

“Preparing Professionals for Changing Educational Contexts”

**Department of Educational Psychology & Higher Education**  
**College of Education, University of Nevada, Las Vegas**

**Research Methods**

**EPY 702-1002**

Spring 2017

3 Credit Hours

**INSTRUCTOR NAME:**

**OFFICE HOURS:**

**OFFICE LOCATION:**

**OFFICE PHONE:**

**E-MAIL:**

**CLASS TIME:**

**CLASS PLACE:**

Please check your **official, university-issued** student e-mail addresses for any correspondence I may send relative to this class. This would include handouts or test grades. The UNLV Cabinet approved a policy that states that students will be held accountable for messages sent to their Rebelmail accounts. Your official e-mail address ends in “@unlv.nevada.edu.” You can activate your account by visiting:

<http://Rebelmail.unlv.edu>. **Non-admitted students should contact the Student help Desk at (702)895-0761, in the Student Union Room 231, or be e-mail: [stu-denthelp@unlv.edu](mailto:studenthelp@unlv.edu).**

**REQUIRED TEXTBOOK(S), ETC.**

Gay, L. R., Mills, G. E., & Airasian, P. (2016). *Educational research: Competencies for analysis and applications*. (11<sup>th</sup> Ed.) Upper Saddle River, NJ: Boston, MA: Pearson Education, Inc.

**SUPPLEMENTAL TEXTS AND/OR MATERIALS**

Suggested Resource:

American Psychological Association (2009). Publication Manual of the American Psychological Association. (6<sup>th</sup> ed.) Washington: American Psychological Association.

**COURSE DESCRIPTION**

Catalog Description: An early entry graduate-level survey of research methods with an emphasis on comprehension of the educational research literature. Course includes scientific method, locating and summarizing published research, sampling, measurement, statistics, research design, and critique of published research. 3 credits.

Purpose, goals, and objectives of the course: The purpose of this course is to provide initial instruction on how to locate and understand, critically analyze and evaluate published educational and psychological research.

## **INTASC PRINCIPLES ADDRESSED:**

This course meets the following knowledge, skills, and dispositions for the INTASC Model Core Teaching Standards April 2011:

### **Standard #4: Content Knowledge**

The student understands the central concepts, tools of inquiry, and structures of the discipline(s) he or she teaches and creates learning experiences that make these aspects of the discipline accessible and meaningful for learners to assure mastery of the content. Specifically:

4c- The learner applies methods of inquiry and standards of evidence used in the discipline.

4j- The student understands major concepts, assumptions, debates, processes of inquiry and ways of knowing central to the discipline.

4k- The student understands common misconceptions in learning the discipline.

4l- The student knows and uses the academic language of the discipline.

4o- The student realizes that content knowledge is not a fixed body of facts but is complex, culturally situated, and ever evolving. S/he keeps abreast of new ideas and understandings in the field.

### **KNOWLEDGE & SKILLS RELATED TO THE DEVELOPMENT AND ANALYSIS /CRITIQUE OF RESEARCH REPORTS**

Chapter 1: Introduction to Educational Research

Learning Outcomes: Students will:

- List and briefly describe the major steps involved in conducting a research study.
- Describe the differences between quantitative and qualitative research.
- Briefly define and state the major characteristics of these research approaches: survey, correlational, causal-comparative, experimental, single-subject, narrative, ethnographic, and case study.
- Identify and differentiate among research purposes, including basic research, applied research, evaluation research, research and development (R&D), and action research.
- Recognize the ethical obligations that educational researchers have and describe the codes and procedures they follow to ensure they adhere to them.

## Chapter 2: Selecting and Defining a Research Topic

Learning Outcomes: Students will:

- Distinguish good research topics from less appropriate ones.
- Distinguish between topic statements for quantitative studies and those for qualitative studies.
- Identify or create good research hypotheses for quantitative and qualitative studies.
- Explain the differences between null, directional, and non-directional hypotheses and discuss the use of a directional hypothesis in a study.

## Chapter 3 Reviewing the Literature

Learning Outcomes: Students will:

- Define the purpose of a review of related literature in quantitative and qualitative studies.
- Find primary and secondary sources for a literature review using indexes, databases, the internet, and library stacks.
- Evaluate the sources to determine their appropriateness as part of the literature review.
- Describe the steps involved in analyzing, organizing, and reporting a review of the literature.
- Define meta-analysis and describe the process for conducting a meta-analysis.

