EDIT 590: Educational Research in Technology

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Course Description

This introductory course provides learning activities situated in the authentic practices of scientific research. Reading, discussion, and project assignments are provided for each step of the research process related to research design (problem definition, literature review, conceptual framework, and method) and in the production of an authentic artifact, the research proposal. The final (individual) project includes a field study component for (structured) practice in the data collection and analysis that is typical for research proposals that test the chosen design.

Using a cognitive apprenticeship framework for instruction, each stage of research is modeled and then practiced as a sub-skill, such as performing research literature reviews initially through an online bibliographic database search and article review.

Skills are also modeled through demonstration and discussion of instructor's prior or current research, such as action research conducted as formative and summative research evaluations performed during instructional and information design work.

Structured project assignments are assigned to learning teams (collaborative action research plan) and individuals (research proposal and field study) that "scaffold" authentic research activity so that the objectives are appropriate to their capabilities, needs, and preferences (e.g., finding and reviewing peer-reviewed research articles in scholarly journals associated with their academic and professional background).

As learners begin to demonstrate an initial level of understanding and skill performance, they are encouraged to articulate, elaborate, and reflect on their acquired skills by peer-teaching and evaluating in structured demonstration and discussion activities that emphasize their evolving community of (research) practice.

Nature of Course Delivery

This 14-week course will be conducted entirely online in the GMU Blackboard Web-based Course Management System.

Learner Outcomes

This course is designed to:

- Promote development of a mental model of the research process in which basic facts and concepts are situated in a systematic manner that promotes academic and professional application.
- Help learners understand and distinguish qualitative versus quantitative methods of data collection and analysis with a focus on qualitative case study and quantitative survey as well as their application in action research.
- Promote development of problem-solving skills in research for graduate students prior to their thesis or dissertation as well as for instructional design professionals seeking to gather and interpret data through empirical studies.

Required Textbook and Materials

Gay, L.R., Mills, G.E., and Airasian, P. (2009). *Educational Research. Competencies For Analysis and Application* (9th Edition.). New Jersey: Merrill Publishing Co.

Suggested reference

American Psychological Association. (2001). *Publications Manual of the American Psychological Association* (5th ed). Washington, D.C.: Author.

Coursework Assessment Plan

Assignment Type	Assignment Point Distribution	Maximum Points
Weekly Project Assignment Responses	20 points maximum for each of 14 weeks based on all assignment criteria addressed	280
Posting Participation	10 points maximum for each of 14 weeks of posting project assignment responses within the week in which they are assigned	140
Team Project Assignment	180 points maximum for team project work based on all assignment criteria addressed and team peer evaluations on an individual basis.	180
Individual Final Project Assignment	400 points maximum for final project submission based on all assignment criteria addressed	400
Maximum Total Points	Divide total by 10 to determine final grade where: A + = 97 – 100; A = 93 – 96; A- = 90 – 92; B+ = 86 – 89; B = 83 – 85; B- = 80 – 82; C = 70 – 79; F= 0 – 69	1000

Assignment Submission Policy

Weekly Project Assignment responses should be posted during the week in which they are assigned, but allowance will be made without late penalty in this area of assessment for missing responses that are posted before the end of the semester. There is a participation assessment that is based on submission of assignment responses within the week in which they are assigned (see below). As assessment of this portion of your grade will only be performed at the end of the semester, each student should monitor and manage their posting assignment responses to determine their performance. The posting deadline on the last day of each course week is 11:59PM ET. The timeliness of posts is determined by the time/date stamping provided by the online course system.

Project Posting Participation Any weekly project assignment responses in the course conference area that are not completed within the week in which it is assigned will be subject to a corresponding reduction of the participation component of the assessment for that week. The posting deadline on the last day of each course week is 11:59PM ET. The timeliness of posts is determined by the time/date stamping provided by the online course system.

Final Project Assignment (team or individual) submissions are allowed anytime prior to the stated deadline, but earlier posting is highly recommended (for peer feedback and/or ensuring meeting deadline). Any submitted final project assignments (team or individual) after stated deadline in course schedule will automatically receive a zero score.

Incompletes, Make-ups, and Extra Credit work - Refer to the GMU policy on incomplete grades. There is no "make-up" work allowed beyond what is covered under the assignment assessment policies described above. No extra credit work is allowed.

Course Schedule

The course schedule is based on weekly online course activities and related reading in the required textbook and final team and individual project work, submission, and review. Besides the reading assignments listed here, refer to the individual and team assignment descriptions in the online course for details.

Week	Dates		*Topics/Assignments*
1	Aug. 31–Sept. 6		**Introduction to Research and the Course** Read Chapter 1 Post responses to this week's assignments.
2	Sept. 7–13		**Action Research and The Problem Statement** Read Chapter 20 Post responses to this week's assignments.
3	Sept. 14 - 20		**Reviewing the Literature** Read Chapter 3 Post responses to this week's assignments.
4	Sept. 21–27		**Selecting a Research Topic and Evaluating Research Reports** Read Chapters 2 and 22 Post responses to this week's assignments.
5	Sept. 28–Oct. 4		**Plan Preparation, Sampling, and Measurement** Read Chapters 4, 5, and 6 Post responses to this week's assignments.
6	Oct. 5– 11		**Quantitative Methods** Read Chapters 7, 8, and 9 Post responses to this week's assignments.
7	Oct. 12–18		**Quantitative Methods** Read Chapters 10 and 11 Post responses to this week's assignments..
8	Oct. 19–25		**Qualitative Methods** Read Chapters 14 and 15 Post responses to this week's assignments.
9	Oct. 26–Nov. 1		**Qualitative Methods** Read Chapters 16 and 17 Post responses to this week's assignments.
10	Nov. 2–8		**Quantitative Analysis** Read Chapters 12 and 13 Post responses to this week's assignments.

11	Nov. 9–15		**Qualitative Analysis** Read Chapter 18 Post responses to this week's assignments.
12	Nov. 16–22 Thanks-giving recess: November 25-29		**Preparing a Research Report** Read Chapter 21 Post responses to this week's assignments.
13	Nov. 30–Dec. 6		**Mixed Methods Research** Read Chapter 19 Post responses to this week's assignments.
14	Dec. 7–12 (short last week)		**Course and Project Review** Team Final Projects Due Individual Final Projects Due

COLLEGE OF EDUCATION AND HUMAN DEVELOPMENT STATEMENT OF EXPECTATIONS:

All students must abide by the following:

- Students are expected to exhibit professional behavior and dispositions. See gse.gmu.edu for a listing of these dispositions.
- Students must follow the guidelines of the University Honor Code. See http://www.gmu.edu/catalog/apolicies/#TOC_H12 for the full honor code.
- Students must agree to abide by the university policy for Responsible Use of Computing. See http://mail.gmu.edu and click on Responsible Use of Computing at the bottom of the screen.
- Students with disabilities who seek accommodations in a course must be registered with the GMU Disability Resource Center (DRC) and inform the instructor, in writing, at the beginning of the semester. See www.gmu.edu/student/drc or call 703-993-2474 to access the DRC.