
EDUC 6040

Applied Research Methods

Fall Semester 2018

Instructor: Amanda Hagman, MS
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Class Time: Thursdays 3:30 – 6:15
Class Location: Engineering Lab 248

Course Goal: To become a good consumer of research

Course Objectives:

1. Know the elements of different research methods and when methods are best used
 - IDEA objective I.1 Basic Cognitive Background, Gaining factual knowledge
2. Synthesize research on a topic to identify common themes and holes
 - IDEA objective V.9 Learning how to find and use resources for answering questions and solving problems
3. Perceive research ‘red flags’ when consuming literature
 - IDEA objective II.3 Application of Learning, Learning to apply course materials to improve rational thinking, problem solving, and decisions

Contact Policy: Contact me! I am here as a resource to you. You will get the quickest response through email. I will typically respond within a day (during the week). I cannot guarantee a response over the weekend, but I will get back to you on Monday.

Canvas: We use Canvas in this course. Please check it daily.

Required Reading Materials: Each week there is required reading. Check Canvas for weekly reading assignments that need to be completed PRIOR to coming to class.

Catalog Course Description: This course is designed to introduce graduate students to the information and skills needed to read and critique research in education, psychology, and other social sciences. Students will develop a basic understanding of research perspectives, methods, statistical analysis, and quantitative and qualitative research designs.

Course Content: Reading assignments will be given each week, and students will be expected to read them thoroughly and prepared to discuss the material contained in the textbook and other course material during our class discussion. Students will also have a variety of practical hands-on experiences and activities designed to master the course material. The course objectives will be accomplished through course readings and discussion, writing assignments, quizzes, and exams.

Course Objectives: The objectives for PSY/EDUC 6040 have been agreed upon by the department heads in the College of Education. The student will be able to do the following:

1. Use the reference area of the library, interlibrary loan services, and computerized databases to locate relevant articles and documents on a selected topic.
2. Find public data sources
2. Use APA guidelines to appropriately cite and reference relevant articles in written work.
3. Describe the relationships among hypotheses, measures, and analysis procedures in a research proposal.
4. Define the major threats to the internal and external validity of an experiment.
5. Critically read published empirical studies to:
 - a. Identify authors' research questions or objectives.
 - b. Specify authors' conclusions.
 - c. Identify the major threats to internal validity and discuss the validity of the authors' conclusions in light of those threats.
 - d. Suggest improvements in the design of critiqued studies to remedy the perceived threats to internal or external validity.
6. Understand research ethics and protection of human subjects
7. Define target and accessible populations and explain the strengths and weaknesses of different sampling approaches and important considerations such as sample size, sampling bias, and external validity in sampling decisions.
8. Define and assess independent as well as dependent variables.
9. Understand the issues related to collecting research data using tests, questionnaires, interviews, observation, and content analyses.
10. Understand test validity and reliability and the importance of those concepts when conducting research.
11. Understand the differences among nominal, ordinal, interval, and ratio data and how these differences influence the selection of appropriate statistical procedures.
12. Understand the differences between descriptive and inferential statistics.
13. Understand the difference between statistical and practical significance including effect size
14. Understand approaches to take when analyzing qualitative data including computer software that can support qualitative analysis
15. Describe the methods and tools of different research designs:
 - a. Experimental and quasi-experimental research
 - b. Causal-comparative and correlational research
 - c. Survey research
 - d. Single-case research
 - e. Case study research
 - f. Ethnographic research
 - g. Phenomenological research
 - h. Grounded theory research
 - i. Participatory action research
 - j. Historical-narrative research
 - k. Mixed methods research
16. Understand strategies for writing research results in a way that improves its utilization

Week	Reading Assignments	Course Work	Due
1		Discuss course expectations Introductions Research Ethics and Protection of Subjects Library Tour	
2		Discuss Elements of Research Articles Discuss Literature Review Describe Literature Review/Library Assignment	
3		Experimental Design Sampling Measurements Finding Public Data Describe Public Data Assignments	Lit Review/Library Assignment
4		Threats to Validity Threats to Validity Activity Introduction to Common Methodologies Describe (Mastery) Methodology Assignments Select Mastery Topics Time to work	Public Data Assignment
5		Experimental & Quasi-Experimental Case Study Design activity	Quiz: Experimental Design & Case Study
6		Causal-Comparative & Correlational Historical Narrative Design activity	Quiz: Causal-Comparative, Correlational, & Historical Narrative
7		Ethnographic Research Survey Research Design activity	Quiz: Ethnographic & Survey
8		Grounded Theory Single-Case Research Design activity	Quiz: Grounded & Single-Case
9		Phenomenological Research Design activity	Quiz: Phenomenological & Historical-Narrative
10		Participatory Research Design activity	Quiz: Participatory & Case Study
11		Mixed Method Research Mid-Term Design activity	Mid-Term
12		Statistical Considerations for Quantitative Data APA guidelines and activity	
13		Statistical Considerations for Qualitative Data Writing research to facilitate utilization	
14		Presentations	
15		Review for Final Exam Help with Final Paper	Final Paper
16			Final Exam

Grading and Evaluation: There are 500 points possible in this course. Your grade for this course will be calculated as detailed below.

