

THE UNIVERSITY OF TEXAS - PAN AMERICAN
Educational Leadership Department
College of Education

Syllabus EDUL 8351.01R (11359)
Introduction to Applied Research Methods
Fall, 2009

Room assignment: MAGC 1.320
Day and time: Tuesdays 7:10 p.m.- 9:55 p.m.
Web site: <http://onlinelearning.utpa.edu/>

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Graduate Catalogue Course Description

This course will include an introduction to research methodology used in historical, case study, survey, descriptive, experimental, correlational and inferential research.

Course Overview

This course is designed to provide graduate students with basic knowledge and skills in quantitative and qualitative educational research. Students will be required to review and critique research articles, write annotated bibliographies and develop a scholarly research proposal. Both descriptive and inferential statistics techniques will be developed. Through step-by-step, hands-on research exercises, students will be able to build competencies in educational research and statistics.

Course Goals

The goals for this course are to help students become competent as both consumers and producers of educational research:

- to understand the nature of educational research and the various research methodologies used by educators and others;
- to become an intelligent consumer of educational research and comprehend the concepts and language of those educators who conduct original research;

- to develop the skills used in the evaluation and analysis of a given piece of research; and
- to increase the likelihood of future use of educational research to guide professional practice.

Course Objectives

By the end of the course, students will be able to demonstrate the following research knowledge and skills:

Selecting a Problem

- select a research problem characterized by both practicality and interest
- state a research problem as the relationship between two or more variables

Reviewing the Literature

- identify literature sources and their characteristics (e.g., ERIC, Psycinfo, Academic Search Complete, other indexes, etc.)
- conduct a literature search, including locating relevant titles, abstracts and primary source documents
- demonstrate the technique of reviewing and abstracting

Constructing Hypotheses

- identify testable hypothesis
- constructing operational definitions of variables

Using Sampling Methodology

- define the population
- conduct random sampling
- establish specifications for stratified random sample
- determine sample size

Constructing Research Design

- identify techniques for the manipulation and control of variables
- identify and describe procedure for observation and measurement
- construct and use questionnaires and interview schedules
- construct experimental design including pre-experimental designs, true experimental design and quasi-experimental design
- identify characteristics of qualitative research, including research problems and questions
- describe qualitative research methodology, including various data sources
- describe procedures for conducting a qualitative study including data analysis and report preparation

Conducting Statistical Analyses

- calculate a mean, median, and standard deviation
- analyze data and report statistical findings using
 - a t-test

- a Pearson product-moment correlational analysis
- a Spearman rank-order correlation, and
- a Chi-square test
- choose a statistical test appropriate for different combinations of variables and different levels of measurement (e.g., ANOVA, MANOVA, multiple regression, ANCOVA, MANCOVA etc.)

Applying to the Institutional Review Board to Gain Permission to Conduct a Study using Human Subjects

- Identifying and discussing ethical issues related to conducting human subject research

Writing Research

- Writing a scholarly research proposal including an introductory section, literature review section and a methods section, which may be further developed for application if students so desire after the course is completed.

Learning Activities

In the course you will be exposed to research processes, starting with the development of a problem, generation of research questions or hypotheses, research design, measurement of variables, data collection, analysis and interpretation of the data, and finally conclusions. The class time, face-to-face meetings and asynchronous on-line activities, will consist of lectures, group discussions, peer critiques, library research, and individual work with the instructor, peers or independently. An attempt will be made to provide as much flexibility as possible taking into account individual differences in learning styles, interests, etc.

Required Texts and Materials

APA (2009). *Publication Manual of the American Psychological Association* (6th ed.). Washington, DC: American Psychological Association.

Gay, L. R., Mills, G. E., & Airaisian, P. (2009). *Educational Research* (9th ed.). Columbus, OH: Pearson/Merrill/Prentice Hall.

Galvan, J. L. (2009). *Writing literature reviews: A guide for students of the social and behavioral sciences* (4th ed.). Glendale, CA: Pycszak Publishing.

To gain access to the website for this course use an internet browser and type the following as you URL <http://onlinelearning.utpa.edu/> then log in using your UTPA username and password. If you have not activated your UTPA e-mail account you may do so in the Academic Services Building.

Recommended Readings

Other required readings will be posted on the website for this course.

