

**SYLLABUS
EDUCATION/PSYCHOLOGY 6570**

**Introduction and Research in Psychology and Education
Fall 2007**

Instructor: Karl R. White (Phone: 797-3013; E-mail: karl.white@usu.edu)

Office: Education Building, Room 430 (Secretary is Sherry Johnson in Room 438)

Text: Gall, M. D., Gall, J. P., & Borg, W. R. (2007). Educational research: An introduction (8th ed.). New York: Longman.

Class Time: Tuesdays, 4:30 - 7:00 p.m., Room EDUC 130

Credit: 3 credit hours

Prerequisites: Psychology 2800 or equivalent basic statistics course

Office Hours: Tuesdays and Thursdays - 8:30 - 10:30 a.m.

Course Overview

This course is designed to introduce the student to the conduct of research in psychology and education. Instruction will include the procedures and concepts needed for the entire research process, from identifying the problem to writing the research report. Most research techniques commonly used in education and psychology will be introduced so that the student can acquire 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 6600 and 7610) 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 to supplement the information from the text and the classroom discussion. As a part of the class, each student will write a 5-7 page Research Proposal Summary. This summary will outline the logical problem statement, briefly explain how each of the assertions made in the problem statement can be supported from past research and/or practice, and describe a proposed research study that appropriately builds on or replicates what is known about this area.

Course Objectives

1. Use the reference area of the library, interlibrary loan services, and computerized databases to locate relevant articles on a selected topic.
2. Critically read reviews of research and critique as to:
 - a. Definition of a topic or problem.
 - b. Adequacy of prior reviews in the area
 - c. Selection of studies to be reviewed.
 - d. Analysis of study findings and pertinent characteristics.
 - e. Interpretation of results and preparation of a report.
3. Conduct an integrative 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 objectives for a new review.
 - c. Obtain reports of studies to be reviewed.
 - d. Develop a system for collecting data about the characteristics and results of previously conducted research.
 - e. Analyze collected data.
 - f. Interpret and report results.
 - g. Write a problem statement, from the results of the review, for a future study.
4. Use APA and USU Publication Guide for Graduate Students.
5. Describe the elements of a research proposal.
6. Describe the relationships among hypotheses, measures, and analysis procedures in a research proposal.
7. Identify the major threats to the internal and external validity of an experiment.

8. 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 threats to internal or external validity.
9. Explain the importance of defining target and accessible populations and of both random sampling and random assignment in group experimental designs.
10. Explain the importance of carefully defining and assessing independent as well as dependent variables.
11. Understand the issues related to collecting research data using tests, questionnaires, interviews, observation, and content analyses.
12. Understand test validity and reliability and the importance of those concepts when conducting research.
13. Understand the differences among nominal, ordinal, interval, and ratio data and how these differences influence the selection of appropriate statistical procedures.
14. Understand the differences between descriptive and inferential statistics.
15. Understand the difference between statistical and practical significance including:
 - a. The meaning of statistical significance.
 - b. Measures of effect size.
16. 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.
17. 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 on the next page. It is anticipated that the average student will need to spend approximately two hours outside of class for every hour spent in class (i.e., most students will spend about 6 hours per week outside of class) on class-related activities.

Electronic Reserves

A few readings and other homework assignments are posted on USU's electronic reserves. These can be accessed by going to the web address, <http://eres.usu.edu> (do not use www at the beginning), click on "Electronic Reserves and Reserves Pages." You can look up the course either by the Course Number (PSY6570) or by the instructor (Karl White). The password is research (lower case). You can either view the article or print it.

Academic Honesty

Students are expected to adhere to 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 instructor.

Week	Class Discussion	Assignment
#1 August 28	Pretest on statistics Problem Statements Internal Validity	Exercises on Internal Validity (due Sept. 4) Psych 2800 Competency Test (due Sept. 4) Critique problem statements (due Sept. 11)
#2 September 4	Discuss Threats to Internal Validity Exercises Library Tour (5:15 pm SciTech Library 122)	Proposal Summary Topic (due Sept. 11) Library Assignment (due Sept. 11)
#3 September 11	1 The Nature of Educational Research 2 The Research Process: From Proposal to Final Report 3 Ethics and Site Relations in Educational Research	Problem Statement Outline (due Sept. 18) Complete online Protection of Human Subjects Module (due Oct. 16)
#4 September 18	4 Reviewing the Literature Boote & Beile (2005) Discuss Problem Statements	Research questions (due Sept. 25)
#5 September 25	5 Statistical Techniques Shadish, Cook & Campbell, Chapters 1 and 2	Critique Research Proposal Summary #1 (due Oct. 2)
#6 October 2	6 Selecting a Sample 7 Collecting Research Data with Tests and Self-Report Measures Worthen et al., Chapter 4	Outline of Literature Review (due Oct. 9) Survey Topic (due Oct. 9)
#7 October 9	8 Collecting Research Data with Questionnaires and Interviews 9 Collecting Research Data Through Observation and Content Analysis Worthen et al., Chapter 5	Survey Items (due Oct. 16) Critique Research Article #1 (due Oct. 16)
#8 October 16	10 Non-experimental Research: Descriptive Causal-Comparative Designs 11 Non-experimental Research: Correlational Designs	Survey Instrument (due Oct. 23)
Week	Class Discussion	Assignment
#9 October 23	Mid-Term	Collect Survey Data (Oct. 4 - Nov. 5) Critique Research Article #2 (due Oct. 30)

