

# Problems and Methods in Educational Research

George Mason University, College of Education and Human Development  
Graduate School of Education

Dr. Erin Peters Burton, NBCT

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EDRS 810 001

Class Meeting: Innovation Hall, Room 336, W 4:30-7:10 PM

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## Course Description

This is an advanced course in the interpretation and application of education research methods. Emphasizes comparison of alternative philosophies of research, ways of formulating questions/hypotheses, research plans, and analysis procedures. Students evaluate existing studies and investigate a range of research approaches.

*Prerequisites: Admission to the Ph.D. program or permission of instructor.*

## Course Objectives

Upon successful completion of the course, students should:

- be able to understand what research is, and how it differs from other intellectual and practical activities in education;
- be able to understand the major approaches to educational research, and the implications of the differences between these for doing and evaluating research in education;
- be able to find, understand, evaluate, and apply published research that is relevant to their field;
- be able to design the basic components of small-scale research studies, both quantitative and qualitative, including
  - identifying a research problem to study
  - formulating the purposes of the study
  - developing a conceptual framework for the study
  - generating appropriate research questions
  - planning relevant and feasible methods of sampling, data collection, and analysis
  - anticipating plausible validity threats, and thinking of ways to deal with these
  - dealing appropriately with ethical issues in the research

- be able to write clearly and coherently about the conceptual framework, questions, and methods used in a research study;
- be able to use the writing style described in the Sixth Edition of the *Publication Manual of the American Psychological Association* (APA) for writing term and research papers;
- be able to reflect on their actions and choices and use that reflection to inform practice;
- be able to present written research results clearly and coherently.

**Course Methodology:** This course consists of lectures, large group and electronic discussion, in class activities, and individual/group assignments.

### **Required Texts**

Creswell, J.W. (2008). *Educational Research: Planning, conducting, and evaluating quantitative and qualitative research* (3<sup>rd</sup> ed.). Upper Saddle River, NJ: Pearson Education.

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

There is a class Blackboard site that contains course documents and relevant links. Students are required to download pertinent documents for class. This site is found at <http://courses.gmu.edu>

**Course Requirements:** It is expected that each of you will:

- (1) Read all assigned materials for the course.
- (2) Attend each class session and participate in classroom activities that reflect critical reading of materials.
- (3) Complete the online Mandatory Training for Persons Conducting Research with Human Subjects.\*
- (4) Evaluate and write a review of one quantitative intervention study and one qualitative study.\*
- (5) Complete in class assignments and two HW assignments and submit to professor prior to each class meeting.\*
- (6) Write and submit a complete human subject proposal to match the intervention study method section assignment.\*
- (7) Write two method sections: one quantitative intervention study and one qualitative research study.
- (8) Present one method section to the class.

\*Late assignments will not be accepted by the instructor. If an emergency occurs please notify the instructor in advance.

### **Course Evaluation**

**1. Homework Assignments:** Students will be asked to work individually or in groups of 2-3 students on two homework assignments (all assignments, including homework assignment 1 on APA and homework assignment 2 brief literature review are clearly described on Blackboard).

**2. Human Subjects Online Training:** Students will be asked to complete Mandatory Training for Persons Conducting Research Using Human Subjects. Information is available online: <http://www.gmu.edu/research/ORSP/HumanSubjects.html>. The training takes between two and five hours and can be accessed from: <http://www.citiprogram.org> Copy and paste your completion certificate, then place a copy of certification of training completion on the relevant assignment box Blackboard site and email me when you complete the training.

**3. Human Subjects Proposal:** Students will write a human subjects proposal to accompany a quantitative intervention research method section. The materials are available on the web and the class Black Board site: <http://www.gmu.edu/pubs/osp/humansubjects.html>. Turn in a hard copy and place an electronic version on the relevant assignment box Blackboard site.

**4. Evaluation of Empirical Research Articles:** Students will write a review of one quantitative intervention study and one qualitative study. The critiques should include the following parts:

- purpose
- methods
- results
- critical comments
- your reflections about the article (see Blackboard site for specific instructions).

