

George Mason University  
College of Education and Human Development  
Education Research EDRS 590, Sec 001: 3 credits

**Meeting Day/time:** W 7:20-10 p.m.

**Location:** Thompson Hall L018

**PROFESSOR:**

**Name:** Anthony E. Kelly, Ph.D.

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**Office hours:** Wednesdays 2-4 and by appointment

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**Course Description:**

**EDRS 590.** Develops skills, insights, and understanding to perform research, with emphasis on interpreting and applying research results. Critiques research, and uses findings in educational settings. This is an introductory course in the fundamental concepts, principles and methods of educational research. It is a survey course that serves as a foundation for practitioners who have little of no experience in educational research. Students who plan to participate in extensive applied and action educational research are strongly encouraged also to take a course in quantitative and qualitative analysis. EDRS 590 is prerequisite for more advanced research courses in the Education Psychology Master of Science degree.

**Objectives: As a result of this course, the students will:**

- ☐ become literate in the basic concepts, principles, and techniques of educational research
- ☐ acquire basic skills in the analysis and interpretation of research data
- ☐ appreciate the underlying cognitive processes involved in conducting educational research as a form of thinking and problem solving
- ☐ acquire the skills associated with the critical reading and evaluation of the educational research literature
- ☐ engage in collaborative action research

**Description**

Successful attainment of course goals requires the mastery of many competencies. Four significant areas will be assessed through various evaluation methods:

1. **Comprehension.** Students can demonstrate comprehension of the basic concepts related to the methods and analysis of educational research.

2. **Application.** Students can apply appropriate techniques of analysis to specific research problems.
3. **Literacy.** Given a research report, the students are able to classify, interpret, and evaluate educational research reports according to the concepts and principles studied in the course.
4. **Professional Connections.** Students can relate and apply the principles and techniques of educational research to their areas of professional studies.

### **Educational Psychology Program Standards**

Across the many course in the Educational Psychology, a number of standards will be addressed. These standards are noted, below. Those emphasized most strongly in this course are in bold text.

1. Candidates will demonstrate an understanding of principles and theories of learning, cognition, motivation, and development as they apply to a wide variety of contemporary learning contexts.
2. Candidates will use their *knowledge, skills, and dispositions* to apply principles and theories of learning, cognition, motivation, and development to analyze and develop instruction in applied settings.
3. **Candidates will demonstrate an understanding of the basic concepts, principles, techniques, approaches, and ethical issues involved in educational research.**
4. **Candidates will use their knowledge of quantitative and qualitative research methodology to critically read and evaluate quantitative and qualitative research articles.**
5. **Candidates will use their knowledge of quantitative and qualitative research methodology to develop a research proposal and conduct research.**
6. Candidates will demonstrated critical thinking, oral presentation, technological, and writing skills as they are used in the profession. These include:
  - a. **Knowledge and use of APA style**
  - b. **Oral presentations**
  - c. Poster presentations
  - d. **Article abstracts**
  - e. **Research proposals**
  - f. **Literature reviews**
  - g. **Technological skills (including library/reference skills, interactive displays skills, data analysis skills)**

Creswell, J.W. (2012). *Educational Research: Planning, conducting, and evaluating quantitative and qualitative research* (4<sup>rd</sup> ed.). Upper Saddle River, NJ: Pearson Education.

This text has a Companion Website that will be employed in this class:

<http://www.prenhall.com/creswell>

### **Recommended Texts**

American Psychological Association. (2009). *Publication manual of the American Psychological Association*

(6th ed.). Washington, DC: Author.

Green, S.B., & Salkind, N.J. (2011). *Using SPSS for windows and macintosh: Analyzing and understanding data* (6<sup>th</sup> ed.). Upper Saddle River, NJ: Pearson Education.

Tjeerd Plomp & Nienke Nieveen (2008). Introduction to Educational Design Research

[http://www.slo.nl/downloads/2009/Introduction\\_20to\\_20education\\_20design\\_20research.pdf/download](http://www.slo.nl/downloads/2009/Introduction_20to_20education_20design_20research.pdf/download)

