CI500-001: Introduction to Research Methods in Education  
Department of Curriculum and Instruction, Southern Illinois University-Carbondale  
Fall 2014 (Thursdays, 4-6:30pm)

Instructor: Grant Miller, Ph.D.  
Wham Hall, 323K  
Phone: (618) 453-4250

Office hours: T&W: 10am-noon,  
R: 1-3, and by appt.  
e-mail: gmiller@siu.edu

Course Goals and Objectives*

This course will provide students opportunities to develop:

1. **Content Mastery**: foundational knowledge of educational research, research concepts and principles, specific methods for conducting and critically reading research and concepts for assessing the design and (mis)use of educational assessment.

2. **Content Skills**: acquisition of skills to critique research and educational assessments.

Required skills include:

   a. recognize and define a research problem  
   b. review literature related to a problem/issue  
   c. critique the most appropriate research design for investigating or testing a specific question or hypothesis  
   d. summarize and critique research studies published in journals  
   e. compare and contrast measurement and assessment systems  
   f. critique reliability and validity of assessment systems  
   g. identify and critique course-related concepts in contemporary media

General Information

**Academic Integrity**: The pursuit of knowledge can proceed only when scholars take responsibility and receive credit for their work. Recognition of individual contributions to knowledge and of the intellectual property of others builds trust within the University and encourages the sharing of ideas that is essential to scholarship. Similarly, the educational process requires that individuals present their own ideas and insights for evaluation, critique, and eventual reformulation. Presentation of others' work as one's own is not only intellectual dishonesty, but also undermines the educational process.

Plagiarism, that is, failure to properly acknowledge sources, written or electronic, used for verbatim quotations or ideas, is a violation of academic integrity and will result as an F for the assignment. Each student is responsible for learning and using proper methods of paraphrasing and footnoting, quotation, and other forms of citation, to ensure that the original author, speaker, illustrator, or source of the material used is clearly acknowledged.

**Students with Disabilities**: If you have a disability, you are entitled by law to equal access to University programs and facilities. The most relevant laws are Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990. Under these laws you cannot be discriminated against on the basis
of your disability. In the University setting, this often means that alterations must be made in the classroom or in testing procedures. **Advance notice and appropriate documentation are required for accommodations.** All disclosures will be kept confidential.

**Canceling Class:** In the event of inclement weather or other unforeseeable event, I will decide whether to hold class by 4pm of that day. I will e-mail you at that time if we are not having class.

**Important Notice to All SIUC Students (Emergency Procedures):** Southern Illinois University Carbondale is committed to providing a safe and healthy environment for study and work. Because some health and safety circumstances are beyond our control, we ask that you become familiar with the SIUC Emergency Response Plan and Building Emergency Response Team (BERT) program. Emergency response information is available on posters in buildings on campus, available on BERT’s website at [www.bert.siu.edu](http://www.bert.siu.edu) and the Department of Safety’s website [www.dps.siu.edu](http://www.dps.siu.edu) (disaster drop-down), and in the Emergency Response Guidelines pamphlet. Know how to respond to each type of emergency.

Instructors will provide guidance and direction to students in the classroom in the event of an emergency affecting your location. It is important that you follow these instructions and stay with your instructor during an evacuation or sheltering emergency. The Building Emergency Response Team (BERT) will provide assistance to your instructor in evacuating the building or sheltering within the facility.

**Course Requirements**

1) **Summary and Critique of Quantitative Research Article (40 points, individual):** For this assignment you will locate a quantitative primary research article cited by CAST to support the UDL Guidelines. Using the guidelines provided, you will summarize the research problem, the type of research, the sample, the treatment and the major findings. You will then critique the study’s quality, including discussion of external validity, instrument validity and reliability, and internal validity.

2) **Literature Review Presentation (40 points, groups):** With a partner, you will identify, evaluate, corroborate, and synthesize research related to a topic you select from the research identified by CAST to support the UDL Guidelines.

3) **Mid-Term Exam and Final Exams (80 points, individual):** These exams will consist of questions that require short constructed answers. They will require application of knowledge and skills learned in CI 500 to new research articles. There will be 40 points on each exam. Your exam grade will be a composite of the two.

4) **Class Participation/Attendance (20 points, individual):** Class participation will include the following factors:
   - **Attendance**, including being on time and staying for the duration of the class meeting time. Unexcused absences/tardiness will result in points deducted. Email or call me in advance to notify me of an absence and to determine whether that absence will be excused. In the event of absence, stay in touch with other members of the Group Research Project and make sure your portion of tasks get to class even if you cannot.
   - **Active participation** in small and full group activities, preparation for those activities as needed outside of class, and completion of quizzes, if necessary.
   - **Written assignment responses** of high quality and completed before class begins when they are due.