**5. Method Sections:** Students will write two different method sections replicating and extending previous research studies. Each method section will be written in APA format (see sample paper on pp 41-59 of the APA manual) and contain relevant sections specific to each type of research design. One will be a **quantitative intervention research** study; one will be a **qualitative research** study. Turn in hard copies and place electronic versions on the relevant assignment box Blackboard site.

1. Statement of purpose and research questions, including a statement indicating research you are replicating and extending and a relevant citation for the study.
2. Method (5-6 pages)
  - Participants and setting
  - Materials
  - Data sources (dependent variables) instrumentation (where relevant)
  - Research design
  - Procedures (proposed data collection process)
  - Proposed preliminary data analyses (bonus section)
3. References

**6. Method Section Presentation:** One method section will be presented orally using audio-visual aides (e.g., power point slides) during a ten-minute presentation. Place a copy of the slides on digital black board. Sign up sheets for presentation times will be distributed in class. Sample power point templates will be available.

**7. In Class Assignments, Participation, and Attendance Policy:** Students will be asked to work individually or in groups of 2-3 students in class assignments throughout the semester (all assignments are clearly described on Blackboard). Because of the importance of lecture and discussion to your total learning experience, I wish to encourage you to both attend and participate in class regularly. Attendance, punctuality, preparation, and active contribution to small and large group efforts are essential. These elements of your behavior will reflect the professional attitude implied in the course goals and will account for 10% of your course grade. With reference to the grading scale described later in this syllabus, you will note that this percentage is equivalent to a full letter grade. Students who must miss a class must notify the instructor (preferably in advance) and are responsible for completing all assignments and readings for the next class.

**8. Bring flash drive or other relevant media to class in order to save work completed during class.**

#### **RUBRIC FOR HOMEWORK ASSIGNMENTS**

**Adequate assignment (5 point):** Assignment is thorough, thoughtful, correctly done, and submitted on time.

**Marginal assignment (2.5 point):** Assignment is carelessly prepared, not thoughtful, or incomplete.

**Inadequate assignment (0 points):** Assignment has little or no value, or is not submitted on time.

#### **RUBRIC FOR HUMAN SUBJECT ONLINE TRAINING**

**Pass (10 points)** Successful completion of online BASIC and other relevant components training on time

**No Pass (0 - 6 points)** Unsuccessful completion of online BASIC and other relevant components or late in completing assignment.

#### **RUBRIC FOR HUMAN SUBJECT PROPOSAL**

**Exemplary (9-10 points)** Appropriately written document containing all components, including: protocol contains answers to all questions, clearly written, informed consent forms written in readability and format appropriate for target audience.

**Adequate (7-8 points)** Good overall proposal, but is lacking in one or two of the criteria for an exemplary proposal. Not entirely reflective or thoughtful, or minor writing style or APA format errors may be present.

**Marginal (6-7 points)** Overall, is acceptable but contains one or more significant problems. Contains some useful information, but may have substantial problems with procedures, writing style or APA format, or unclear or inappropriate description of implementation of project.

**Inadequate (<6 points)** Proposal contains substantial problems in important areas such as writing, proposed implementation of intervention, procedures for evaluation of results, or overall thoughtfulness.

### **RUBRIC FOR EVALUATION OF EMPIRICAL RESEARCH ARTICLES**

**Adequate evaluation (5 point):** Evaluation is thorough, thoughtful, correctly done, and submitted on time.

**Marginal evaluation (2.5 point):** Evaluation is carelessly prepared, not thoughtful, or incomplete.

**Inadequate evaluation (0 points):** Evaluation is poorly done and/or is not submitted on time.

### **RUBRIC FOR METHOD SECTIONS**

**Exemplary paper (18-20 points):** Appropriate topic, thorough and thoughtful purpose and research questions with appropriate study cited for replication and extension, appropriate and clearly described research design, participants, materials, data sources, implementation procedures, and careful brief description of data analyses. Good writing style, free of mechanical or stylistic errors, appropriate use of APA format.

**Adequate paper (16-17 points):** Good overall paper, lacking in one or two of the criteria for an exemplary paper. Not entirely reflective or thoughtful, or minor writing style or APA format errors may be present.

