

# COURSE SYLLABUS

## EDRS 590.Methods of Educational Research

**Charles L. Thomas, Ph.D.**

**Instructor**

GEORGE MASON UNIVERSITY  
Graduate School of Education  
Fairfax, VA 22030

*Fall 2004*

**Wednesdays, 4:20-7:10**  
**Innovation Hall 317**

**PROFESSOR:**

**Name:** Charles L. Thomas, Ph.D.  
**Office phone:** 703-993-3137  
**Office location:** Robinson 445B  
**Office hours:** Tue. & Thurs., 3:00 – 4:00 and by Appointment  
**Email address:** [cthomas@gmu.edu](mailto:cthomas@gmu.edu)

### **Catalog Course Description**

**590 Education Research (3:3:0).** Helps students develop skills, insights, and understanding basic to performing research, with emphasis on interpretation and application of research results. The course critiques research and uses findings in educational settings.

**Goals and Objectives.** 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.

The four general goals of the course are to enable students to:

- ☐ 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

## *Minimum Competencies*

### Description

Successful attainment of course goals requires the mastery of many competencies. Four significant competency 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.

### Assessment of Competencies

Students will have the opportunity to exhibit their competencies by successful completion of specific learning products. The list below shows which course requirements are associated with each minimum competency. You will note that some competencies are linked to more than one course requirement.

<b>Competency Area #1:</b>	<b>Completion of exercises in the SALM (see below)</b>
<b>Competency Area #2:</b>	<b>Completion of exercises in the SALM</b>
<b>Competency Area #3:</b>	<b>Critical evaluation of research reports</b>
<b>Competency Area #4:</b>	<b>Action Research Project</b>

The following section provides specific information about the course organization and requirements.

## **Description of Class Organization and Course Requirements**

### Course Organization

**Class Activities.** Lecture and whole class discussions are scheduled for the first half of the class period. The second half of the class period will be devoted to small group learning activities.

Whole class discussions will be the prominent learning process during the lecture/discussion segment, accompanied by mini lectures on specific topics. Both spontaneous and focused discussions will be involved. The focused discussions will be supported by specific objectives found in the front of most chapters in the **Gay and Airasian (G&A)** textbook and in the exercises from the ***Student Assignment and Laboratory Manual (SALM)***.

**Learning Resources.** The following resources are available to support student learning:

- A. **Web-Based Self-Assessment.** Prentice-Hall, the publisher of the textbook has a web site that provides a number of resources related to educational research. Among the useful resources are links to important research web sites, Power Point presentations associated with chapters in the textbook, and self-tests. Although taking the web-based tests is optional, you are encouraged to do so. You may access the web-based competency tests by going to: <http://www.prenhall.com/gay>.
  
- B. **Blackboard.** In addition to the web-based competency tests, students will have access to the *Blackboard Course Forum*, an online instructional support platform. Additional web links and documents are available on Blackboard. Students will be automatically enrolled in Blackboard using their GMU usernames.

**Preparation for Class Participation.** You should read the designated textbook chapter(s) prior to class and make a self-assessment of your mastery of the outcomes listed at the beginning of the chapter. The statements of outcomes specify the capabilities you should be able to demonstrate after completion of the chapter. Although not required, completion of the objective-based exercises at the end of each chapter will sharpen your understanding of chapter content as well as enrich classroom discussions. The guided discussions and mini-lectures will focus on these learning outcomes.

**Active Classroom Engagement.** Most of the in-class small group learning activities will be found in the *Student Assignment and Laboratory Manual (SALM)* that should be downloaded from the EDRS Course Folder in *Black Board*. Completion of the learning activities found in the *SALM* will provide evidence of active engagement in classroom learning.

**Performance-Based Assessment.** *There are no paper-and-pencil exams in the course.* Assessment of your attainment of the course objectives will be based on specific products that demonstrate your skills to analyze and evaluate research articles and conduct small (mini) qualitative and quantitative research.:

### **Course Requirements**

Course requirements and their relative weights are listed below.

- A. **Midterm Assessment (20%):** A midterm assessment will be made of students' learning engagement and comprehension of basic concepts in educational research methods. Weekly small group learning assignments are provided in the *Student Assignment and Lab Manual*. These assignments provide study activities and hands-on experiences related to the basic concepts and methods covered in Gay and Airasian. Although the work will be conducted in class in small groups, you will submit the *SALM* individually at midterm (see course calendar) for learning activities related to chapters 1-8 of Gay and Airasian (2003).

