 p.m. More specifically, Wednesday's labs are due Mondays by 11:59 p.m. and Thursday's labs are due Tuesdays by 11:59 p.m.***

Participation in Lecture

Reading the assigned material and completing the assignments before class and lab are important to understanding the lecture topics and to participating in the discussions. Participation will be assessed through in-class exercises, activities, and discussion. Exercises may occasionally be assigned in class in order to help you to understand the course material. Some exercises will be worked on in class while others may be worked on in class and at home. Participation will be graded based on the completion and quality. **Your lowest THREE participation grades will be dropped.**

EXTRA CREDIT: Participate in Research Studies and Worksheets

Part of understanding the research process is being a participant in a study. You may participate in research studies conducted in the psychology department to earn 6 extra credit points. All points will be applied to your Final Research Paper. However, you ***cannot*** earn more than 100 points on your Final Research Paper, and any leftover extra credit points ***will not*** be applied to

any other assignments. You can view and sign up for studies through the SONA system at https://usc.sona-systems.com/. Please note that your participation in research is voluntary and you have the right to NOT participate in research studies. If you do not want to participate in studies, then you may complete the alternative, which is writing three two-page papers on three separate topics, which are also posted on Blackboard. **All credits and/or papers are due by 11:59 p.m. on November 13th. No exceptions!**

Grading Scheme

Please Note: I do NOT curve the grade. Whatever grade you have on Blackboard is your grade in real-time that you earned to that date. I do round up (e.g., 93.45 = 93.5%) for your final grade. Finally, it is NOT appropriate for you to ask to make up an assignment at the end of the semester that was due past what is outlined in the late policy (see pp. 10 – 11) or to ask for extra credit beyond what is described above, so please do NOT ask for either.

A = 100 - 93.5%; A- = 93.4 - 89.5%; B+ = 89.4 - 86.5%; B = 86.4 - 83.5%; B- = 83.4 - 79.5%; C+ = 79.4 - 76.5%; C = 76.4 - 73.5%; C- = 73.4 - 69.5%; D+ = 69.4 - 66.5%; D = 66.4 - 63.5%; D- = 63.4 - 59.5%; Below 59.5% = F

Statistics Background

All students in this class are required to have achieved a C- grade or better in their Statistics (PSYC 274) course. Students should have an introductory level of familiarity with descriptive and inferential statistics, their interpretation, and writing of statistical results. Experimental Research Methods builds heavily upon your background in statistics; students *without* an adequate background in statistics may find this course difficult. We will thoroughly review common statistical methods. You should be able to identify the appropriate statistics for each design type, depending on the scale of measurement used by the researchers. You will be expected to be able to input data into SPSS, run the appropriate statistics, read SPSS output, be able to infer the number of participants in the sample and levels of an independent variable from degrees of freedom. All of these skills will be taught or reviewed in lecture and labs.

Instructor Student Communication and Blackboard

Blackboard (Bb) will be used to post announcements, send e-mails, and post all grades and course materials, so it is the student's responsibility to frequently visit the course on Blackboard (website: http://blackboard.usc.edu). Bb transactions will follow the below guidelines.

1) Grades: All grades and points will be posted on Bb one to two weeks after the completion of the exam, assignment, or activity. Grades will not be announced in class, via e-mail, or during office hours.
2) Course Materials: The syllabus, lab assignments, and supplemental reading material can be viewed and printed from Bb.
3) Announcements: Class announcements will be posted on Bb, as well as broadcasted in class.
4) Email: Any email communications from the instructor or TA will be sent via Bb or through the USC's email service. USC requires that all e-mail communication between the instructor and students be sent via an official USC e-mail address. *Any student communication delivered from a non-USC e-mail address will be automatically discarded*.

