

**GEORGE MASON UNIVERSITY
COLLEGE OF EDUCATION AND HUMAN DEVELOPMENT
SPECIAL EDUCATION**

**EDRS 823, Section 001:
ADVANCED RESEARCH METHODS IN SINGLE SUBJECT & SINGLE CASE DESIGN
Fall 2010**

Class days: Tuesdays
Class time: 4:30-7:10PM
Location: Robinson B, Room 124

Instructor: Anna Evmenova, Ph.D.
Office hours: T and TR 2pm-4pm; Finley Building, Room 201B
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Course Description

823 Advanced Research Methods in Single Subject/Case Design (3:3:0) *Prerequisites: EDRS 810, 811, and 812.* Prepares students to conduct research using single subject design and single case study design. Provides understanding of the salient features as well as the advantages and disadvantages of these research methodologies. Students critique and analyze published research using these methodologies. Provides opportunities to apply these methodologies to research questions related to current student interests.

Student Outcomes

By the end of the course students will be able to:

1. Discuss the basic concepts, strengths and limitations of single subject research designs
2. Discuss Interobserver Agreement/Reliability, Validity, Visual Analysis, and Statistical tests involving single subject research designs.
3. Evaluate previous research that has employed single subject research methodology.
4. Design and implement a research study using single subject methodology.

Required Texts

Gast, D. L. (2010). *Single subject research methodology in behavioral sciences*. New York, NY: Routledge.

An article readings list provided below and posted on Blackboard will correspond to the syllabus schedule.

Recommended Texts

Alberto, P. A., & Troutman, A. C. (2008). *Applied behavior analysis for teachers* (8th ed.). Upper Saddle River, NJ: Prentice Hall.

Kazdin, A. E. (1982). *Single case research designs: Methods for clinical and applied settings*. New York: Oxford University Press.

Kennedy, C. H. (2005). *Single case designs for educational research*. Boston, MA: Allyn and Bacon.

Todman, J., & Dugard, P. (2001). *Single-case and small-n experimental designs: A practical guide to randomization tests*. Mahwah, NJ: Lawrence Erlbaum Associates.

GSE Blackboard will be used to post important information for this course (and others) and in completing some course assignments. The following is how you will access the **Blackboard-GSE Login Page**:

Enter the URL <http://courses.gmu.edu> into your browser location field.

Enter your **Username** (your GMU email username) & **Password** (your GMU email password).

Click **Login**.

Find EDRS 823 and click on it.

Nature of Course Delivery

Learning activities include the following:

1. Class lecture, discussion and possible guest speaker.
2. Videotapes and other relevant media presentations.
3. Study and independent library research.
4. Online resources and applications with relevant hardware and software.
5. Application activities, including in-class evaluation of research and materials.
6. Written research study using the American Psychological Association format.

Course Expectations for Students

Students are expected to (a) attend all classes during the course, (b) **arrive on time**, (c) stay for the duration of the class time (d) bring books to each class and (e) complete Blackboard discussion boards and other assignments. All out-of class assignments are to be completed prior to the beginning of class on the date that they are due.

Please notify the instructor by email in advance if you will not be able to attend class, and arrange for a classmate to pick up handouts/provide notes. If you are absent, the due date does not change and students are responsible to make sure that all assignments are handed in on time.

Late assignments will result in a reduction in points.

In-depth reading, study, and work on course requirements require outside class time. Students are expected to allot approximately three hours for class study and preparation for *each* credit hour weekly in addition to papers and assignments.

Use APA 6th Edition guidelines for all course assignments.

<http://writingcenter.gmu.edu/resources-template.php?id=4> This link from the GMU Writing Center provides access to APA online style guides, additional guides for writing papers using APA style and the citation machine.

<http://owl.english.purdue.edu/owl/section/2/10/> This link is connected to an overview, workshop, as well as formatting and guides to the new edition of the APA style. This useful tool is for getting acquainted with APA essentials.

<http://www.apastyle.org/apa-style-help.aspx> This link provides an APA Style Help from the American Psychological Association.