**Marginal paper (14-15 points):** Overall, acceptable but with one or more significant problems. Contains some useful information, but may have substantial problems with evaluation, writing style or APA format, or unclear or inappropriate description of implementation of project.

**Inadequate paper (1-13 points):** Paper with substantial problems in important areas such as writing, proposed implementation of intervention, procedures for evaluation of results, or overall thoughtfulness. Contains little or no information of value to field of education.

**Unacceptable/no paper (0 points):** Paper with no value whatsoever relative to the assignment, or no paper turned in at all. May describe a project of no value that was not approved for this assignment.

## **RUBRIC FOR PRESENTATION**

**Exemplary presentation (10 points):** Keeps within the time limits; reflects poise, clarity, knowledge and interest in the content being presented; reflects a high level of preparation; make effective use of overheads, handouts, demonstrations; describes very clearly the treatment(s) under consideration; keeps the audience engaged; provides information of interest and value to audience.

**Adequate presentation (8-9 points):** Good overall presentation, but may be lacking in one or two of the criteria specified in exemplary response. May seem a little less polished or prepared, may be vague in some place, or may fail to completely engage the audience.

**Marginal presentation (6-7 points):** Presentation provides relevant information, but demonstrates only a limited understanding of the topic or project. Style, handouts, or visual aids may be less than adequate.

**Inadequate presentation (1-5 points):** Weak overall presentation that reflects very little knowledge of topic or project. May appear very poorly prepared, or may not have followed directions. Handouts or visual aids may be inadequate or lacking.

**Unacceptable/no presentation (0 points):** Completely unsatisfactory presentation, with no reasonable reference to topic or project; or no presentation made.

## **RUBRIC FOR IN CLASS ASSIGNMENTS, PARTICIPATION, AND ATTENDANCE**

**Exemplary (9-10 points):** The student attends all classes, is on time, is prepared and follows outlined procedures in case of absence; the student actively participates and supports the members of the learning group and the members of the class.

**Adequate (8 points):** The student attends all classes, is on time, is prepared and follows outlined procedures in case of absence; the student makes active contributions to the learning group and class.

**Marginal (7 points):** The student is on time, prepared for class, and participates in group and class discussions. The student attends all classes and if an absence occurs, the procedure outlined in this section of the syllabus is followed.

**Inadequate (6 or less points):** The student is late for class. Absences are not documented by following the procedures outlined in this section of the syllabus. The student is unprepared for class and does not actively participate in discussions. The student may fail to exhibit professional behavior and dispositions. **Excessive absences can result in additional penalties and potential withdrawal from class.**

### Grading Policy

Homework Assignments (2)	10 pts total (5 pts each)
Evaluation of Empirical Research Articles (2)	10 pts total (5 pts each)
Human Subjects Online Training	10 pts
Human Subject Proposal	10 pts
Method Section	40 pts total (20 pts each)
Method Section Presentation	10 pts
In Class Assignments, Participation, and Attendance	10 Pts
<b>TOTAL</b>	<b>100 pts</b>

**Letter grades will be assigned as follows:**

A+	98-100%	A	93-97.49%	A-	90-92.49%	B+	88-89.49%
B	83-87.49%	B-	80-82.49%	C	70-79.49%	F	below 70%

COLLEGE OF EDUCATION AND HUMAN DEVELOPMENT

#### *Student Expectations*

- Students must adhere to the guidelines of the George Mason University Honor Code [See <http://academicintegrity.gmu.edu/honorcode/>].
- Students with disabilities who seek accommodations in a course must be registered with the George Mason University Office of Disability Services (ODS) and inform their instructor, in writing, at the beginning of the semester [See <http://ods.gmu.edu/>].

- Students must follow the university policy for Responsible Use of Computing [See <http://universitypolicy.gmu.edu/1301gen.html>].
- Students are responsible for the content of university communications sent to their George Mason University email account and are required to activate their account and check it regularly. All communication from the university, college, school, and program will be sent to students solely through their Mason email account.
- Students must follow the university policy stating that all sound emitting devices shall be turned off during class unless otherwise authorized by the instructor.
- Students are expected to exhibit professional behaviors and dispositions at all times.