## Chapter 4 Preparing a Research Plan

Learning Outcomes: Students will:

- Briefly describe each component of a quantitative research article.
- Evaluate each component of a quantitative research article using the criteria outlined in class and on the Ch. 4 powerpoints.

## Chapter 5 Selecting a Sample

Learning Outcomes: Students will::

- Define sampling, and distinguish between samples and populations.
- Define random sampling, and explain how to select a sample using four random sampling techniques.
- Define nonrandom sampling, and explain how to select a sample using three nonrandom sampling techniques.
- Explain the difference between sampling error and sample bias, and describe strategies for avoiding each.
- Describe the sampling strategies commonly used in qualitative studies.

## Chapter 6 Selecting Measuring Instruments

Learning Outcomes: Students will:

- State the relation between a variable and a construct, and distinguish among categories of variables (e.g., categorical and quantitative; depend-

ent and independent) and the scales to measure them (e.g., nominal, ordinal, interval, and ratio).

- Define measurement, and describe ways to interpret measurement data.
- Describe the types of measuring instruments used to collect data in qualitative and quantitative studies (e.g., cognitive, affective, and projective tests).
- Define validity, and differentiate among content, criterion-related, construct, and consequential validity.
- Explain how to measure reliability, and differentiate among stability, equivalence, equivalence and stability, internal consistency, and scorer/rater reliability.
- Identify useful sources of information about specific tests, and provide strategies for test selection.
- Provide guidelines for test construction and test administration.

## Chapter 7 Survey Research

Learning Outcomes: Students will:

- Define survey research, and differentiate between sample surveys and census surveys, and between cross-sectional and longitudinal surveys.
- Describe the procedures involved in constructing a questionnaire.
- Describe the procedures involved in administering a questionnaire.

## Chapter 8 Correlational Research

Learning Outcomes: Students will:

- Briefly state the purpose of correlational research, and describe the major steps involved in basic correlational research.
- Describe the size and direction of values associated with a correlation coefficient, and explain its relation to statistical significance.
- State the major purposes of relationship studies, and identify and briefly describe the steps involved in conducting a relationship study and interpreting the data.
- State the major purposes of prediction studies, and identify and briefly describe the steps involved in conducting a prediction study and interpreting the data.

## Chapter 9 Casual-Comparative Research

Learning Outcomes: Students will:

- Briefly state the purpose of causal-comparative research and describe the similarities and differences among causal-comparative, correlational, and experimental research.
- Identify causal-comparative research topics, and describe the basic causal-comparative design.

- Identify and describe three types of control procedures that can be used in a causal–comparative study, and explain why the results of causal–comparative studies must be interpreted very cautiously.

## Chapter 10 Experimental Research

Learning Outcomes: Students will:

- Briefly state the purpose of experimental research and list the basic steps involved in conducting and controlling an experiment.
- Briefly define internal validity and describe eight major threats to the internal validity of an experiment.
- Briefly define external validity and describe six major threats to the external validity of an experiment.
- Identify and briefly describe five ways to control extraneous variables.
- Define and provide examples of single-variable designs (i.e., pre-experimental, true experimental, and quasi-experimental designs) and factorial designs, and explain how they differ.

## Chapter 11 Single-Subject Experimental Research

Learning Outcomes: Students will:

- Describe the characteristics of a single-subject design, and explain the benefits and challenges of this type of research.
- Differentiate among the three major categories of single-subject designs — A–B–A withdrawal, multiple-baseline, and alternating treatments designs — and the variants within each category.
- Briefly describe three types of replication involved in single-subject research, and explain why replication is more useful than statistical analysis.

## Chapter 17 Descriptive Statistics

Learning Outcomes: Students will:

- Define and distinguish among the three measures of central tendency
- Define variability, and distinguish among the range, semi-quartile range, variance, and standard deviation
- Describe the major characteristics of normal and skewed distributions.
- Define and differentiate among measures of relative position, including percentile ranks and standard scores.
- Define and differentiate among two measures of relationship, the Pearson  $r$  and Spearman rho.

## Chapter 18 Inferential Statistics

Learning Outcomes: Students will:

- Explain the concept of standard error and describe how sample size affects standard error.
- Explain how a test of significance is related to the null hypothesis and the research hypothesis of a study, and differentiate between one-tailed and two-tailed tests of significance.