### **Course Requirements:**

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

- 1. Online weekly multiple choice tests (8 total):** Students are asked to complete and submit online multiple choice tests on each week's assignment. Go to <http://prenhall.com/creswell> and complete multiple choice tests for each chapter (refer to syllabus for due dates). Email exam results to yourself and me at [akelly100@hotmail.com](mailto:akelly100@hotmail.com) using a text file format (individual).
- 2. Mandatory Training for Persons Conducting Research Using Human Subjects:** Students will be asked to complete Mandatory Training for Persons Conducting Research Using Human Subjects. Information is available online: <http://www.gmu.edu/pubs/osp/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 email me at [akelly100@hotmail.com](mailto:akelly100@hotmail.com) when you complete the training. (individual)
- 3. Completion of Human Subjects Proposals (2 total):** Students will form small teams to write a human subjects proposal to accompany **each of** a quantitative intervention research and a qualitative research methods section. The materials are available on the web: <http://research.gmu.edu/ORSP/HumanSubjects.html> Turn in a hard copy, **signed by each team member**, and email me an electronic version to [akelly100@hotmail.com](mailto:akelly100@hotmail.com).

- 4. Method Sections (2 total):** Students in teams will write two different method sections replicating and extending previous research studies. Each method section will be written in APA format (see sample paper in 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, **signed by each team member**, and email electronic versions to me at [aekelly100@hotmail.com](mailto:aekelly100@hotmail.com)

Quantitative example, which can also guide the qualitative version (also see textbook):

1. Statement of purpose and research questions, including a statement indicating research you are replicating and extending and a relevant citation for the study. (see also APA manual pp. 247-249)
2. Method (5-6 pages)
  - Participants characteristics
  - Sampling procedures, setting
  - Sample size
  - Materials
    - Content for all conditions
    - Method of implementation for all conditions
    - Deliverer
    - Setting
    - Time span, including number of sessions, duration of each session
    - Unit of analysis
  - Measures (Data sources) (dependent variables) instrumentation (where relevant) Procedures (proposed data collection process)
  - Proposed preliminary data analyses (table of research question by data source by proposed data analysis)
3. References

- 5. Article reviews (5 total):** Students will be asked to work in small teams on in class/homework article reviews throughout the semester. When you are requested to find a particular article (e.g., an experimental intervention research study, a survey research study) identify either in the margins of the article or by highlighting within the articles, the relevant parts of the study. For example, identify the following parts: (a) the purpose; (b) the research questions; (c) the research design, including independent and dependent variables when relevant; (d) the participants; (e) the materials; (f) the data sources, outcome measures and/or dependent variables or measures; (g) the research procedures; (h) the data analysis procedures; (i) the results; and (j) implications, if any from the study. **For grading, each team will turn in one annotated article, and a one-page single-spaced critique of the claims of the article (a-j, as appropriate), each signed by each team member.**

**6. Presentations (2 total):** Method sections will be presented orally using audio-visual aids (e.g., power point slides) during ten-minute presentations, each. Place a copy of the slides on digital black board. Sign-up sheets for presentation times will be distributed in class. **Team grades will be assigned.**

**7. Class Participation and Attendance Policy:** 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 17% 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.

**Class participation includes discussing (five individual) homework assignments (see calendar)**

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

### **Course Evaluation**

#### **Rubric for Five Reviewed Articles (10 pts) (team)**

**Adequate assignment (2 point):** Assignment is thorough, thoughtful, correctly done, and submitted on time.

**Marginal assignment (1 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 Eight Online Quizzes (8 pts) (individual)**

**Adequate test (1 point):** Submitted on time; reflects a score of 90% or greater.

**Marginal test (.5 point):** Lower score reflects lack of content knowledge.

**Inadequate test (0 points):** Very low score or not submitted on time.

#### **Rubric for Methods Sections (one qualitative and one quantitative) (20 each) (team)**

**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 Human Subjects Protocol for Each of the Two Method Sections (5 each)**  
**(team)**

**Exemplary (5 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 (3-4 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 (1-2 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 (0 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 Participation and Attendance**

### **Homework assignments (5 total) (individual)**

**Adequate assignment (2 point):** Assignment is thorough, thoughtful, correctly done, and submitted on time.

**Marginal assignment (1 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.

### **Homework discussion and other attendance points**

**Exemplary (7 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 (5-6 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 (4 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 (3 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

Weekly online quizzes (individual) <a href="http://www.prenhall.com/creswell">www.prenhall.com/creswell</a>	8 pts total
Human Subjects on line training completion (individual)	5 pts
Human Subject Proposals for Method Sections (team)	10 pts (5 pts each)
Method Sections (qualitative/quantitative) (team)	40 pts total (20 pts each)
Method Section Presentations (qualitative/quantitative) (team)	10 (5 pts each)
Article Reviews (5) (team)	10 pts
Homework (5) (individual)	10 pts
Discussion of Homework and other Class Participation and Attendance (individual)	7 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%		

