

A - Course prefix, number and title: LT 785 Research Methods in Educational Technology

Credit Hours: 3

B - University: Dakota State University

C - Academic Term/year: Spring 2009

D - Course meeting time and location: Internet class

E - Instructor contact information

Instructor: Dr. Bob Warren

Address: Kennedy 114

Phone: Office: 256-5177; Home: 605-256-2413; Cell: 605-270-1821

e-mail: bob.warren@dsu.edu

web page: <http://homepages.dsu.edu/warrenb>

F - Approved course description: Designed to develop the skills of the practitioner to be a consumer

of computer-based learning research. The course reviews basic and applied computer-based education

research design and the interpretation of statistics.

G - Prerequisites:

Previous Courses/experience: Baccalaureate degree with classroom teaching experience.

Technology Skills: Word processing, drawing, spreadsheet, and statistical software, Internet Browsing

H - Required textbook(s) and other supplementary materials:

Wallen, N. & Frankel, J. (2001). *Educational Research: A Guide to the process*

Lawrence Erlbaum Associates: Mahwah, NJ ISBN: 0-8058-3280-7.

*****All students are expected to purchase or have handy for assignments:**

Publication Manual of the American Psychological Association (5th ed.). (2001).

Washington, DC: American Psychological Association.

I - Course Delivery: Students proceed through a course of study as directed and assisted by computer technology. Mastery is based on achieving competencies and benchmarks.

J - Classroom Policies

Class Make-up policy: All assignments and quizzes must be completed on/or before the date and time specified in each assignment posted on the classes Desire2Learn dropbox assignment pages. No work can be made-up without the instructor's permission.

Academic Honesty Statement: Cheating and other forms of academic dishonesty run contrary to the purpose of higher education and will not be tolerated in this course. All forms of academic dishonesty will result in a grade of zero for that assignment/work. Please be advised that, when the instructor suspects plagiarism, the Internet and other standard means of plagiarism detection will be used to resolve the instructor's concerns. DSU's policy on academic

integrity (DSU Policy 04-05-00) is available online at <http://www.departments.dsu.edu/hr/newsite/policies/040500.htm>

Freedom in Learning: Students are responsible for learning the content of any course of study in which they are enrolled. Under Board of Regents and University policy, student academic performance shall be evaluated solely on an academic basis and students should be free to take reasoned exception to the data or views offered in any course of study. It has always been the policy of Dakota State University to allow students to appeal the decisions of faculty, administrative, and staff members and the decisions of institutional committees. Students who believe that an academic evaluation is unrelated to academic standards but is related instead to judgment of their personal opinion or conduct should contact the dean of the college which offers the course to initiate a review. (See DSU Policy 03-30-00 for additional information on the academic appeal process.)

ADA Statement: If there is any student in this course who, due to a disability, has need for non-standard note-taking, test taking, technology, or other accommodations, please contact Dakota State University's ADA coordinator, Keith Bundy, by email at keith.bundy@dsu.edu or by phone at 605-256-5121, as soon as possible. Accommodations cannot be given until they have been applied for, and the need confirmed. Further information, along with the form to request accommodations can be found at http://www.departments.dsu.edu/disability_services/.

K – Course Goals:

Mission - To develop the skills as an effective consumer of educational technology research to improve student learning.

Core Objectives

Be able to:

1. Locate existing sources of research in educational technology.
2. Read and understand existing research in educational technology.
3. Critically analyze research projects and proposals.
4. Describe and discuss the various methodologies used in educational research.
5. Develop proposals for, and conduct research that is practical in the professional role of the graduate student.

The above objects meet NCATE, INTASC, DSU and ISTE standard #1 Knowledge, Skill and Dispositions.

This course meets the following MSCET program goals:

Be proficient in finding, evaluating and using current educational research to support continuous improvement in their profession.

Demonstrate proficiency in teaching and assessing others in the use of computers and related technologies in a variety of educational settings.
Additional objectives: As determined by student need.

L – Evaluation Procedures:

Weekly Quizzes – (approximately 30% of course)

Weekly Assignments and Final Project – (approximately 70% of course)

A = 90-100%; **B** = 80-89%; **C** = 70-79%; **F** = below 70%

M - Professional Education Courses Only

N – Graduate Nature of the Course:

O - Tentative Course Outline

1. The Research Question
2. Variables and Hypotheses
3. Descriptive Statistics
4. Reviewing the literature
5. Instrumentation
6. Types of Measurement Data
7. Measures of Variability
8. APA Bibliographic Style
9. Samples and Populations
10. Correlation
11. Validity and Reliability
12. Internal Validity
13. Types of Sampling
14. Data Analysis
15. The t-test
16. Controlling Threats to Internal Validity
17. Critiquing Research Reports
18. Which Statistic to use?
19. The Chi-Square test
20. Survey Research
21. Correlational Research
22. Types of Hypotheses
23. The causal Argument
24. Experimental Research
25. Causal-Comparative Research

P - Selected bibliography/research and resources:

Clandinn, D. Jean. (2000). *Narrative inquiry: Experience and story in qualitative research*. Jossey-Bass: San Francisco, CA.

- Gall, Meredith D., Borg, Walter R., Gall, Joyce P. (1992). *Applying Educational Research : A Practical Guide*. Addison-Wesley: Menlow Park, CA.
- Gall, Meredith D., Borg, Walter R., Gall, Joyce P. (1996) *Educational Research: An Introduction*. Addison-Wesley: Menlo Park, CA.
- Hittleman, Daniel R., Simon, Alan J., Simon, Alan R.. (1996) *Interpreting Educational Research : An Introduction for Consumers of Research*. Merrill: Columbus, OH.
- Jonassen, David H. (Editor), (1996). *Handbook of Research on Educational Communications and Technology : A Project of the Association for Educational Communications and Technology*. MacMillan: New York.
- Lageman, Ellen Condiffe. (1999). *Issues in education research: Problems & possibilities*. Jossey-Bass: San Francisco, CA.
- Merriam, Sharan. (1998). *Qualitative research and case study applications in Education*. Jossey-Bass: San Francisco, CA.
- Norman, Geoffrey. (1986). *PDQ Statistics*. B.C. Decker: Philadelphia, PA.
- Patten, Mildred L. (1998). *Questionnaire research: A practical guide*. Pyrczak Publishing: Los Angeles, CA.
- Pellegrino, James W. , Jones, Lee R. and Mitchell, Karen J. (Editors). (1998). *Grading the nation's report card : evaluating NAEP and transforming the assessment of educational progress*. Committee on the Evaluation of National and State Assessments of Educational Progress, Board on Testing and Assessment, Commission on Behavioral and Social Sciences and Education, National Research Council. National Academy Press: Washington, D.C.

Internet Links to Educational Technology Research

- American Educational Research Association, (<http://www.aera.net/>)
- American Psychological Association (<http://www.apa.org/>)
- Educational Research Journal (<http://www1.fed.cuhk.edu.hk/en/erj/erjindex.htm>)
- Educational Technology: Research and Practice (http://www.netc.org/web_mod/ed_tech/)
- International Society for Technology in Education (<http://www.iste.org/>)
- Internet Connections: Education Research (<http://www.mcrel.org/connect/researc.html>)
- UNESCO Education Statisticis (<http://mirror-us.unesco.org/education/educprog/stat>)