Tentative Schedule of Topics and Assignments

	Topic	Reading	Deliverables
WEEK 1			
Tuesday 08/18/2020	➢ Overview of Course	➢ Syllabus	N/A
Thursday 08/20/2020	➢ Purpose of the Course ➢ Psychological Science as a Career	➢ None	➢ In-class exercise ➢ Discussion
WEEK 2			
Tuesday 08/25/2020	➢ Scientific Thinking	➢ Chapter 1 (GOOD)	➢ In-class project (cont.) ➢ Presentations
Thursday 08/27/2020	➢ Understanding Published Research	➢ Evans & Rooney (2016); on Bb	➢ In-class exercise
WEEK 3			
Tuesday 09/01/2020	➢ Developing Ideas ➢ The Importance of Writing ➢ Plagiarism	➢ Chapter 3 (GOOD) pp. 60 – 69 ➢ Kline (2009); on Bb	➢ In-class exercise
Thursday 09/03/2020	➢ Understanding Theories ➢ The Locke 12-Step	➢ Chapter 3 (GOOD) pp. 70 – 88 ➢ Stephenson & Halpern (2011); on Bb	➢ In-class exercise and discussion
WEEK 4			
Tuesday 09/08/2020	➢ Essentials of Experimental Research in Psychology ➢ Internal & External Validity	➢ Chapter 5 (GOOD)	➢ In-class exercise
Thursday 09/10/2020	➢ Between-Subjects Design	➢ Chapter 6 (GOOD) pp. 159 – 166; 177 – 185	➢ In-class activity

WEEK 5

Tuesday 09/15/2020	➢ Within-Subjects Design	➢ Chapter 6 (GOOD) pp. 167 – 177	➢ In-class exercise and group activity
Thursday 09/17/2020	➢ Single Factor Designs with Two Levels	➢ Chapter 7 (GOOD) pp. 189 – 197	➢ In-class exercise

WEEK 6

Tuesday 09/22/2020	➢ Single Factor Designs with 3 or More Levels ➢ Control Groups	➢ Chapter 7 (GOOD) pp. 198 – 203; 209 – 215	➢ In-class exercise
Thursday 09/24/2020	➢ Factorial Designs (Basic)	➢ Chapter 8 (GOOD) pp. 219 – 237	➢ In-class activity

WEEK 7

Tuesday 09/29/2020	➢ Factorial Designs (Varieties)	➢ Chapter 8 (GOOD) pp. 237 – 251	➢ In-class exercise
Thursday 10/01/2020	➢ Writing Using Scholarly Style ➢ Avoiding Plagiarism	➢ Chapter 2 (GOOD) pp. 30 – 47 ➢ Ethics documents; on Bb	➢ ***Bring a Full Draft of Your Research Proposal*** ➢ ***Proposal Due 10/02/20***

WEEK 8

Tuesday 10/06/2020	➢ Sampling from Populations ➢ Power Analysis	➢ Chapter 4 (GOOD) pp. 93 – 101 ➢ Denis (2003) pp. 13 –17; on Bb	➢ In-class exercise
Thursday 10/08/2020	➢ Validity ➢ Reliability ➢ Measurement Scales	➢ Chapter 4 (GOOD) pp. 101 – 109	➢ In-class activity

WEEK 9

Tuesday 10/13/2020	➢ Ethics in Psychological Science	➢ Ethics documents; on Bb	➢ In-class discussion
Thursday 10/15/2020	➢ Institutional Review Board (IRB)	➢ Readings on Bb	➢ In-class activity

WEEK 10

Tuesday 10/20/2020	➢ Interpreting Main Effects	➢ Readings on Bb	➢ Lecture-discussion
Thursday 10/19/2020	➢ Interpreting Main Effects and Interactions	➢ McBride (2013); on Bb ➢ Privitera (2014); on Bb	➢ In-class activity

WEEK 11

Tuesday 10/27/2020	➢ Introductory Review of Statistics	➢ Chapter 4 (GOOD) pp. 110 – 128	➢ In-class exercise
Thursday 10/29/2020	➢ False Positive Psychology ➢ Power & Value of Replication in Ψ Science	➢ Simmons et al. (2011); on Bb ➢ Roediger (2012); on Bb	➢ In-class exercise