**B. Action Research (50%):** An action research must be submitted on the last night of class. The paper will report on a mini-survey that each student will conduct related to this year's research theme (see Appendix B). Specific guidelines are found in Section III of the *SALM*.

**C. Active Engagement in Learning (30%) Two products will be submitted for final assessment of active engagement in learning:**

- a. The *SALM* will be submitted on the night scheduled normally for final exams (20%). The work submitted at this time will include assignments related to chapters 9 – 13.
- b. A brief oral report of your qualitative and quantitative research studies will be given on the night that final exams are scheduled (10%). **An executive summary or outline of the research results should be distributed to the class on the night of the presentation.** A Power Point presentation is optional.

**Evaluation and Grading Policies**

. Copies of the rubrics used to assess students' work are located in the appendix of the *SALM*. Grades will be assigned using the following grading scale:

<b>Letter Grade</b>	<b>Quality Percentage</b>
A+	98.0-100
A	93.5-97.9
A-	91.5-93.4
B+	89.5-91.4
B	83.5-89.4
B-	80.5-83.4
C+	78.5-80.4
C	75.5-78.4
C-	72.5-75.4
D	< 72.5

***Instructional Materials***

**Required Text Book, Readings & Resources**

Darling-Hammond, L. & Youngs, P. (2002). Defining “highly qualified teachers”: What does “scientifically-based research” actually tell us? *Educational Researcher*, 31(9), 13-25.  
Electronic version found at: [http://www.aera.net/pubs/er/pdf/vol31\\_09/AERA310903.pdf](http://www.aera.net/pubs/er/pdf/vol31_09/AERA310903.pdf)

Gay, L. R. and Airasian, P. (2000). *Educational research. Competencies for analysis and application* (7th Ed.). Columbus, OH: Merrill Prentice Hall.

Miller, J.W., McKenna, M.C., & McKenna, B.A. (1998). A comparison of alternatively and

traditionally prepared teachers. *Journal of Teacher Education*, 49(3), 165-176.

Thomas, C.L. (2003). *Student assignment and laboratory manual*. Fairfax, VA: George Mason University.

### **Learning Aids**

Computer disk for lab assignments

Blackboard Resources

### **Recommended Readings**

American Psychological Association. (1994). *Publications manual of the American Psychological Association* (5th ed.). Washington, DC: Author.

Ingersoll, R. (1999). The problem of under qualified teachers in American secondary schools.

*Educational Researcher*, 28, 26-37. Electronic version found at:

<http://www.era.net/pubs/er/arts/28-02/ingsoll02.htm>

No Child Left Behind Act of 2001, Pub L. No. 107-110.

National Research Council. (2002). *Scientific research in education*. R.J. Shavelson & M.J. Fier (Eds), Committee on Scientific Principles for Educational Research. Washington, DC: National Academy Press.

U. S. Department of Education. (2002). *Meeting the highly qualified teachers challenge: The Secretary's annual report on teacher quality*. Washington, DC: U.S. Department of Education, Office of Postsecondary Education, Office of Policy, Planning and Innovation.

Slavin, R.E. (2000). **Evidence-based education policies: Transforming educational practice and research**. *Educational Researcher*, 31(7), 15-21.

Walsh, K. (2001). **Teacher education reconsidered: Stumbling for quality**. Baltimore, MD: Abdell Foundation. Found at [http://www.abell.org/pubsitems/ed\\_cert\\_1101.pdf](http://www.abell.org/pubsitems/ed_cert_1101.pdf)

Wenglinsky, H. (2000). *How teaching matters: Bringing the classroom back into discussion of teacher quality*. Princeton, NJ: Educational Testing Service.

Wolcott, H. F. Ethnographic research in education. In R. M. Jaeger (Ed.), *Complementary methods for research in education* (1988). Washington, DC: American Education Research Association. pp. 187-212.