5) **Concepts Journal (20 points, Individual).** Over the course of the semester, you will learn about several concepts related to research methods. You will need to identify the uses of five (5) concepts in the media and/or popular culture. Your journal will include 5 entries, each of which include: 1) concept identified, 2) description of source where the concept appeared, 3) how the concept is used in the source, and 4) your critique of how appropriately the source’s creator uses the concept.
Grading Scale

200 pts. possible: A (200-184); B (183-168); C (167-152); D (151-136); F (135 or below)

Course Readings


Course Overview and Readings

1) Thursday, August 21: Introduction to Course

2) Thursday, August 28: Educational Research and Standards
   *Reading:* 1) Hiebert – Relationships between Research and the NCTM Standards
   *Preparation for Class Discussion: Research and the Common Core Standards*
   How are the Common Core Standards presented in terms of research? Do authors violate what we should or should not expect from research about education or standards? To answer these questions, identify a description (e.g., newspaper article, journal article, online briefing) of the Common Core Standards that also mentions research. Answer the questions above and be prepared to share your findings and a copy of the article or description you critiqued in class.

3) Thursday, September 4: Variables and Hypotheses; Review of the Literature
   *Readings:* 1) See D2L for Online Sources and 2) Beyer – What Research Tells Us about Teaching Thinking Skills
   *Preparation for In-Class Activity: Identifying a Study from CAST*
   Prior to class, identify an area of interest related to the UDL Guidelines from CAST. You will have an opportunity to search for these articles in class.

4) Thursday, September 11: Instrumentation and Sampling
   *Readings:* 1) See D2L for Online Sources
5) Thursday, September 18: Ethics in Research  
**Readings:** 1) See D2L for written assignment  
**Written Assignment: Ethics in Research**  
Complete the ethics in research assignment and bring a hard copy of your work to class. Instructions and readings are available in Desire 2 Learn.

6) Thursday, September 25: Validity and Reliability  
**Readings:** 1) Campbell – Factors Relevant to the Validity of Experiments in Social Settings, and 2) See D2L for Additional Online Sources

7) Thursday, October 2: Introduction to Descriptive and Inferential Statistics  
**Readings:** 1) Sartori – The Bell Curve and 2) See D2L for Additional Online Sources

8) Thursday, October 9: Standardized Testing – A “Short” History in the U.S.  
**Readings:** 1) Smith – Testing the Theory in Testing Policy and 2) Stiggins – Assessment Crisis  
**Due: Draft for Quantitative Research Article Critique**  
*To get formative feedback on your Summary and Critique of Primary Quantitative Research, email a draft for detailing your article’s 1) research problem, 2) sample, 3) instrumentation, 4) treatment and/or procedures, 5) external validity, and 6) instrument validity and reliability before class.*

9) Thursday, October 16: Midterm Exam

10) Thursday, October 23: IQ's Troubled Past, Present, and Future  
**Readings:** 1a) Lockshin – The Impact of Evolutional Theory, OR 1b) Ryan & Stoskopf – Public and Catholic School Responses to IQ Testing, OR 1c) Nettlebeck & Wilson – Intelligence and IQ: What Teachers Should Know

11) Thursday, October 30: Just How Rigged are Standardized Tests in the U.S.?  
**Readings:** 1) Wineburg – Crazy for History and 2) Romagnano – The Myth of Objectivity  
**Preparation for Class Discussion:**  
The authors in today’s readings critique standardized tests in the humanities and the sciences. How do they compare? To what extent are these concerns similar? Are these concerns just as different as the disciplines these standardized tests are designed to assess? Why?  
**Due: Final Draft for Quantitative Research Article Critique**

12) Thursday, November 6: International Approaches to Educational Assessment  
**Readings:** 1) Black & Wiliam – Large-Scale Assessment Systems

13) Thursday, November 13: Common Core and 21st Century Skills  
**Readings:** 1) Baker – Learning and Assessment, 2) Doorey: Coming Soon: A New Generation of Assessments, and 3) VanSledright – Can Assessment Improve Learning?

14) Thursday, November 20: Assessing Cognitive Readiness  
**Readings:** 1) Herman – The Development of Assessment of Cognitive Readiness and 2) Sternberg – A Model for Instruction and Assessment  
**Due: Concepts Journal**

Thursday, November 27 – Thanksgiving Break

15) Thursday, December 4: Literature Review Presentations

Thursday, December 11 – Final Exam, 4:00-5:45pm

**Please Note:** To better meet the needs of this course, this syllabus is subject to minor changes. If any changes are made to course readings or assignments, you will be notified as soon as possible.