WEEK 12

Tuesday 11/03/2020	➢ Alternatives to NHST ➢ Significance, Effect Size, & Confidence	➢ Denis (2003); on Bb ➢ Fidler & Cumming (2013); on Bb	➢ In-class exercise
Thursday 11/05/2020	➢ Reporting Results ➢ Using Tables and Figures to Display Results	➢ Chapter 9 (BEINS)	➢ In-class exercise

WEEK 13

Tuesday 11/10/2020	➢ Abstracts ➢ Fine Tuning Your Writing	➢ Chapter 15 (BEINS)	➢ In-class exercise
Thursday 11/12/2020	➢ Giving Oral Presentations	➢ Chapter 17 (BEINS) ➢ Kline (2009); on Bb	➢ In-class activity

WEEK 14

Tuesday 11/17/2020	**Research Presentations: 8:00 a.m. to 10:00 a.m.** **Final Research Paper Due TODAY at 11:59 p.m.**

Tentative Schedule of Labs

	Topic	Reading	Lab Assignments: Due by 11:59 p.m. Five Days after Lab
WEEK 1			
LAB #1	➢ APA Format ➢ Microsoft Word ➢ SPSS	➢ Chapters 1 & 2 (BEINS)	➢ Title Page ➢ SPSS Data File ➢ Summary of Interviews
WEEK 2			
Lab #2	➢ Evaluate Posted Article ➢ Create Groups	➢ Chapter 5 (BEINS)	➢ Complete Evaluation of Article
WEEK 3			
Lab #3	➢ Finalize Groups ➢ Brainstorm Ideas for Final Research Paper ➢ Conduct Literature Search for Final Research Paper	➢ Chapters 2, 3 & 4 (BEINS)	➢ Complete Evaluation of Article
WEEK 4			
Lab #4	➢ Qualtrics ➢ Finalize Topic for Final Research Paper ➢ Reference Sections	➢ Chapters 9 & 14 (BEINS)	➢ Prospectus for Final Project ➢ Reference Section
WEEK 5			
Lab #5	➢ Qualtrics (Advanced Features) ➢ Research Questions & Hypotheses	➢ Booth et al. (2008) ➢ Chapters 6 & 10 (BEINS)	➢ Introduction Section
WEEK 6			
Lab #6	➢ Design Experiment ➢ Determine Sampling Procedures	➢ Chapter 11 (BEINS)	➢ Methods Section
WEEK 7			
Lab #7	➢ Ethics Certification ➢ Work on Proposal	➢ Chapter 7 (BEINS)	➢ Ethics Certifications ➢

WEEK 8

Lab #8	➢ Create Informed Consent ➢ Create Debriefing Statement	➢ USC IRB Handbook	➢ Informed Consent Form ➢ Debriefing Statement

WEEK 9

Lab #9	➢ Create Materials ➢ Confounds ➢ Finalize Design ➢ Collect Data?	➢ Review Chapter 4 (GOOD) pp. 111 – 126	➢ Statement about Potential Confounds Affecting Internal & External Validity

WEEK 10

Lab #10	➢ Collect Data ➢ Create SPSS File	➢ Chapter 8 (BEINS)	➢ SPSS File

WEEK 11

Lab #11	➢ Collect Data ➢ Enter Data ➢ Begin Analysis if Data Collection Completed	➢ Chapter 12 (BEINS)	➢ SPSS File with Some Data Entered

WEEK 12

Lab #12	➢ Collect Data! ➢ Analyze Data	➢ Chapters 12 & 13 (BEINS)	➢ SPSS File with Majority of Data Entered

WEEK 13

Lab #13	➢ Abstracts ➢ Analyze Data ➢ Work on Final Paper	➢ Chapter 15 (BEINS)	➢ Abstract ➢ SPSS File Completed ➢ SPSS Output

Zoom Sessions

We are Trojans. We will uphold the academic rigor, open discussion, and have fun regardless of being online. My expertise is in principles of learning in the classroom and online learning. I will not let being online deprive you of a top notch learning experience. I ask you, my fellow Trojans, to do the following during our Zoom Sessions:

1) Attend as many lives sessions as possible. I promise, you will get more out of it.
2) If you cannot attend a live session, you will have the opportunity to watch the lecture and complete the participation.
3) Leave your webcam on whenever possible to help create a sense of community and to help socially connect. We are physically distanced, not socially distanced. Nonverbal communication is still important!