**APPENDIX A**  
**SPRING 2004 CLASS CALENDAR**  
**EDRS 590 Section 003**  
**Thursday: 4:30-7:10 P.M.**

<u>Class</u>	<u>Date</u>	<u>Activity/Lecture/Readings</u>
1	Sept 1	<i>ORIENTATION TO COURSE AND INTRODUCTION TO EDUCATIONAL RESEARCH</i> <ul style="list-style-type: none"><li>• <b>Whole Class:</b> <u>Acquaintances &amp; Orientation</u></li><li>• <b>Mini-Lecture:</b> <i>Ways of Knowing &amp; Rationale of Qualitative and Quantitative Methods</i></li><li>• <b><u>Preparation for Next Class:</u></b><ul style="list-style-type: none"><li>○ Read Gay and Airasian (<b>G&amp;A</b>) Chapters 1-3</li><li>○ SALM Exercises 1,2,&amp;3</li></ul></li></ul>
2	Sept 8	<i>SELECTING, DEFINING, AND RESEARCHING THE PROBLEM</i> <ul style="list-style-type: none"><li>• <b>Mini-Lecture:</b> <i>The Language &amp; Basic Concepts of Research Methods</i></li><li>• <b>Small Group:</b> <i>Discussion of SALM Exercises</i></li><li>• <b><u>Preparation for Next Class:</u></b><ul style="list-style-type: none"><li>○ Read G&amp;A, Chapter 4</li><li>○ SALM Exercises 4A &amp; 4B</li></ul></li></ul>
3	Sept 15	<i>SAMPLING METHODS &amp; THE ACTION RESEARCH PROJECT</i> <ul style="list-style-type: none"><li>• <b>Mini-Lecture:</b> <i>Sampling Methods in Educational Research</i></li><li>• <b>Small Group:</b> <i>Discussion of SALM Exercises</i></li><li>• <b><u>Preparation for Next Class:</u></b><ul style="list-style-type: none"><li>○ Read G&amp;A, Chapter 5</li><li>○ SALM Exercise 5</li></ul></li></ul>
4	Sept 22	<i>INSTRUMENTATION</i> <ul style="list-style-type: none"><li>• <b>Mini-Lecture:</b> <i>Concepts in Measurement &amp; Types of Instruments</i></li><li>• <b>Small Group:</b> <i>Discussion of SALM Exercises</i></li><li>• <b><u>Preparation for Next Class:</u></b><ul style="list-style-type: none"><li>○ Read Chapters 6</li><li>○ SALM Exercise 6</li></ul></li></ul>
5	Sept 29	<i>QUALITATIVE RESEARCH METHODS I: GENERAL CHARACTERISTICS</i> <ul style="list-style-type: none"><li>• <b>Mini-Lecture:</b> <i>Distinctions Among Qualitative Methods</i></li><li>• <b>Small Group:</b> <i>Discussion of SALM Exercise 6</i></li><li>• <b><u>Preparation for Next Class:</u></b><ul style="list-style-type: none"><li>○ Read G&amp;A, Chapter 9</li></ul></li></ul>