- Define Type I and Type II errors.
- Explain when and how to use a  $t$  test for independent samples, a  $t$  test for nonindependent samples, and gain or difference scores.
- Explain when and how to use analysis of variance, including one-way and multifactor ANOVA and ANCOVA.
- Explain when to use multiple regression and chi square.
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## Chapter 19 Qualitative Data Collection

Learning Outcomes: Students will:

- Distinguish between participant and nonparticipant observational techniques and describe how they can be used in a qualitative study.
- Identify four specific interview techniques and describe how they can be used in a qualitative study

### DISPOSITIONS

- Promote a disposition to question factual statements in order to determine the adequacy of supporting documentation.
- Develop behaviors and attitudes that promote the value of knowledge based on evidence. \*

### RESULTS/PERFORMANCES

Students will demonstrate attainment of objectives by: (a) performance on 8 multiple-choice exams comprising questions at the comprehension and application levels of Bloom's Taxonomy; b) two interpretive critiques of research articles; c) homework assignments, and d) fulfillment of the EPY 702 research participation requirement.

### ASSIGNMENTS & PERFORMANCE ASSESSMENTS

Students will demonstrate attainment of knowledge, performance, and dispositional skills by: a) performance on 8 multiple-choice exams comprising questions at the comprehension and application levels of Bloom's Taxonomy; b) their performance on two exercises designed to assess their ability to read and interpret research (reading research assignments) c) their performance on homework assignments, and d) fulfillment of research requirement.

**A. Exams.** There are 9 scheduled multiple-choice exams. Two of these are the pretest and cumulative posttest (the latter counts as part of your final grade). **The pretest does not count as part of your final grade, but you will lose 100 points (10% of your grade) if you do not complete it.**

**B. Reading Research Assignments.** The primary purpose of these assignments is to develop your skills in understanding, critically analyzing, and evaluating published re-

search. These assignments assess the degree to which you are able to apply the concepts you've learned in this course.

**C. Homework Assignments.** Homework assignments are due on the days indicated on the class outline. **Late assignments will not be accepted.**

**D. EPY 702 Research Participation Requirement:**

To further illustrate the nature of educational research, you will need either to participate in an EPY research project or to submit position papers as the alternative assignment. In this course the requirement is three hours. \*\*\*\* **Failure to complete the research requirement will result in a loss of 100 points (10 % of your grade.)** \*\*\*\*Details about registering in the Experiment Management System and about studies as they become available are at <http://education.unlv.edu/ephe/research>

**You are expected to register in the system during the first two weeks of our course.**

**GRADING POLICY**

Each of you will be evaluated solely on the quality of your own performance. Final grades will be determined by your performance on: **seven (7) of the eight (8) exams administered (not counting the pretest), the two reading research exercises, the homework assignments, and your fulfillment of the research participation requirement (which lowers your grade by 100 points if it is not completed within the time allotted by the Experiment Management System ).**

**PLEASE NOTE that your performance on the cumulative post-test is NOT an exam grade that can be dropped.**

Pretest	
Exam # 1	100 points (Ch. 1, pp. 1-18)
Exam # 2	100 points(Chs. 1, pp. 19-27, and Chs. 2, 3, 4 & 5)
Exam # 3	100 points(Ch. 6)
Exam # 4	100 points(Chs. 7, 8, & 9)
Exam # 5	100 points (Chs. 10 & 11)
Exam # 6	100 points (Ch. 17 & class notes)
Exam #7	100 points (Ch. 18)
Exam # 8	Cumulative Post-Test
	100 points
Reading Research Exercise # 1	100 points
Reading Research Exercise #2	100 points
Homework Assignments	100 points

Grades will be assigned as follows:

**900-1000 = A (90 % and up)**

**800-899= B (80-89.99%)**

**700-799= C (70-79.99%)**

**600-699= D (60-69.99%)**

**599 or below = F**

**Note 2:** I reserve the right to employ pluses or minuses for your final grade for this class if I deem it appropriate to do so.

**Note 3:**For each exam, you will be asked to supply a “code number.” This code, which you will “make up,” will be the code by which I will list your test grades. You may make up a different code for each exam. The important point is that you will remember it and thus be able to identify your test grade when I list it.

### **CLASS ATTENDANCE**

Class attendance is **strongly** encouraged. Although we will generally go over tests in class, you will not be allowed to keep any of them. Exams will be based on information from the text and class lectures.

You are solely responsible for any material, information, announcements etc. that you miss in class. You must contact either a fellow classmate to find out what you have missed.