4) Please mute your mic when you are not speaking. I will mute you if I have to, but I want you to take on the responsibility.
5) Ask questions! You may use chat, use the "raise hand" function, or even say, "Excuse me. I have a question." I promise you, I will not get upset if you verbally interrupt me in a polite way. ☺
6) For chat, please private message me for personal matters. If you have a question about content, feel free to share with everyone. Having great questions in chat or verbally make this fun! Seriously, I speak from experience.

Statement on Academic Integrity

USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own. All students are expected to understand and abide by these principles. *SCampus*, the Student Guidebook, (www.usc.edu/scampus or http://scampus.usc.edu) contains the University Student Conduct Code (see University Governance, Section 11.00), while the recommended sanctions are located in Appendix A.

Statement on Plagiarism

Plagiarism, lazy writing, and cheating are violations of the Student Judicial Affairs & Community Standards and may be dealt with by both the instructor and the university. Plagiarism is defined as, "the act of presenting the ideas and writings of another as one's own." Lazy writing is defined as, "using quotes or paragraphs with the proper citation, but are used in a manner that a paper is stitched together and clearly has little or no original writing." Cheating is defined as, "the act of obtaining or attempting to obtain credit for academic work through the use of any dishonest, deceptive, or fraudulent means." In instances of academic dishonesty, the instructor will take appropriate action as outlined in the Academic Integrity Review Process (SJACS 14.10). For more information on avoiding plagiarism or lazy writing, see Chapter 1, Section 1.10 in the APA Publication Manual or visit http://www.usc.edu/student-affairs/student-conduct/ug_plag.htm.

Statement for Students with Disabilities

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me and to the TA as early in the semester as possible. DSP is in STU 301 and is open 8:30 a.m.–5:00 p.m., Monday through Wednesday. Website and contact information for DSP: http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html; Phone: (213) 740-0776; TDD Only: (213) 740-6948; Fax: (213) 740-8216; email: ability@usc.edu.

Course Notes

1) Late Assignments: Assignments turned in late will receive a 5% reduction each day for the first two days turned in late. For the following five days (i.e., after the first two days) the late assignment will result in a 10% reduction for each day it is late. After

seven days, an assignment cannot be turned in and will result in a grade of zero. Students who experience medical emergencies that prevent them from attending class on days when class exercises or assignments are scheduled need to notify me as soon as possible so arrangements can be made. *USC athletes should meet with me as soon as possible regarding their scheduled athletic events that may conflict with course requirements*.

2) Email: I typically respond to emails within 24 hours or less. However, I rarely respond to emails between 5:00 p.m. on Friday to 8:00 a.m. on Monday (i.e., the weekend). I will do my best to email over the weekend if it is urgent, but please note that I cannot guarantee it.
3) Feedback: Your lab instructor and I will make every attempt to return assignments in a reasonable time by returning them no later than two weeks after the due date.
4) Appeal Process: If you find that your answer in an assignment or exam was incorrect, but you think it is correct, you can appeal the decision in writing. The written appeal must have supporting documentation (e.g., reference to a class reading). The appeal cannot be based on your opinion or personal experience, but rather based on the course materials. Appeals must be delivered to the instructor no later than one week after the grade is posted. Appeals will not be accepted via email and no late appeals will be accepted.
5) Course Participation: Your best bet at remembering and understanding the material is to complete the required readings BEFORE class. Also, keep in mind that you may need to do *multiple* readings of the textbook to gain a full comprehension.
6) University Escort Service: If you feel that you would like to be escorted to your vehicle, bus, or campus residence after 5:00 p.m., do not hesitate to call (213) 740-4911.