General Course Requirements

Disability

If you have documented disability which will make it difficult for you to carry out the work as outlined or if you need special accommodations/assistance due to the

disability, please contact the Office of Services for Persons with Disabilities (OSPD), Emelia Ramirez Schunior Hall, Rm. 100 immediately. Appropriate arrangements/accommodations can be arranged.

Attendance Requirement

Attendance is mandatory. According to university policy you may be dropped from the course if your absence time is excessive. Cumulative tardiness measured in minutes may cause you to be counted as absent. For further information access the UTPA handbook of operating procedures section 5.2.4 (Class Attendance)

<http://www.panam.edu/hop/>

Statements on Student Conduct, Academic Dishonesty, Plagiarism and Copyright Infringement

Classroom and Student Conduct. When students enter The University of Texas-Pan American it is assumed that they have a serious purpose and a sincere interest in their own social and intellectual development. They are expected to learn to cope with problems with intelligence, reasonableness, and consideration for the rights of others; to obey laws and ordinances of the nation, state, and community for which they, as well as the University, are a part. As students prize rights and freedoms for themselves, they are expected to respect the rights and freedoms of others.

Committing an act of academic or scholastic dishonesty. Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts.

a. Cheating involves:

- 1) copying from the test paper of another student, engaging in written, oral, or any other means of communication with another student during a test, or giving aid to or seeking aid from another student during a test;
- 2) possession and/or use during a test of materials which are not authorized by the person giving the test, such as class notes, books, or specifically designed "crib notes;"
- 3) using, obtaining, or attempting to obtain by any means the whole or any part of an unadministered test, test key, homework solution, or computer program;
- 4) collaborating with or seeking aid from another student for an assignment without authority;
- 5) taking an examination for another person, or permitting another person to take an examination of one's self; and
- 6) falsifying research data, laboratory reports, and/or other academic work offered for credit.

b. Plagiarism means the appropriation, buying, receiving as a gift, or obtaining by any means another's work and the unacknowledged submission or incorporation of it in one's own academic work offered for credit.

c. Collusion means the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any provision of the rules on scholastic dishonesty.

For further information access the UTPA handbook of operating procedures section 5.5.1 (Student Conduct) and section 5.5.2 (Student Conduct Code)

Copyright. The basic University of Texas System policy regarding fair use of copyrighted materials including the Rule of Thumb and the four factor fair use test, is available from the UT System at www.utsystem.edu/ogc/intellectualproperty/copypol.htm. Also, for further information access the UTPA handbook of operating procedures section 4.10.1 (Use of copyrighted material)

Cell Phones

As a courtesy to other students and the professor the volume setting on cell phones and beepers must be turned to low in the classroom. During quizzes or tests the phones and beepers must be turned off.

Assignments

All assignments should be scholarly written, typed and submitted on or before the assigned due date. Always save a copy of what you submit.

Develop a Research Problem

Beginning stages

1. Identify a general problem area.
2. Narrow down the general problem area.
3. Look for learning, behavioral or other theories that are related to your research problem.
4. Look in the literature for a problem (look for suggested next steps, look for logical extensions, look for replication).

Characteristics of a researchable problem

5. Must have theoretical or practical value
6. Must be significant--Ask "who cares" about this problem? Why is it important?
7. Must be researchable

Writing the problem statement

8. Identify and define the variables
9. Define possible relationships between or among variables
10. Identify and define the types of subjects you will investigate

Annotated bibliographies

To assist you in the development of your research proposal (your main assignment in this course) you will be required to develop and write annotated bibliographies. The topics of your annotated bibliographies should relate to the research

proposal topic you select. The assignments you submit should contain the assignment heading (Annotated Bibliography #1) centered on the top, followed by your full name and student identification number (not your social security number).

On the line below your identification number write a general statement regarding your research intent. On the next line write the complete reference for the first source (it will be typed using APA format specific for the type of source you are using (book, chapter of book, monograph, periodical, paper presentation, etc.)). Many magazines, newspapers and websites are not considered credible, scholarly, substantial research sources for your literature that you collect. Therefore, you should avoid them unless you can determine their credibility. After the reference you will present a synopsis of the most significant parts of the literature source that you have retrieved. This will consist of just one paragraph. The information should be related to the research topic you select for the course and thus the proposal you will write.