We will use person-first language in our class discussions and written assignments (and ideally in our professional practice). Please refer to “Guidelines for Reporting and Writing about People with Disabilities” <http://www.apastyle.org/manual/related/guidelines-reporting-and-writing.pdf>

Graduate School of Education Statements of Expectations

The Graduate School of Education (GSE) expects that all students abide by the following:

- Students are expected to demonstrate professional behavior and dispositions. See www.gse.gmu.edu for a listing of these professional dispositions.
- Students must follow the guidelines of the University Honor Code. The GMU Honor Code defines student conduct to promote a stronger sense of mutual responsibility, respect, trust, and fairness among all members of the George Mason University community. The honor code deals specifically with cheating and attempted cheating, plagiarism, lying, and stealing. See <http://academicintegrity.gmu.edu/honorcode/> for the full honor code.
- Students must agree to abide by the university policy for Responsible Use of Computing. See <http://universitypolicy.gmu.edu/1301gen.html> for more information.
- 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.

Course Assignments & Point Distribution

CLASS PARTICIPATION: 10 Points

Due to the importance of lecture and discussion to your total learning experience, you must both attend and participate in class regularly. Attendance, punctuality, preparation, and active contribution are essential.

MINIMAL	GOOD	OUTSTANDING
The student is late for class. Absences are not documented by following the procedures outlined in the syllabus. The student is not prepared for class and does not actively participate in discussions. May fail to exhibit professional behavior and dispositions. Excessive absences can result in additional penalties - 7 or less pts	The student is on time, prepared for class, and participates in group and class discussions. The student attends most classes and if an absence occurs, the procedure outlined in the syllabus is followed - 8-9pts	The student attends all classes, is on time, and is prepared. The student actively participates and supports the members of the class - 10pts

BLACKBOARD ACTIVITIES: 10 Points

Students will be required to participate in 5 class blackboard discussions (2 points each) for topics throughout the course. Students will be expected to provide their opinions as well as post feedback and comments based on opinions of other students. The tentative list of blackboard activities as follows:

Blackboard 1: Discover information about one of the following figures: Paul Broca, Hermann Ebbinghaus, Ivan Pavlov, Adolphe Quetelet, Ronald Aylmer Fisher, David Barlow, Michel Hersen, Alan Kazdin, Gordon Allport, and Burrhis Frederick Skinner. Write 1-3 paragraphs about their contributions to the field of single subject design. All citations should be noted.

Blackboard 2: Read the article by Lo & Cartledge (2006) and discuss your impressions regarding behavioral assessment with single subject design. Note the level of detail in the description of each section.

Blackboard 3: Please describe the behaviors you are planning to measure in your project. Provide operationalized definitions for those behaviors. Discuss what dimensions you will use to measure the behavior(s). Design a draft of the recording system that you may want to use in your project. Please post by Tuesday morning. We will discuss your recording systems in class.

Blackboard 4: Develop research questions appropriate for the single subject research study based on the topic you have chosen for your final project. Provide operationalized definitions for all the terms used in the research questions. Post the questions on the blackboard by Friday. Between Saturday and Tuesday provide feedback to your classmates on their research questions. Please discuss why you think their questions are suited or not suited for single subject research study.

Blackboard 5: Conduct a mini meta-analysis study using the coding rubric provided in class. Find 3-5 single-subject research articles on your topic (possibly use the same articles in the literature review section of your final paper), code them using the rubric,

use one of the methods for calculating effect sizes for single-subject experimental designs discussed in class. Please post a brief description of your meta-analysis methodology, results, as well as your impressions regarding meta-analysis as method for indentifying evidence-based practices.

SHORT PRESENTATIONS: 40 Points-10 per Topic

From recent (less than 5 years old) peer reviewed journal articles choose one single subject design research studies to discuss the issue of (1) Interobserver Agreement/Reliability. Make sure to include the following requirements:

1. Setting (1)
2. Participants (1)
3. Methodology (1)
4. Findings (1)
5. Commentary should reflect positive (2) points (strengths)
6. Commentary should reflect negative (2) points (limitations)
7. Personal conclusions and importance of the issue (2)

Total points=10

The same should be completed for the topics of (2) Validity, (3) Visual Analysis, and (4) Statistical Analysis. A schedule with presentation dates is provided below. The rubric below will denote the scoring.