Percentage	Grade	Evaluation Activity	Points
93 - 100	A	Quizzes (6 total quizzes)	120
90 - 92.99	A-	Mastery Project	
87 - 89.99	B+	Participation in Mastery Design Activities	60
83 - 86.99	B	Final Paper	50
80 - 82.99	B-	Final Presentation	50
77 - 79.99	C+	Other Assignments	
73 - 76.99	C	Lit Review/Library Search Assignment	30
70 - 72.99	C-	Public Data Assignment	30
67 - 69.99	D+	Citi Training (Human Subjects Research)	20
63 - 66.99	D	Examinations	
0 - 62.99	F	Mid-term Exam	50
		Final Exam	50
		Total Points	500

Quizzes: Quizzes will cover reading assignments. You will need to read the assigned pages in a way that allows you to clearly articulate the main concepts of the method being studied. Quizzes consist of 5 – 10 questions. The majority of the questions will open response, with some multiple-choice questions. There are two goals of the quizzes: (1) to gain knowledge on methodologies and (2) to encourage reading so that you will be able to meaningfully participate in discussions and mastery activities presented in class.

Article Reviews:

Mastery Project: Students will select two methodologies that align with their research interests.

1. Lead the lecture on the day that corresponds to your selected methodology
2. Lead the mastery activity on the day that corresponds to your selected methodology. These activities will be done in small groups. The goal is to help students recognize the elements of the methodology in context, while identifying strengths, weaknesses, and

Exams: The two exams will consist of multiple choice, true/false, fill-in-the-blank, open-ended and computational question items. The Mid-term Exam will cover the assigned readings and course work from the first half of the semester. The Final Exam will cover the assigned readings and course work from the second half of the semester. Both exams are open-book, timed (90 minutes), worth 50 points each, and will be made available on Canvas for you to complete. You will be given a two week window to complete the exam.

In order to take a make-up exam, you will need to inform me well in advance (except in the case of a properly documented, university-approved, emergency) and make necessary arrangements to take the exam late. If arrangements are not made prior to the exam due date, you will not be able to complete the exam.

Other Assignments:

1. **Library Search Assignment.** Computer-assisted literature searches have greatly facilitated the retrieval of literature for doing research reviews. Students will complete the library assignment sheet, which requires them to use some of the most important techniques they learn during the guided tour with the library subject guide assigned to the course.

- a. Submission: Please submit via Canvas as a Word .doc or .docx.
 - b. Evaluation: 25 points
- 2. Experimental Validity Assignment.** Students will complete a worksheet in which they identify the most compelling threats to internal validity in a number of research situations.
- a. Submission: Please submit via Canvas as a Word .doc or .docx.
 - b. Evaluation: 25 points.
- 3. Article Critique #1-5.** The ability to critique and critically evaluate the adequacy of completed research is an essential skill. During the semester, students will do a short written critique of five different research articles.
- a. Submission: Please submit via Canvas as a Word .doc or .docx
 - b. Evaluation: 20 points for each critique

Late Assignments will receive a 10% deduction. The deadline for late work is 2 weeks before dead week. This policy is designed to incentivize prompt completion of assignment. However, I am more interested in the completion of the work to demonstrate your knowledge than on prompt submissions. Please contact me prior to a late submission, if possible.

Canvas Learning Modules: Learning Modules have been created for each day of class and are accessible to students on Canvas. Each Learning Module will include lecture presentations, assignments, links to the discussion and quiz/assessment, and other useful course information. Please check the Learning Module at the beginning of each week, as it will help guide you through the course material and assignments.

Students with Disabilities: Qualified students with disabilities may be eligible for reasonable accommodations. If a student has a disability that will likely require some accommodation by the instructor, the student must contact the instructor and document the disability through the Disability Resource Center (797-2444 voice, 797-0740 TTY, or toll free at 1-800-259-2966; Room 101 of the University Inn), preferably during the first week of the course. Any request for special consideration relating to attendance, pedagogy, taking of examinations, etc., must be discussed with and approved by the instructor. In cooperation with the Disability Resource Center, course materials can be provided in alternative format, large print, audio, diskette, or Braille."

Academic Honesty: Students are expected to maintain the highest standards of academic honesty. Cheating, falsification of information or plagiarism will not be tolerated. Standards of the University concerning academic honesty are described in the Student Policy Handbook, Article V, Section 3, paragraphs a, b, and c. It is particularly important to emphasize that the written paper for the course must be the student's own work. Plagiarism, using the work of another student as your own, or cheating will be grounds for a failing grade in the course. If you have any questions about how much collaborative work is permissible for any part of the class, speak with the professor.