The second source will be developed in the same fashion--complete reference followed by the one-paragraph synopsis. Each annotated bibliography assignment will consist of ten (10) sources (references and abstracts/summaries/synapses) and is not to exceed 10 double spaced pages. You will be held individually accountable for these assignments, i.e., each student will prepare their own annotated bibliographies. Place the bibliographies in a thin ring binder along with a copy of each literature sources. Indicate which index or catalog you retrieved the source as you reference. Based on the information you provide a sample of the sources will be drawn and checked for accuracy. The weighted grade for this assignment consists of content (50%) and APA style (50%).

Reference list

To provide you with an opportunity to fine tune your skills in manuscript writing you will produce a reference list based on the annotated bibliographies you have already completed. The assignment you turn in should contain the assignment title (Reference List) centered on the top followed by your name and student identification number on the line below. On the line below your identification number type the complete reference for the first source using APA format specific for the type of source you are using (book, chapter of book, monograph, periodical, etc.). The reference list must follow APA manuscript format. You will be held individually accountable for this assignment.

Research proposal

As part of the course, you will develop a research proposal of your own choosing (and interest) to include (a) nature of the problem (theory, hypothesis, definitions), (b) review of the literature, (c) design of study (a research plan to deal with sample, experimental procedures, measurement of variables, methods of analysis, (d) test statistics, (e) references, and (f) appendices and (g) preliminary pages. The research proposal must be typed using APA style. Specific components of the proposals will be discussed in class, individual meetings, and depends on the nature of the research question that the student develops. As doctoral students each of you are required to complete a dissertation as a requirement for your degree, therefore, you are encouraged to place a great deal of emphasis on the assignments, since this is an opportunity for you to develop or fine tune your research skills for your dissertation.

Critiques

The critiques of research articles or research instruments will help you in the learning process of critically evaluate published materials. The professor will select the material for you to critique. Group work is an option. In such a case one completed assignment will be submitted per group. The questions that you will address in the critique may also be used as a guide when you develop your research proposal. The critique questions will be available from the website.

Research ethics

Complete “[Human Participant Protections Education for Research Teams](https://www.citiprogram.org/) (Tutorial & Web Certificate)” at the following URL: <https://www.citiprogram.org/> or access <http://www.utpa.edu/>, click on site index, click on s, click on sponsored research, click on Institutional Review Board under the bold heading Compliance. Read the instructions via the link [Instructions for completing Human Subjects Training requirement](#), and then select the link, [Online Human Subjects \(CITI\) Training Website](#) . You are required to create a username and password for this online tutorial. Complete the quizzes after each of the chapters. After the tutorial is completed print the certificate and submit it to the professor. This certificate will be submitted at a later time in the program with your IRB application once you complete your dissertation proposal.

In class exercises-Quizzes

These exercises will measure your ability to create a portion of a research design with a set of information provided to you, and part of the knowledge you have acquired in the course. I may also be used as a diagnostic tool for the instructor to measure the level of understanding of the students regarding the course materials that have been assigned or discussed in the class. The quiz content and occasion will not necessarily be announced in advance. You will be held individually accountable for these exercises or quizzes.

Tests or Exams

The tests will assess an individual's knowledge and skills in designing research. Test 1 will most likely cover the contents of the four first class concepts: literature sources/searches; research problems, questions, hypotheses and operational definitions; research types, and sampling. Test 2 will be comprehensive with the exception of literature sources/searches. In addition to the previous concepts, instrumentation and research design will be included. You will be held individually accountable for these tests.

Note: To help you understand the research concepts covered in this class, review the following: What is a concept? What is a construct? Concepts 1-6 that are part of the course content of this class are listed below.

Concept #1-Types of Research Literature

Discuss the research literature concept and give examples. Incorporate

- (1) the function of the literature review,
- (2) sources for a literature review (types of research sources, primary and secondary sources),

- (3) steps for conducting a literature review,
- (4) computer searches (advantages and disadvantages, descriptors, Boolean logic), and
- (5) guidelines for evaluating and writing the literature review.

Concept #2-Types of Research Methods

Discuss the concepts behind the methods and give examples.

- (1) qualitative methods with an emphasis on historical and case study methods,
- (2) descriptive method (observational vs. survey),
- (3) correlational method,
- (4) causal-comparative or ex post facto method,
- (5) experimental methods, and
- (6) inferential.

Concept #3-Research Problems and Hypotheses

Discuss the concepts behind (1), (2), (3) and (4) and give examples.