<u>CLASS</u>	<u>DATE</u>	<u>ACTIVITY/LECTURE/READINGS</u>
6	Oct. 6	<p><b>Tentative Scheduled for Library Orientation/Research (no regular class if confirmed)</b></p> <ul style="list-style-type: none"> <li>• <i>Library Follow-up: SALM Exercise 9</i></li> <li>• <b><u>Preparation for Next Class:</u></b> <ul style="list-style-type: none"> <li>○ Read G&amp;A, Chapters 7&amp;8 (Give Special Attention to Chapter tables and examples)</li> <li>○ SALM Exercises 7 &amp; 8</li> </ul> </li> </ul>
7	Oct. 13	<p><b>QUALITATIVE METHODS II: DATA COLLECTION AND ANALYSIS</b></p> <ul style="list-style-type: none"> <li>• <b>Mini-Lecture:</b> <i>Qualitative Descriptive Research Methods &amp; Analysis</i></li> <li>• <b>Small Group:</b> <i>Discussion of SALM Exercises 7, 8, &amp; 9</i></li> <li>• <b><u>Preparation for Next Class:</u></b> <ul style="list-style-type: none"> <li>○ Prepare to submit SALM Exercises 1-8</li> <li>○ Read G&amp;A, Chapter 18</li> <li>○ SALM Exercise 10</li> </ul> </li> </ul>
8	Oct. 20	<p><b>MIDTERM ASSESSMENT: SUBMIT SALM, CHAPTERS 1-8</b></p> <ul style="list-style-type: none"> <li>• <b>Mini Lecture:</b> <i>Evaluating Qualitative Research Articles</i></li> <li>• <b>Small Group:</b> <i>Discussion of SALM Exercise</i></li> <li>• <b><u>Preparation for Next Class:</u></b> <ul style="list-style-type: none"> <li>○ Read G&amp;A, Chapter 14</li> <li>○ One formatted 3.25 computer disk</li> </ul> </li> </ul>
9	Oct. 27	<b>INDEPENDENT RESEARCH DAY</b>
10	Nov. 3	<p><b>DESCRIPTIVE STATISTICAL ANALYSIS</b></p> <ul style="list-style-type: none"> <li>○ <b>Mini-lecture:</b> <i>Descriptive Statistical Analysis</i></li> <li>○ <b>Small Group:</b> <i>Computer Laboratory Activities</i></li> <li>○ <b><u>Preparation for Next Class:</u></b> <ul style="list-style-type: none"> <li>• Read G&amp;A, Chapter 15</li> </ul> </li> </ul>
11	Nov. 10	<p><b>INFERENCE STATISTICAL ANALYSES (ISA)</b></p> <ul style="list-style-type: none"> <li>• <b>Mini-Lecture:</b> <i>Hypothesis Testing and ISA</i></li> <li>• <b>Small Group:</b> <i>Computer Laboratory Activities</i></li> <li>• <b><u>Preparation for Next Class:</u></b> <ul style="list-style-type: none"> <li>○ Read G&amp;A Chapter 10</li> <li>○ SALM Exercises 11</li> </ul> </li> </ul>
12	Nov. 17	<p><b>SURVEY METHODS</b></p> <ul style="list-style-type: none"> <li>• <b>Mini-Lecture:</b> <i>Survey Methods</i></li> <li>• <b>Small Group:</b> <i>Discussion of SALM Exercises</i></li> <li>• <b><u>Preparation for Next Class:</u></b> <ul style="list-style-type: none"> <li>○ Read G&amp;A, Chapters 11 &amp; 12</li> <li>○ SALM Exercise 12</li> </ul> </li> </ul>

<u>Class</u>	<u>Date</u>	<u>Activity/Lecture/Readings</u>
13	Dec. 1	<p><b><i>CORRELATIONAL VS. CAUSAL COMPARATIVE DESIGNS</i></b></p> <ul style="list-style-type: none"><li>• <b>Mini-Lecture:</b> <i>Correlational vs. Causal Comparative Methods</i> <i>Uses of Correlational Methods</i> <i>Interpretation of Correlation Coefficients</i></li><li>• <b>Group:</b> <i>Discussion of SALM Exercises</i></li><li>• <b><u>Preparation for Next Class:</u></b><ul style="list-style-type: none"><li>○ Read G&amp;A, Chapter 13</li><li>○ Read the Greida and Hannafin article at end of chapter 13. (Circle/highlight all unfamiliar terms.)</li><li>○ SALM Exercise 13</li></ul></li></ul>
14	Dec. 8	<p><b><i>EXPERIMENTAL RESEARCH METHODS</i></b></p> <ul style="list-style-type: none"><li>• <b>Mini-Lecture:</b> <i>Threats to Casual Inferences &amp; Experimental Research Methods; Reading Quantitative Research Articles</i></li><li>• <b>Small Group:</b> <i>Discussion of SALM Exercise</i></li><li>• <b><u>Preparation for Next Class:</u></b><ul style="list-style-type: none"><li>○ Prepare Presentation and Report Due Next Week</li></ul></li></ul>
15	Dec. 15	<p><b>MAKE PRESENTATION &amp; SUBMIT ACTION RESEARCH REPORT SALM, CHAPTERS 9 – 13 DUE</b></p>

## APPENDIX B

# **2003 Research Theme: The Role of Research Evidence in the Justification of the Quality of Public Education and Teacher Competence**