## Class activities

### Tentative Course Organization and Schedule

DATE	TOPIC	ASSIGNED READING DUE	WORK DUE
1. 8/29	Review syllabus- Introduction and the Field of Educational Research; what is a claim? What is a warranted claim? What does it mean to observe?	[general introduction to library searching]	Examine various websites we will be accessing: prentice hall web site: <a href="http://www.prenhall.com/creswell">www.prenhall.com/creswell</a> ; human subjects' training site: <a href="http://www.citiprogram.org">http://www.citiprogram.org</a> ; and GMU HSRB site; <a href="http://research.gmu.edu/ORIA/InstitutionalReview.html">http://research.gmu.edu/ORIA/InstitutionalReview.html</a> . <a href="http://research.gmu.edu/ORIA/docs/Human%20Subjects%20Application%20Form.doc">http://research.gmu.edu/ORIA/docs/Human%20Subjects%20Application%20Form.doc</a> – this is the template for later work Download, read and bring to next class an article in the <i>Educational Researcher</i> journal by Kelly and Yin (2007). Review: pp. 31-44. [Homework 1 for next week]
2. 9/5	Conducting Research and Steps in the Research Process	Chapters 1 and 2	Bring a peer reviewed published research <b>article 1</b> 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. Attach critique of article claims.  Discuss <i>Educational Researcher</i> journal by Kelly and Yin (2007). Review: pp. 31-44. [ <b>Homework 1 Due</b> ]
3. 9/12	Reviewing the literature; revisit as necessary Conducting Research and Steps in the Research Process	Chapter 3	Submit online tests for chapters 1, 2 Bring <b>article 1</b> with highlighted sections it in the margins. Compare literature reviews across teams. <b>Submit article 1</b> with attached critique of article's claims [due]. Listen to the documentary, <a href="http://soundportraits.org/on-air/they_shall_take_up_serpents/">http://soundportraits.org/on-air/they_shall_take_up_serpents/</a> [transcript on page] Write a one-page reflection. Bring to next class to discuss with the GMU Human subjects expert. [Homework II for next week]
4 9/19	Guest: 1 <sup>st</sup> hr; Greg Guagnano; Specifying a Purpose; Research Questions; Reporting & Evaluating Research	Human Subjects. Chapters 4-5 Ann Driscoll, CEHD Librarian, 7:20pm	Submit online test for chapter 3. Presentation by a representative, GMU HSRB. <a href="http://www.citiprogram.org">http://www.citiprogram.org</a> review on line module prior to class <a href="http://research.gmu.edu/ORIA/InstitutionalReview.html">http://research.gmu.edu/ORIA/InstitutionalReview.html</a> Review GMU policies and procedures prior to class. <b>[Homework II due]</b>
5. 9/26	Collecting, Analyzing and Interpreting Quantitative Data	Chapter 6	Submit online tests for chapters 4,5 Bring an <b>intervention</b> research study to class ( <b>article 2</b> ). Mandatory Training for Persons Conducting Research Using Human Subjects must be completed and certification document submitted. Listen to <a href="http://thedianerehmsow.org/shows/2012-08-29/algebra-necessary">http://thedianerehmsow.org/shows/2012-08-29/algebra-necessary</a> . [read <a href="http://www.nytimes.com/2012/07/29/opinion/sunday/is-algebra-necessary.html?pagewanted=all">http://www.nytimes.com/2012/07/29/opinion/sunday/is-algebra-necessary.html?pagewanted=all</a> . What claims are being made? [Homework III, next week]