## CLASS SCHEDULE

### Spring 2017—Approximate Class Schedule

Date	Topic & Assignments	Readings Due
01/17	Pretest (15 items) Overview & Introduction to Research Classifying Research	Ch. 1
01/24	Legal & Ethical Considerations & IRB  Selecting & Defining a Research Problem Reviewing the Literature <b>TEST # 1 (Ch. 1)</b>	Ch. 1(pp.18-27) Ch. 2 Ch. 3
01/31	Components of a Quantitative Research study/ Plan/ Article Selecting a Sample	Ch. 4 Ch. 5
02/07	Selecting Measuring Instruments  Reliability & Validity <b>TEST # 2 (Ch 1 pp. 18-27, and Chs. 2, 3, 4, &amp; 5)</b>	Ch. 6 (pp157-168) (pp. 168-182)
02/14	Survey Research <b>Homework # 1 (Reliability &amp; Validity -15 points)</b> <b>TEST # 3 (Ch. 6)</b>	Ch. 7
02/21	Correlational Research <b>Homework # 2, question # 1 (Generating Survey Research -6 pts)</b>	Ch. 8
02/28	Correlational Research (cont.) Causal-Comparative Research <b>Homework # 2, question # 2 (Generating Correlational Research-6 pts)</b>	Ch. 8 Ch. 9
03/07	Causal-Comparative Research (cont.) Threats to Internal & External Validity <b>Reading Research #1 (RR#1) DUE</b>	Ch. 9 Ch. 10
03/14	Experimental Designs <b>TEST # 4 (Chs. 7, 8 &amp; 9)</b> <b>Homework # 2, question # 3 (Generating Causal-Comparative Research- 8 pts)</b>	Ch. 10

03/21	Experimental Designs (cont.) Single Subject Experimental Research	Ch. 10 Ch. 11
03/28	Descriptive Statistics <b>TEST # 5 (Ch. 10 &amp;11)</b> <b>FINAL REVISIONS FOR RR #1 &amp;</b> <b>ALL REVISED RESEARCH QUESTIONS DUE</b>	Ch. 17
04/04	Inferential Statistics <b>Homework # 3 due (Descriptive statistics- 15 points)</b>	Ch. 18
04/11	<b>SPRING BREAK</b>	
04/18	Inferential Statistics (cont.) <b>TEST # 6 (Ch. 17)</b>	
04/25	“Catch up” <b>Reading Research # 2 (RR#2) DUE</b>	
05/02	Qualitative Research (Dr. LeAnn Putney, guest speaker)	
05/09	<b>FINAL EXAMINATION</b> <b>TEST # 7 (Ch. 18) &amp;</b> <b>CUMULATIVE EXAM (Test # 8 -15 questions)</b>	

## STUDENTS' RIGHTS AND RESPONSIBILITIES

You have a number of rights and responsibilities in this course. These are listed below:

### Rights:

*You have the right to expect:*

- fairness in grading
- special testing situations if you have a learning disability and are registered with DRC
- access to course materials
- feedback on your work
- fair hearing of grievances

### Responsibilities:

*You are responsible for:*

- taking control of your own learning (seek assistance from me if you need it)
- reading the syllabus**
- being aware of course assignment criteria and due dates, exam dates and policies
- studying and actively working with the assigned chapter readings
- knowing material covered in class whether you attend or not
- behaving in an ethical manner in regards to class assignments and exams
- participating in class, but not to the exclusion of others
- conducting yourself in the professional demeanor required to be a successful teacher/ professional

## UNLV POLICIES

**Academic Misconduct**—Academic integrity is a legitimate concern for every member of the campus community; all share in upholding the fundamental values of honesty, trust, respect, fairness, responsibility, and professionalism. By choosing to join the UNLV community, students accept the expectations of the Student Academic Misconduct Policy and are encouraged when faced with choices to always take the ethical path. Students enrolling at UNLV assume the obligation to conduct themselves in a manner compatible with UNLV's function as an educational institution. An example of academic misconduct is plagiarism. Plagiarism is using the words or ideas of another, from the Internet or any source, without proper citation of the sources. See the *Student Academic Misconduct Policy* (approved December 9, 2005) located at: <https://www.unlv.edu/studentconduct/student-conduct>.

**Copyright**—The University requires all members of the University Community to familiarize themselves with and to follow copyright and fair use requirements. You are individually and solely responsible for violations of copyright and fair use laws. The university will neither protect nor defend you, nor assume any responsibility for employee or student violations of fair use laws. Violations of copyright laws could subject you to federal and state civil penalties and criminal liability, as well as disciplinary action under University policies. Additional information can be found at: <http://www.unlv.edu/provost/copyright>.