### *Campus Resources*

- The George Mason University Counseling and Psychological Services (CAPS) staff consists of professional counseling and clinical psychologists, social workers, and counselors who offer a wide range of services (e.g., individual and group counseling, workshops and outreach programs) to enhance students' personal experience and academic performance [See <http://caps.gmu.edu/>].
- The George Mason University Writing Center staff provides a variety of resources and services (e.g., tutoring, workshops, writing guides, handbooks) intended to support students as they work to construct and share knowledge through writing [See <http://writingcenter.gmu.edu/>].
- For additional information on the College of Education and Human Development, Graduate School of Education, please visit our website [See <http://gse.gmu.edu/>].



**Tentative Course Organization and Schedule**

DATE	TOPIC	ASSIGNED READING DUE	WORK DUE
1. 1/26	Review syllabus-Introduction to the Field of Educational Research		
2. 2/2	Overview of Educational Research APA Style/Content and Organization of a Manuscript SPSS Overview	Chapter 2 APA Manual	
3. 2/9	Guest Wendy Mann: How to use the relevant data bases effectively	Chapter 4 - Creswell	<b>Homework Assignment #1 APA Paper</b>
4. 2/16	Guest: Sandy Sanford, Compliance Officer, George Mason University Human Subjects Review Board.	Chapter 1 APA Manual	<b>Homework Assignment #2 Brief Literature Review</b> <a href="http://www.citiprogram.org">http://www.citiprogram.org</a> review on line module prior to class <a href="http://www.gmu.edu/pubs/osp/humansubjects.html">http://www.gmu.edu/pubs/osp/humansubjects.html</a> Review GMU policies and procedures prior to class
5. 2/23	Identifying Research Problems; Reviewing the Literature Specifying a Purpose; Research Questions	Chapters 5 & 10 - Creswell	<b>Human Subject Online Training must be completed and certification document added to digital drop box on BB site</b>

6. 3/2	Experimental/Quasi-Experimental, Correlational, Survey Designs, and Single-Subject Design	Chapters 11, 12 & 13 - Creswell Article Horner et al. (2005) on Blackboard	<b>Evaluation of Empirical Research Article #1</b> Bring a group experimental design intervention RESEARCH study to class. Identify the research problem, the literature review, the purpose or research questions, the method section, the data collection procedures, the data analyses and the discussion. Highlight each area by identifying it in the margins.
7. 3/9	Collecting and Analyzing Quantitative Data; Using SPSS	Chapter 6 - Creswell	<b>Draft of Quantitative Research Method Section and matching Human Subject Proposal</b> Bring a survey research article to class. Identify the parts of the article in the margins.
8. 3/16	<b>Spring Break</b>		No Classes
9. 3/23	Interpreting Quantitative Data	Chapter 7 - Creswell	<b>Quantitative Research Method Section and matching Human Subject Proposal</b>
10. 3/30	Grounded Theory, Ethnographic and Narrative Designs	Chapters 14, 15, & 16 - Creswell	<b>Evaluation of Empirical Research Article #2</b> Bring a qualitative research study to class. Identify the research problem, the literature review, the purpose or research questions, the method section, the data collection procedures, the data analyses and the discussion. Highlight each area by identifying it in the margins.
11. 4/6	No class	Chapters 15 & 16 - Creswell	

12. 4/13	Collecting, Analyzing, Interpreting Qualitative Data, and Introduction to NVivo	Chapters 8 & 9 - Creswell	<b>Draft of Qualitative Research Method Section</b>
13. 4/20	Mixed Method and Action Research Designs	Chapters 17 & 18 - Creswell	Optional: see sample templates for presentations on blackboard and post Method Section Presentation to BB for feedback
14. 4/27	Summary and synthesis: What have we learned about educational research methods	Article Slavin, R. (2008) on Blackboard	<b>Qualitative Research Method Section</b>
15. 5/4	Reflections: What have we learned about educational research methods		<b>LAST CLASS - Method Section Presentations</b>
16. 5/11	Complete presentations if necessary Celebrate educational research!!		Celebrate educational research