6. 10/3	Using SPSS and Analyzing Quantitative Data; Experimental designs, correlations, survey research	Chapters 10, 11, 12	Submit online test for chapter 6. <b>Submit</b> highlighted <b>article 2</b> with attached critique of article's claims.  Class will be a review chapters 10,11, and 12. Bring a <b>survey</b> research article to class ( <b>article 3</b> ). Identify the parts of the article in the margins. <b>Homework III due.</b>
7. 10/10	No face to face class		Review <a href="http://thedianerehmsow.org/shows/2011-02-02/vaccines-and-autism-story-medicine-science-and-fear">http://thedianerehmsow.org/shows/2011-02-02/vaccines-and-autism-story-medicine-science-and-fear</a>  Write a one-page critique of the claims and methods used; bring to next class. [Homework IV, for next week] Catch up on other work.
8. 10/17	Bring electronic and hard copy versions of your method section and HSRB proposals to class	Chapters 7 & 8 Collecting Analyzing and Interpreting Qualitative Data	Draft of Quantitative Intervention Research Method and matching Human Subject proposal due for peer review; Work on quantitative method and HSRB proposals (due week after Thanksgiving). Bring and discuss your critique of vaccines and autism in teams. Report out. [ <b>Homework IV due</b> ] <b>Submit Article 3 with one-page critique.</b>
10/24	Analyzing and Interpreting Qualitative Research	Chapters 7& 8	<b>Quantitative Research Method and matching Human Subject Proposal (and all consent forms) due</b>  Submit online tests for chapters 7, 8 Bring a <i>qualitative</i> research study to class ( <b>article 4</b> ). 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 <u>identifying it in the margins</u> . Discuss across teams. Critique.
9. 10/31	More examples and work data analyses		<b>Submit</b> highlighted <b>article 4</b> with attached critique of article's claims. For next week, listen, again, to the documentary, [read transcript] <a href="http://soundportraits.org/on-air/they_shall_take_up_serpents/">http://soundportraits.org/on-air/they shall take up serpents/</a> Write a one-page reflection about how you would research this group and activity. Bring to next class. [Homework V, next week]
10. 11/7	Grounded Theory, Ethnographic and Narrative Designs	Chapters 13, 14 & 15	<b>Draft of Qualitative research method and Human Subjects section due for peer review.</b> Discuss "They shall take up serpents" as a source for ethnographic of narrative analysis. [ <b>Homework V due</b> ]
11. 11/14	Mixed Method and Action Research Designs	Chapters 16 & 17	<b>Qualitative research method and human subjects section due.</b> Practice designing and discussing mixed methods. Bring a <i>mixed method</i> research study to class ( <b>article 5</b> ). 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 <u>identifying it in the margins</u> . Discuss across teams. Critique.

12. 11/21	Thanksgiving		
13. 11/28	Review of design-based research Plomb download		Submit highlighted <b>article 5</b> with attached critique of article's claims. Work on final class products, including presentations.
14. 11/31	Method section presentations		Qualitative methods presentations
15. 12/5	Method section presentations part 2		Quantitative methods presentations

#### ACADEMIC INTEGRITY

Mason is an Honor Code university; please see the University Catalog for a full description of the code and the honor committee process. The principle of academic integrity is taken very seriously and violations are treated gravely. What does academic integrity mean in this course? Essentially this: when you are responsible for a task, you will perform that task. When you rely on someone else's work in an aspect of the performance of that task, you will give full credit in the proper, accepted form. Another aspect of academic integrity is the free play of ideas. Vigorous discussion and debate are encouraged in this course, with the firm expectation that all aspects of the class will be conducted with civility and respect for differing ideas, perspectives, and traditions. When in doubt (of any kind) please ask for guidance and clarification.

**MASON EMAIL ACCOUNTS** Students must use their MasonLIVE email account to receive important University information, including messages related to this class. See <http://masonlive.gmu.edu> for more information.

**OFFICE OF DISABILITY SERVICES** If you are a student with a disability and you need academic accommodations, please see me and contact the Office of Disability Services (ODS) at 993-2474. All academic accommodations must be arranged through the ODS. <http://ods.gmu.edu>

#### OTHER USEFUL CAMPUS RESOURCES:

**WRITING CENTER:** A114 Robinson Hall; (703) 993-1200; <http://writingcenter.gmu.edu>  
**UNIVERSITY LIBRARIES** "Ask a Librarian" <http://library.gmu.edu/mudge/IM/IMRef.html>  
**COUNSELING AND PSYCHOLOGICAL SERVICES (CAPS):** (703) 993-2380;  
<http://caps.gmu.edu>

UNIVERSITY POLICIES The University Catalog, <http://catalog.gmu.edu>, is the central resource for university policies affecting student, faculty, and staff conduct in university academic affairs. Other policies are available at <http://universitypolicy.gmu.edu/>. All members of the university community are responsible for knowing and following established policies.

**Statement of Expectations**

The College of Education and Human Development expects that all students abide by the following:

- Commitment to the profession
- Commitment to honoring professional ethical standards
- Commitment to key elements of professional practice
- Commitment to being a member of a learning community
- Commitment to democratic values and social justice

See for details of these 5 expectations: <http://gse.gmu.edu/facultystaffres/profdisp.htm>