Instructor(s): Michael M. Behrmann, Ed.D.
Class Time: Thursday, 7:20pm
Place: A206 Robinson Hall
Office Hours: By Appointment
Course Description:

This course will provide student’s with the knowledge to conduct research utilizing single subject design and single case study design with emphasis on causal inference. This advanced seminar will provide students with an understanding of the salient features as well as the advantages and disadvantages of these research methodologies. Students will participate in critiquing and analyzing published research utilizing these methodologies. Opportunities will be provided for students to apply these methodologies to research questions related to current student interests.

Prerequisite: EDRS 810,811,812 or equivalent. EDSE 620 or equivalent recommended.

Required Texts:


Supplemental Texts:


Supplemental Reading:

EDRS 823 CD


Course Requirements:

This course will be individualized to the topical research interests of participating students.

Assignments 1& 2 (30% each):
Students will be required to develop a brief for a research plan for both SSD and SCD research. Each outline will include:

- a one page abstract,
- an annotated bibliography of no less than 10 research studies representing a review of literature for the topic selected
- a 2-3 paragraph description of why they selected the research methodology
- Research Question-description of why the questions is” applied, etc. ala the Baer, Wolf, & Risley article
- description of participants, setting
- dependent and independent variables OR description of data and data sources
- experimental design OR case study methodology
- data collection procedures, e.g. observation procedures, reliability,
- data analysis /results
- expected outcomes

Assignment 3 (40%)

Students are required to complete a full research grant proposal utilizing either a single subject design model or a single case study design model. Proposals should be prepared according to the US Department of Education’s “Student Initiated Research “ (CFDA 84.324B) or “Field Initiated Research” (CFDA 84.324C) requirements, including meeting page limitations, budget information, etc. See: http://www.ed.gov/funding.html or http://www.ed.gov/GrantApps/#84.324B or http://www.ed.gov/GrantApps/#84.324C. Students will also be required to present research proposal to class for discussion using PowerPoint or similar presentation tool.

GSE Syllabus Statements of Expectations:

The Graduate School of Education (GSE) expects that all students 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.

Session 1     Course Introduction
9/2     Differences between single subject design and single case study research and other
methodologies
- Distinguishing features of Single Case Study Research
- Distinguishing features of Single Subject research
- Identify and explain the features of single-subject research as stated in the seminal article by Baer, Wolf, & Risley: (a) applied, (b) behavioral, (c) analytic, (d) technological, (e) conceptual, (f) effective, and (g) capable of producing results that are generalizable;
- Applications of these methodologies: Why choose one over the other
- Mixed Design Research
- Ethics in Research

**Session 2**  
**Research Proposal Writing**  
9/9
- Reading the technical requirements
- Abstract: building your case
- Background and Significance
- Plan of Operation
  - Research Design/ Methods
  - Timelines
  - Personnel responsibilities
- Budget
  - Budget forms (overview)
  - Line Item Budget
  - Budget Justification
- Key Personnel
- Qualifications of Applicant
- Appendices

**Session 3**  
**Understand the salient features of single subject research.**  
9/16
- Features of a behavioral approach to research that distinguish it from other approaches to studying human behavior;
- Types of research questions that lend themselves to a single subject design approach.
- Formulating research questions

**Session 4**  
**Understand appropriate application of single subject design to address research questions.**  
9/23
- Setting
- Selection of Participants
- Selection of Behaviors to study: Dependent Variables
- Defining Behaviors

**Session 5**  
**Selecting Interventions**  
9/30
- Identifying interventions with positive components
- Advantages of using several interventions as a package to produce an immediate effect

**Session 6**  
**Experimental designs.**  
10/7
- Identify the various types of experimental designs, e.g., ABA, ABAB, multiple baseline, multiple probe, alternating treatments
- Identify applications of designs and how designs establish experimental control
- State how each design establishes a functional relationship;
- Describe the strengths and weaknesses of each of the major designs;
- Select designs appropriate for addressing given research questions.
- Describe procedures for establishing social validity;
- Describe and apply criteria for evaluating the presence of treatment effects

Session 7  Analyzing and Displaying Data to Show Experimental Control and Functional Relationships
10/14
- Plotting graphs
- Analyzing data and establishing functional relationships
- Design Selection implications for establishing relationships
- Drawing conclusions

Session 8  Understand the Salient Features of Single Case Study Design
10/21
- Research as an investigative process
- Building a conceptual framework
- Data through words versus numbers
- The need for data reduction and display
- Drawing conclusions
- Limitations of generalizability

Session 9  Understand appropriate application of single case study design to address research questions.
10/28
- Building a conceptual framework
- Identify and formulate general research questions that lend themselves to a case study design approach.
- Refining research questions during data collection: An iterative process
- Identifying and setting the boundaries of data collection

Session 10  Understand measurement and observation procedures used in case study research.
11/4
- Identify the different types of data collection procedures: e.g., observation, interview, survey, document review
- Describe advantages and/or disadvantages of different types of measurement procedure for gathering information.
- Describe advantages and or disadvantages of different types of data collection and analysis based on research questions and setting: e.g., coding protocols, pattern coding, contact summaries, site analyses, etc
- Describe procedures to limit observer bias and other threats to internal validity.

Session 11  Understand case study research designs.
11/11
- Identify the various types of research designs.
- Identify applications of designs and how designs establish relationships between data such as:
  - Context charts
- Checklist matrices
- Role order matrices
- Time order matrices
- Event listings
- Causal networks
- Describe the strengths and weaknesses of each of the major designs;
- Select designs appropriate for addressing given research questions.
- Describe procedures for establishing social validity;
- Design and develop single case study according to research protocol

Session 12  
**Drawing and Verifying Conclusions**

11/18
- Tactics for generating meaning such as:
  - Counting
  - Noting patterns and themes
  - Seeing Plausibility
  - Clustering
  - Making metaphors
  - Splitting variables
  - Building a logical chain of evidence
- Tactics for testing or confirming findings such as:
  - Checking for representativeness
  - Triangulating
  - Checking for researcher effects
  - Weighting evidence
  - Making contrasts/comparisons
  - Using extreme cases
  - Checking the meaning of outliers
  - Getting informant feedback

Session 13  
**Generalizing from Single Subject and Single Case Studies**

12/2
- Statistical Generalization vs. Generalization by Theory

Session 14  
**Presentations**

12/9

*Research Grant Proposal Due*

Session 15  
**Optional Presentation Day**