

SYLLABUS
EDUCATION/PSYCHOLOGY 6570

Introduction to Research in Psychology and Education
Summer 2007

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TA Office
Hours: TBA

Text: Gall, M. D., Borg, W. R., & Gall, J. P., Educational research: An introduction (7th ed.). New York: Longman, 2003

Optional but highly recommended: Williams, Joseph M., Style : Ten Lessons in Clarity and Grace

Class Time: TR 4:30-7:00 p.m.; Education Building, Room #487C

Credit: 3 credit hours

Prerequisite: Psychology 2800 or equivalent basic statistics course, such as Stat 1040 or 2000

Course Overview

This course is designed to introduce students to the information and skills needed to critique and conduct research in psychology and education. Instruction will include the essential procedures and concepts needed for the entire research process, from identifying the problem to writing the research report. Research techniques commonly used in education and psychology will be introduced so that the student can develop an understanding of educational/psychological research as a whole. The focus will be conceptual rather than computational. Statistical techniques will be dealt with to some degree since they are essential for designing and interpreting research. However, this is not a statistics course. Students will need to gain expertise in statistics through other course offerings (e.g., EDUC 2800, 6600, and 6610) or by other means. Some statistical concepts will be introduced and discussed, but only as a means to better understand design and interpretation issues.

Substantial reading assignments will be given each week, and students will be expected to come to class prepared to discuss the material contained in the book. Class discussion will supplement the reading material, and students will have a variety of practical hands-on experiences designed to master the material from the text and the classroom discussion. As a part of the class, each student will write a brief, research prospectus (proposal summary) with the main focus on a systematic, integrative review of the literature.

Objectives

The objectives for EDUC/PSYCH 6570 have been agreed upon by the department heads in the College of Education. The student will be able to do the following:

1. Use the reference area of the library, interlibrary loan services, and computerized databases to locate relevant articles and documents on a selected topic.
2. Conduct a systematic review of the literature for the purposes of (a) identifying research questions related to a student-selected topic, (b) describing the strengths and weaknesses in studies on the topic, and (c) delineating methodological issues to be resolved in designing a study in the area of the student's topic. These skills will include the ability to:
 - a. Examine and critique previous reviews.
 - b. Write an introduction for the review.
 - c. Write objectives for the review.
 - d. Obtain reports of studies to be reviewed.
 - e. Develop a coding instrument for coding the studies.
 - f. Collect data from reports systematically.
 - g. Analyze collected data.
 - h. Interpret and report results.
 - i. Write a problem statement, from the results of the review, for a future study.
3. Use APA and USU Publication Guide for Graduate Students when writing a literature review.
4. Describe the elements of a research proposal.
5. Describe the relationships among hypotheses, measures, and analysis procedures in a research proposal.
6. Define the major threats to the internal and external validity of an experiment.
7. Critically read published empirical studies to:
 - a. Identify authors' research questions or objectives.
 - b. Specify authors' conclusions.

- c. Identify the major threats to internal validity and discuss the validity of the authors' conclusions in light of those threats.
 - d. Suggest improvements in the design of critiqued studies to remedy the perceived threats to internal or external validity.
8. Define target and accessible populations and explain the importance of both random sampling and random assignment in group experimental designs.
9. Define and assess independent as well as dependent variables.
10. Understand the issues related to collecting research data using tests, questionnaires, interviews, observation, and content analyses.
11. Understand test validity and reliability and the importance of those concepts when conducting research.
12. Understand the differences among nominal, ordinal, interval, and ratio data and how these differences influence the selection of appropriate statistical procedures.
13. Understand the differences between descriptive and inferential statistics.
14. Understand the difference between statistical and practical significance including:
 - a. The meaning of statistical significance.
 - b. Measures of Effect Size.
15. Describe the methods and tools of:
 - a. Causal-comparative and descriptive research designs.
 - b. Correlational research designs.
 - c. Factorial, experimental, quasi-experimental, and pre-experimental research designs.
 - d. Single-subject research designs.
 - e. Case study methods.
 - f. Qualitative research methods.
16. Understand the ethical, legal, and human relations issues in educational/psychological research.

Schedule of Activities

The course will include outside reading assignments, homework, class discussion, and activities. The various reading assignments and activities are summarized briefly on the following pages. It

is anticipated that the average student will need to spend approximately three hours outside of class for every hour spent in class (i.e., up to 18 hours per week outside of class) on class-related activities.

Academic Honesty

Students are expected to maintain the highest standards of academic honesty. Cheating, falsification of information or plagiarism will not be tolerated. Standards of the University concerning academic honesty are described in the Student Policy Handbook, Article V, Section 3, paragraphs a, b, and c. It is particularly important to emphasize that the written paper for the course must be the student's own work. Plagiarism, using the work of another student as your own, or cheating will be grounds for a failing grade in the course. If you have any questions about how much collaborative work is permissible for any part of the class, speak with the professor.