#10	October 30	12	Experimental Designs: Part 1	Submit Survey Results (due Nov. 6)
#11	November 6	13 14	Experimental Designs: Part 2 Case Study Research Computer Analysis Workshop	Submit Draft Research Proposal Summary (due Nov. 13) Margaret Mead Article Critique
#12	November 13	15 16	Qualitative Research Traditions Historical Research	Analysis of Survey Data (due Nov. 20) Critique Classmate's Research Proposal Summary (due Nov. 20)
#13	November 20	17	Evaluation Research Shadish, Cook & Campbell, Chapter 3	Critique Research Proposal Summary #2 (due Nov. 27)
#14	November 27	18	Action Research	Submit summary of survey findings and interpretation (due Dec. 4) Critique Research Proposal Summary #3 (due Dec. 4)
#15	December 4		Discuss survey analyses Review practice final	Research Proposal Summary (due Dec. 11)
Tuesday, December 11		FINAL EXAM IS TUESDAY, DECEMBER 11, 2007, 3:30 - 5:20 PM		

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 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	Possible Points	Description and Rationale
1. Final Examination	150	A final examination consisting of multiple choice and open-ended questions will be given during the University's final examination week. Content for the final examination will come from reading assignments, class discussions, and out-of-class activities during the entire semester. Students are responsible for everything contained in the book, whether or not these topics are discussed explicitly during class. A take-home practice final examination will be given to students to assist them in preparing for the final examination.
2. Mid-term	100	The mid-term will cover the first 8 weeks of the course (Chapters 1-9 in the book, plus the material discussed in class). It will consist of multiple choice and open-ended questions.
3. Quizzes	100	A brief quiz 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. Students will not be allowed to make up quizzes that are missed. Each student's lowest quiz score will not be included in the final grade computation.
4. Research Proposal Summary		

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| a. | Proposal Topic | 5 | Each student will submit the main question his or her research project will answer (One-sentence limit!!) |
| b. | Problem Statement Outline | 10 | Using the material discussed in class, each student will create an outline of the logic contained in the problem statement for the research proposal. |
| c. | Research Questions | 5 | 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. |
| d. | Literature Review Outline | 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 outline the proposal literature review in a way that links it to the problem statement outline. |
| e. | Submit Draft Research Proposal Summary | 10 | Each class member will submit a draft of their research proposal summary so it can be critiqued by another member of the class. |
| f. | Research Proposal Summary | 50 | Each student will prepare a 5-8 page summary of a research proposal. Additional instructions for this activity will be given during class. |
5. Other Homework Assignments
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| a. | Complete Psych 2800 Competency Test | 10 | Students will complete a multiple-choice test of the content covered in Psych 2800: Psychological Statistics, which is a prerequisite for this course. |
| b. | Attend library tour and complete assignment | 10 | 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 homework assignment which requires them to use some of the most important techniques they learn during the tour. |
| c. | Complete online module about | 10 | All people doing research at USU that involve human subjects are required to complete training to ensure that |

	Protection of Human Subjects		research participants are adequately protected. This online module is available at www.citiprogram.org , and will require about 4 hours to complete.
d.	Critique of problem statements	10	Students will be given a number of problem statements/objectives from existing research proposals and/or journal articles and will critique them in terms of how well they are done based on the material contained in the textbook and the class discussions.
e.	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.
f.	Critique research articles	20	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 three different research articles.
g.	Critique research proposal summaries	30	Each student will rate three research proposal summaries similar to what will be submitted for EDUC 6570. The same rating system will be used as will be used by the instructor to rate the proposals for this course.
h.	Critique classmates' draft research proposal summary	10	Students will critique and make suggestions for improving a draft research proposal summary of one of their classmates.
6.	Class Survey		This assignment provides an opportunity for students to participate in a research project. Members of the class will select a topic and construct, pilot-test, collect data, analyze, and summarize results of a small survey.
a.	Ideas for Survey Topic	5	Each student will submit two ideas for the survey. The class as a whole will decide which idea will be used.
b.	Survey Items	5	The second assignment will require that each student turn in five items to be used in the survey. Again, the class will decide on which items will be used and in what form.
c.	Survey Instrument	10	Using the items submitted previously and based on the discussion in class, each student will prepare a survey

instrument to be used for the project. The final instrument will be assembled from those submitted.

- d. Collect Survey Data 10 Each student will be required to collect survey data for the survey using the procedures decided by the class.
- e. Computer Analysis 10 Students will enter the data they collected for the survey, Assignment Use SPSS to compute descriptive statistics and "clean" the data set and analyze the results of the survey.
- f. Report Survey Findings 10 Each student will write a brief report of the survey project.

<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>

RATING SHEET FOR 6570 PROPOSAL SUMMARIES

Problem Statement (15)

- syllogistic/logical/concise
- convincing
- advance organizer of proposed study

Hypotheses/Research Questions/Objectives (5)

- specific/well defined/testable
- clear and concise

Review of Literature (20)

- follows outline and supports assertions made in problem statement
- demonstrates awareness of major research in area
- critical analysis of previous research
- shows how proposed work will extend, replicate, or improve previous work in related areas

Procedures (5)

- based on review of literature
- logically organized
- complete explanation of what will be done
- appropriate analysis procedures

Quality Control (5)

- neatly typed and proofread
- absence of spelling errors, typos, grammar mistakes
- consistency with guidelines
- general quality of writing (logical, concise, clear, etc.)

TOTAL (50)

Rating Form for Research Article Critiques

Name/Date _____

Author/Year

I. Threats to Internal Validity

0 = _____
not a plausible threat to the study's internal validity

History _____

1 = potential minor problem in attributing the observed effect to the treatment; by itself not likely to account for substantial portion of observed results

Mortality _____

Instrumentation _____

2 = plausible alternative explanation which by itself could account for substantial amount of the observed results

Testing _____

Selection _____

3 = by itself could explain most or all of the observed results

Regression _____

Maturation _____

II. General Rating of Validity (1 = high, to 5 = low)

III. Author's Major Conclusions(s)

IV. Your Major Conclusions(s)