American education is under tremendous pressure to reform. Using the *Nations and Risk* as a point of reference, the federal government has since become more proactive in promoting the improvement in our nation's schools and leading the chorus of critics in criticizing the quality of our public school educators. Vouchers, charter schools, alternative credentialing procedures for teachers, high stakes testing, standards-based education are only a few of the policies and procedures that have become prominent initiatives in the name of accountability and education reform. The *No Child Left Behind Act of 2001* (NCLB) reauthorizes the *Elementary and Secondary Education Act of 1965*. This new law incorporates nearly all of the major proposals that President Bush presented in his reform plan of the same name: Local educational agencies (LEAs) that are federal grantees must develop standards in reading and math, and develop assessments that are linked to those standards for students in grades 3-8. LEAS must use Title I funds for activities *that scientifically based research* suggests will be most effective in helping all students meet the State's standards.

The public schools are not the only object of criticism. The preparation of the nation's teachers in our colleges and universities also is seen as part of the problem. In July, 2002, the U. S. Secretary of Education Paige presented his report, *Meeting the Highly Qualified Teachers Challenge*. He was highly critical of the manner in which teachers are prepared for the nation's schools. Darling-Hammond and Peter Youngs (2002) identified four arguments under-girding the Secretary's position:

- Teacher certification and teacher education are not related to teacher effectiveness
- Verbal ability and subject matter knowledge are the most important factors associated with teacher effectiveness
- Teachers completing education programs are academically weak and are under prepared for teaching
- Alternative certification programs produce academically strong teacher candidates who are more effective than teachers coming through the traditional pathway

The Secretary Paige's accusation purportedly is based on evidence from social science research. Moreover, the NCLB requirements have raised the level of importance of science-based evidence for the adoption of school policies and procedures. The increased reliance on research in the educational reform movement requires that students of education must become more astute in the consumption of research in their area of teaching. Educators can no longer view educational research as an unnecessary burden of study or irrelevant to their work. In this age of accountability it is likely that evidence (empirical)-based policies will be part of the landscape in educational reform, and educational research has the opportunity to play a major role (Slavin,

Therefore, the theme adopted for the year 2003 in EDRS 590 is the role of educational research in providing evidence of the quality of K-12 public education, postsecondary teacher education, and teacher competence. Student research during the spring and fall semesters was guided by these general questions:

- What does educational research say about the policies, procedures and practices that are used in *your* professional domain (e.g., classroom teacher, counselor, administrator, etc.)?
- What is the quality of the research evidence that informs your practice?
- Where the empirical evidence reveals weaknesses, what changes should be made in your professional area?
- What does educational research say about the quality of preparedness of teachers in *your* specific professional area?
- Does empirical evidence agree with Secretary Paige's assertion that teachers who enter the profession through alternative certification programs in *your* area are more effective in the classroom than those coming through the traditional path?
- What is the *quality* of the research on teacher competence?

Students conducted mini surveys that focused on how informed educators were regarding NCLB. The areas of inquiry included the attitudes of educators and non-educators related to specific aspects of the NCLB legislation, assessment, school choice, and teacher preparation.

### References

- Darling-Hammond, L. & Youngs, P. (2002). Defining "highly qualified teachers": What does "scientifically-based research" actually tell us? *Educational Researcher*, 31(9), 13-25.
- No Child Left Behind Act of 2001, Pub L. No. 107-110.
- Slavin, R.E. (2000). Evidence-based education policies: Transforming educational practice and research. *Educational Researcher*, 31(7), 15-21.
- U. S. Department of Education. (2002). *Meeting the highly qualified teachers challenge: The Secretary's annual report on teacher quality*. Washington, DC: U.S. Department of Education, Office of Postsecondary Education, Office of Policy, Planning and Innovation.

**OFFICE HOURS: SPRING 2004**

**Monday: 5:30 – 6:30 P.M.**

**Tuesday & Thursday: 3:00 – 4:00 P.M.**

**OFFICE: ROBINSON A337**

**PHONE: 993-3137**

**E-MAIL: [cthomas@gmu.edu](mailto:cthomas@gmu.edu)**

**GRAD SUPPORT OFFICE: 993-2020**

**FAX: 993-2013**

**E-MAIL: CTHOMAS@GMU.EDU**

**Students who make appointments during the scheduled open office hours receive priority. If you find that I am not available, please leave a note on the office door indicating the best time and means for contacting you and I will contact you as soon as possible.**