Short Presentations for each Topic

UNSATISFACTORY	MINIMAL	GOOD	OUTSTANDING
Listener cannot understand presentation because there is no sequence of information. Does not engage the audience. Student does not have grasp of information; students cannot answer questions about subject. Presentation includes five or less of the requirements - 1-5pts	Listener has difficulty following presentation because presenter jumps around. Does not engage most of the audience. Student is uncomfortable with information and is able to answer only rudimentary questions. Presentation includes only six of the requirements - 6pts	Student presents information in engaging and logical sequence which audience can follow. Student is at ease with content, but fails to elaborate. Presentation includes minimal work on all seven of the requirements - 7pts	Student presents information in engaging, novel, and logical sequence which audience can follow. Student demonstrates full knowledge with explanations and elaboration. Presentation includes comprehensive work on all seven of the requirements - 10pts

RESEARCH PROJECT: 30 points

The research project is designed to provide experience with single subject design, especially implementing and writing up a research report.

Introduction:

Purpose Statement: Discuss what this research is about including the significance of this topic.

Research Questions: Have at least four research questions.

Background Literature: Provide a brief description of the background literature that indicates a need for your questions.

Method:

Participants: Describe demographic and educational information for your individual(s).

Setting: Describe a setting, in which your study took place.

Materials: Carefully describe all of the instructional materials that were used in your project. Attach copies of the precise materials used if applicable.

Procedures: Carefully describe in a step by step fashion what you did with the individual(s). Include description of the procedures during the baseline, treatment, maintenance and/or generalization phases.

Analysis:

Describe all the analyses you are going to use (visual and statistical) in great detail.

Results:

Visual Analysis: Describe the visual analysis results.

Statistical Analysis and/or Randomization Tests: Describe the statistical analysis results or discuss why you chose not to use any statistical procedures.

Discussion:

Provide a discussion of your findings.

Implications:

Provide some insights as to why you might have obtained the findings and what you learned from the project. This section should include brief reflection on single subject research methodology in general and your project in particular.

Research Project Scoring Rubric

UNSATISFACTORY	MINIMAL	GOOD	OUTSTANDING
Paper with substantial problems in important areas such as writing, implementation of intervention, and evaluation of results, overall thoughtfulness. Contains little or no information of to the research in single subject design - 1-17pts	Overall, acceptable but with one or more significant problems. Contains some useful information, but may have substantial problems with evaluation, writing style, or implementation of project - 18-21pts	Good overall paper, lacking in one or two of the criteria for an exemplary paper. Not entirely reflective or thoughtful, or minor writing style errors may be present - 22-25pts	Appropriate topic, thorough and thoughtful review of previous research, appropriate and clearly described implementation procedures, careful measurement and evaluation of results, thorough and appropriate discussion of implications of findings. Good writing style, free of mechanical or stylistic errors, appropriate use of APA format throughout - 26-30pts

RESEARCH POSTER PRESENTATION: 10 points

Prepare an overview of your paper using the following guidelines:

1. Title of research
2. Purpose of research
3. Background Review including statement of need
4. Method, including sample, materials, and procedures
5. Data analyses
6. Results
7. Discussion and implications

Poster Presentations Scoring Rubric

UNSATISFACTORY	MINIMAL	GOOD	OUTSTANDING
Weak overall presentation that reflects very little knowledge of topic or project. May appear very poorly prepared, or may not have followed directions. Style or visual elements may be inadequate or lacking - 1-5pts	Poster presentation provides relevant information, but demonstrates only a limited understanding of the topic or project. Style, organization, or visual elements may be less than adequate. Responses to audience questions may reflect lack of understanding of relevant research methods - 6-7pts	Good overall poster presentation, but may be lacking in one or two of the criteria specified in exemplary response. May seem a little less polished or prepared, may be vague in some places, or may fail to completely answer audience questions - 7-9pts	Poster clearly describes major elements of the proposal; poster reflects clarity, organization, knowledge and interest in the content being presented; reflects a high level of preparation; makes effective use of visual format and presents an interesting, attractive appearance; describes very clearly the methods under consideration; poster and discussion keep the audience engaged; provide information of interest and value to audience. Presenter is able to answer basic audience questions about the proposal with poise, clarity, and thoughtfulness - 10 pts