Special Notes

1) This course is more based on applied learning and less on memorization. There are no exams, midterm, or final exam. You will, however, need to dedicate the time that you would typically spend studying for tests to conducting your research. As in any course, work of a significantly high caliber in each of the components of this course is an A (i.e., exceptional work). It is especially important that you be on time for class, have completed your reading assignments prior to class-time, and that you are prepared for discussion of these materials in class.
2) *All assignments in this course are expected to be word-processed and graphs/tables should be computer-generated.*
3) ***All assignments should be completed using APA-style, including the use of a title page.*** Assignments are due on predetermined due dates and should be submitted electronically through Bb. Word processing and data management software are available in several computer labs on campus. You should consult your APA Publication Manual for all writing assignments.
4) All students are expected to have access to the student computer network. It is your responsibility to ensure that your access is up to date during the semester.
5) Tutors are available through the Learning Resource Center (LRC). If you should find that you are not doing as well in this course as you would like, please see your lab

instructor or me immediately. *We will help you: It is our job!* You can also arrange short-term or long-term tutoring through the LRC. The Writing Center is also available to tutor students who are having difficulty with writing. For assistance, visit their website at http://college.usc.edu/writingcenter/ or call (213) 740-3691.

Emergency Preparedness/Course Continuity in a Crisis

In case of a declared emergency if travel to campus is not feasible, USC executive leadership will announce an electronic way for instructors to teach students in their residence halls or homes using a combination of Blackboard, teleconferencing, and other technologies.

Statement of Course Content as a Copyright

It is important to know that all material presented in class, labs, or discussion sent via email or posted on Blackboard is "all rights reserved" by the course instructor. In addition, some of it is copyrighted and distributed by a publishing corporation for in-class use only. ***You may not store, post, or distribute any course materials—on paper or electronically--for use by any student not presently enrolled in this course***. Out of fairness to all current and future students, please do your part to protect our course content.

Syllabus as a Contract

The purpose of this syllabus is to provide a contract between the instructor and the student. By enrolling in this class, you agree that you have read, understand, and will adhere to the syllabus guidelines and complete the assignments given in the class. I reserve the right to change the schedule of topics and readings and I will give notice to you of such changes well in advance of those changes.

The Foundation to Understanding Statistics!

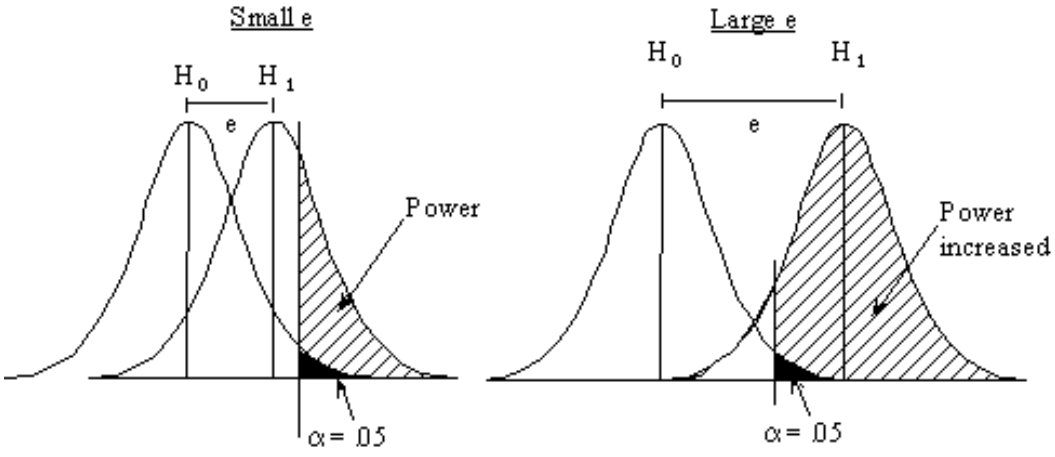

Figure 1. Visual representation of a small effect size (left side) vs. a large effect size (right side). Note the difference between the two distributions in each visual and how the power of an experiment changes based on the size of the treatment effect.