Evaluation

Course evaluation procedures have been designed to serve two purposes. First, frequent evaluation provides each student with feedback about how well various course concepts are being mastered and makes it difficult for the student to unknowingly fall seriously behind in the work. Secondly, course evaluation is a means of judging and describing the different degrees to which students have mastered the course content. The variety of course evaluation procedures described below have been designed with both purposes in mind. Points, including all exams, quizzes, and written assignments, total 550 points. Points resulting from these activities will be used to determine the student's final grade according to the following outline:

A	94-100%	C	73-76%
A-	90-93%	C-	70-72%
B+	87-89%	D+	67-69%
B	83-86%	D	63-66%
B-	80-82%	D-	60-62%
C+	77-79%	F	59% or below

Activity	Points	Description and Rationale
1. Final Examination	100	A final exam consisting of multiple choice and short answer questions will be given during the last day of class. Content for the final exam will include reading assignments, class discussions, and out-of-class activities covered during the last half of the course. Students are responsible for everything contained in the assigned chapters of the book, whether or not these topics are discussed explicitly during class.
2. Mid-term	100	The mid-term exam consisting of multiple choice and short answer questions will be given during the middle week of class. Content for the mid-term exam include reading assignments, class discussions, out of class activities covered during the first half of the course. Students are responsible for everything

contained in the assigned chapters of the book, whether or not these topics are discussed explicitly during class.

3. Quizzes 100 A brief quiz worth 10 points will be given each week when there is assigned reading from the text. Items on the quiz will cover the reading assignment from the text for that week. Questions on the quiz will cover basic knowledge and are similar to the questions contained in the self-check test at the end of each chapter. Students will not be allowed to make up quizzes that are missed. Two of the twelve lowest quiz scores will be dropped from the final grade computation.

4. Research Prospectus 100 Each student will prepare a 5 page summary of a research proposal following the Graduate School format and style guidelines, e.g., double-spaced pages. Typographical errors, misspelling, and grammatical errors are counted toward the total points earned. Additional instructions for this activity will be given during class.
 - a. Proposal Topic and Tentative Research Questions 10 Each student will submit a short (maximum 2 typed page) summary of the research topic his or her proposal will address. Research questions help guide the design and analysis of the research. Each student will submit 2-5 research questions that will be answered by his or her proposed research. ***Be sure to include title on this and all other assignments.**
 - b. Problem Statement and Syllogism 10 Using the material discussed in class, each student will create an outline of their problem statement for the research proposal in logical syllogistic format.
 - c. Literature Review Plan 10 The literature review is closely tied to the logic contained in the problem statement. This assignment will help make this connection. Each student will write a 1/2-page introduction to their literature review, including sources, keywords, inclusion/exclusion criteria, and at least 3 review objectives.
 - d. Coding Sheet 10 Construct a draft data catcher to collect information on relevant characteristics and possible covariates to analyze your review articles.

5. Other Homework Assignments
 - a. Attend Library Tour & Worksheet 20 Computer-assisted literature searches have greatly facilitated the retrieval of literature for doing research reviews. Students will attend a library tour which will provide the information necessary to conduct a search from start to finish. Students will complete the library assignment sheet which requires them to

use some of the most important techniques they learn during the tour.

- b. Exercises on Internal Validity 10 Students will complete a worksheet in which they identify the most probable threats to internal validity in a number of research situations.
- c. Critique Research Articles 30 The ability to critique and critically evaluate the adequacy of completed research is an essential skill. Guidelines for this task are contained in the textbook and will be discussed during class. During the semester, students will do a short written critique of 3 different research articles, each worth 10 points.
- d. Class Presentation 50 Present a 10 minute summary of your Research Prospectus.

<p>If a student has a disability that will likely require some accommodations by the instructor, the student must contact the instructor and document the disability through the Disability Resource Center. In cooperation with Disability Resources, course material may be provided in alternative formats such as large print, audio, diskette, or Braille.</p>

Tentative Weekly Schedule

WEEK	TOPICS	ASSIGNMENTS DUE NEXT CLASS
#1 June 12	Review Syllabus Problem Statements	Read Ch. 2, 4
June 14	Quiz #1 (Ch. 2, 4) Problem Statements (cont)	Prospectus Topic & Research Questions Read Ch. 1, 3
#2 June 19	Quiz #2 (Ch 1, 3) Library Tour, 5:00, Rm. TBA	Library Tour Assignment Problem Statement Syllogism Read Ch. 12
June 21	Quiz #3 (Ch. 12) Internal Validity	Read Ch. 13
#3 June 26	Quiz #4 (Ch. 13) Internal Validity (con't)	Validity Exercise Read Ch 5
June 28	Quiz #5 (Ch. 5) Systematic Literature Review Strategy	Read and Critique Article #1 Read Ch. 6, 7
#4 July 3	Quiz #6 (Ch. 6, 7) Discuss Article #1 Statistics	Collecting and Coding Your Articles Study for Midterm
July 5	Midterm Exam Covering Ch. 1 – 7; 12 &13	Literature Review Plan & Code Sheet (Due July 10) Read and Critique Article #2 Read Ch. 8, 9
#5 July 10	Quiz #7 (Ch. 8, 9) Statistics Discuss Article #2	Coding Your Articles Read and Critique Article #3 Read Ch. 10, 11
July 12	Quiz #8 (Ch. 10, 11) Discuss Article #3	Coding Your Articles Read Ch. 14, 15 Read and Critique Sample Prospectus #1
#6 July 17	Quiz #9 (Ch.14, 15) Discuss Sample Prospectus #1	Start Writing Research Prospectus Read Ch. 17 Read Sample Prospectus #2
July 19	Quiz #10 (Ch.17) Discuss Sample Prospectus #2	Continue Writing Research Prospectus Read Ch 18 Read Sample Prospectus #3

#7 July 24	No Class	
July 26	Quiz # 11 (Ch18) Discuss Sample Prospectus #3	Continue Writing Research Prospectus Develop Presentation of Prospectus for Class
#8 July 31	Class Presentations	Research Proposal Summary Due on Aug 3 Study for Final
#9 Aug 2	Turn in Research Proposal Summary Final Exam (Ch 8-11, 14,15,17,18)	