**Disability Resource Center (DRC)**—The UNLV Disability Resource Center (SSC-A 143, <http://drc.unlv.edu/>, 702-895-0866) provides resources for students with disabilities. If you feel that you have a disability, please make an appointment with a Disabilities Specialist at the DRC to discuss what options may be available to you. If you are registered with the UNLV Disability Resource Center, bring your Academic Accommodation Plan from the DRC to the instructor during office hours so that you may work together to develop strategies for implementing the accommodations to meet both your needs and the requirements of the course. Any information you provide

is private and will be treated as such. To maintain the confidentiality of your request, please do not approach the instructor in front of others to discuss your accommodation needs.

**Final Examinations**—The University requires that final exams given at the end of a course occur at the time and on the day specified in the final exam schedule. See the schedule at: <http://www.unlv.edu/registrar/calendars>.

**Incomplete Grades**—The grade of I—Incomplete—can be granted when a student has satisfactorily completed three-fourths of course work for that semester/session but for reason(s) beyond the student’s control, and acceptable to the instructor, cannot complete the last part of the course, and the instructor believes that the student can finish the course without repeating it. The incomplete work must be made up before the end of the following regular semester for undergraduate courses. Graduate students receiving “I” grades in 500-, 600-, or 700-level courses have up to one calendar year to complete the work, at the discretion of the instructor. If course requirements are not completed within the time indicated, a grade of F will be recorded and the GPA will be adjusted accordingly. Students who are fulfilling an Incomplete do not register for the course but make individual arrangements with the instructor who assigned the I grade.

**Library Resources**—Students may consult with a librarian on research needs. Subject librarians for various classes can be found here: [https://www.library.unlv.edu/contact/librarians\\_by\\_subject](https://www.library.unlv.edu/contact/librarians_by_subject). UNLV Libraries provides resources to support students’ access to information. Discovery, access, and use of information are vital skills for academic work and for successful post-college life. Access library resources and ask questions at <https://www.library.unlv.edu/>.

**Rebelmail**—By policy, faculty and staff should e-mail students’ Rebelmail accounts only. Rebelmail is UNLV’s official e-mail system for students. It is one of the primary ways students receive official university communication such as information about deadlines, major campus events, and announcements. All UNLV students receive a Rebelmail account after they have been admitted to the university. Students’ e-mail prefixes are listed on class rosters. The suffix is always [@unlv.nevada.edu](mailto:@unlv.nevada.edu). **Emailing within WebCampus is acceptable.**

**Religious Holidays Policy**—Any student missing class quizzes, examinations, or any other class or lab work because of observance of religious holidays shall be given an opportunity during that semester to make up missed work. The make-up will apply to the religious holiday absence only. It shall be the responsibility of the student to notify the instructor within the first 14 calendar days of the course for fall and spring courses (excepting modular courses), or within the first 7 calendar days of the course for summer and modular courses, of his or her intention to participate in religious holidays which do not fall on state holidays or periods of class recess. For additional information, please visit: <http://catalog.unlv.edu/content.php?catoid=6&navoid=531>.

**Transparency in Learning and Teaching**—The University encourages application of the transparency method of constructing assignments for student success. Please see these two links for further information: <https://www.unlv.edu/provost/teachingandlearning>

<https://www.unlv.edu/provost/transparency>

**Tutoring and Coaching**—The Academic Success Center (ASC) provides tutoring, academic success coaching and other academic assistance for all UNLV undergraduate students. For information regarding tutoring subjects, tutoring times, and other ASC programs and services, visit <http://www.unlv.edu/asc> or call [702-895-3177](tel:702-895-3177). The ASC building is located across from the Student Services Complex (SSC). Academic success coaching is located on the second floor of SSC **A** (ASC Coaching Spot). Drop-in tutoring is located on the second floor of the Lied Library and College of Engineering TBE second floor.

**UNLV Writing Center**—One-on-one or small group assistance with writing is available free of charge to UNLV students at the Writing Center, located in CDC-3-301. Although walk-in consulta-

tions are sometimes available, students with appointments will receive priority assistance. Appointments may be made in person or by calling 702-895-3908. The student's Rebel ID Card, a copy of the assignment (if possible), and two copies of any writing to be reviewed are requested for the consultation. More information can be found at: <http://writingcenter.unlv.edu/>.

**Any other class specific information**—(e.g., absences, make-up exams, status reporting, extra credit policies, plagiarism/cheating consequences, policy on electronic devices, specialized department or college tutoring programs, bringing children to class, policy on recording classroom lectures, etc.)