- (1) research problems,
- (2) research questions
- (3) hypotheses, and
- (4) operational definitions.

How are some of these concepts interrelated?

Concept #4-Subject Selection

Discuss the sampling concepts (1), (2), and (3) and give examples.

- (1) probability sampling (simple random, stratified, cluster, systematic)
- (2) nonprobability sampling (convenience, purposive, quota)
- (3) sampling in qualitative and quantitative research

Concept #5-Instrumentation

Discuss the concepts and give examples.

- (1) methods of measurement (objective/standardized tests, interviews, questionnaires, observations),
- (2) levels of measurement or scaling levels (nominal, ordinal, interval, ratio),
- (3) validity, and
- (4) reliability

Concept #6-Research Design

Discuss the concepts regarding the strategies to control potential intervening variables in a study (when random sampling cannot be used), and give examples.

- (1) Holding the intervening variables constant.
- (2) Matching the intervening variables.
- (3) Using subjects as their own controls.
- (4) Building the intervening variables as independent variable.
- (5) Statistically controlling the intervening variables.

Other course related assignments, e.g.,

Abstracts-The development of an abstract will help you to perfect your writing skills in terms of clarity and format. You may abstract articles (according to APA guidelines) that you select for your review of the literature for your proposal, articles the professor assigns, or include an abstract of a proposed study. You will be held individually accountable for this assignment.

Library resources-You may be asked to identify professional research journals in your field. Specifically you may be asked to identify how the journal is organized, what the manuscript guidelines state, etc. Group work is an option.

Research concepts-You may be asked to explain a research concept in writing using your own words. In addition you will present your own example to clarify the concept.

Scenarios-Scenarios will aid you in designing research in terms of type of design, sampling, instrumentation, etc. Group work is an option.

Grading

The final grade will be based on the components weighted as follows:

<i>Component</i>	<i>Percentage</i>
Research Proposal	30%
Critique(s), Quizzes, Other course related assignments.	40%
Exams	30%

90-100 = A

80-89 = B

70-79 = C

Due dates and assignments will be listed in the tentative activity calendar.

COURSE CONTENT/OUTLINE

Week	Class discussions/activities	Reading assignments
9/1	Course introduction. Concept 1: Types of research literature, and overview of concept 2: Types of research (GMA chs. 6-19)	Gay, Mills & Airasian (GMA) chs. 1 & 2. APA manual (APA) pp. 215-281.
9/8	Library instruction--meet in library classroom #1-- not confirmed	GMA chs. 5, 6 & 22
9/15	Continue concept 1 and 2.	GMA chs. 7 & 21
9/22	Begin concept 3: Research Problems and Hypotheses	GMA ch. 8
9/29	Continue concept 3.	GMA chs. 9-10
10/6	Concept 4: Sampling	GMA ch. 4
10/13	Continue concept 4.	

10/15	Test 1 (Concepts 1, 2, 3 and 4).	GMA, discussions/notes, etc.
10/20	Catch-up day	
10/27	Concept 5, instrumentation.	GMA ch. 5
11/3	Instrument development	Notes
11/10	Quantitative research	GMA ch. 6-10
11/17	Data analysis for quantitative research	GMA chs. 11-13
11/24	Data analysis for quantitative research	GMA chs. 11-13
12/1	Qualitative research & Mixed Methods	GMA chs. 14-17 & 19
12/8	Data analysis for qualitative research	GMA chs. 18-19
12/15	Test 2 (Concepts 2, 3, 4, 5 and 6)	GMA, discussions/notes, etc.

Tentative Assignment Due Dates

Due	Assignment	Notes
9/1	None	
9/8	List of 10 refereed research journals	
9/15	Annotated bibliography 1	
9/22	Annotated bibliography 2	
9/29	Statement of the Problem and Research Question and Annotated bibliography 3	
10/6	Annotated bibliography 4	
10/13	Need for the Study and Significance of the Study and Annotated bibliography 5	
10/15	Article Critique	
10/20	Research Ethics Assignment	https://www.citiprogram.org/
10/27	Revised RQ, Review of Literature and Reference List	
11/3	Draft of Introduction	
11/10	Research Design, Sampling, and Instrumentation	
11/17	TBA	
11/24	TBA	
12/1	Partial Research Proposal Due	
12/8	TBA	
12/15	None	