Evaluation in Summary

1. Class participation: 10 points
2. Blackboard activities (5): 10 points (2 points each)
3. Short presentations (4): 40 points (10 points each)
4. Research project: 30 points
5. Poster presentation: 10 points

Points will be deducted for work submitted late.

Grading criteria:

90-100 points = A

80-89 points = B

70-79 points = C

<70 points = F

Plagiarism Statement

Plagiarism means using the exact words, opinions, or factual information from another person without giving that person credit. Writers give credit through accepted documentation styles, such as parenthetical citation, footnotes, or endnotes; a simple listing of books and articles is not sufficient. Plagiarism is the equivalent of intellectual robbery and cannot be tolerated in an academic setting. Student writers are often confused as to what should be cited. Some think that only direct quotations need to be credited. While direct quotations do need citations, so do paraphrases and summaries of opinions or factual information formerly unknown to the writers or which the writers did not discover themselves. Exceptions for this include factual information which can be obtained from a variety of sources, the writers' own insights or findings from their own field research, and what has been termed common knowledge. What constitutes common knowledge can sometimes be precarious; what is common knowledge for one audience may not be so for another. In such situations, it is helpful, to keep the reader in mind and to think of citations as being "reader friendly." In other words, writers provide a citation for any piece of information that they think their readers might want to investigate further. Not only is this attitude considerate of readers, it will almost certainly ensure that writers will never be guilty of plagiarism. (statement of English Department at George Mason University)

Plagiarism and the Internet

Copyright rules also apply to users of the Internet who cite from Internet sources. Information and graphics accessed electronically must also be cited, giving credit to the sources. This material includes but is not limited to e-mail (don't cite or forward someone else's e-mail without permission), newsgroup material, information from Web sites, including graphics. Even if you give credit, you must get permission from the original source to put any graphic that you did not create on your web page. Shareware graphics are not free. Freeware clipart is available for you to freely use. If the material does not say "free," assume it is not. Putting someone else's Internet material on your web page is stealing intellectual property. Making links to a site is, at this time, okay, but getting permission is strongly advised, since many Web sites have their own requirements for linking to their material. ([Virginia Montecino](#))

Montecino, V. (n.d.). George mason university honor system and code . Retrieved Aug. 06, 2010, from Education and Technology Resources Web site:
<http://mason.gmu.edu/~montecin/plagiarism.htm>.

Tentative Class Topics and Due Dates

(Subject to change for weather or other unforeseen interruptions)

Date	Class Topic	Reading & Assignments are Due
Tuesday, August 31	1. Introduction, History, and General Issues in Single Subject Research	- Gast chapters 1, 2
Tuesday, September 7	2. Behavioral Assessment, Data Collection & Recordings	- Gast chapters 5 (pp.91-98), 7 (pp. 129-155) - Horner et al., 2005 - Blackboard 1 - Post Study Topic
Tuesday, September 14	3. Research Questions and Experimental Control	- Kennedy chapter 5 (will be provided) - Odom et al. (2003) - Blackboard 2 using Lo & Cartledge (2006) Guest Speaker: Dr. Michael Behrmann
Tuesday, September 21	4. Single subject research designs: Basic Designs	- Gast chapters 10, 11 - Hains & Baer (1989) - Blackboard 3
Tuesday, September, 28	5. Single subject research designs: More Designs	- Gast chapters 12, 13 - McDougall et al. (2006) - HSRB applications (deadline: October 8 th ; Gast chapter 3 if needed)
Tuesday, October, 5	6. Interobserver Agreement and Procedural Reliability	- Gast chapter 7 (pp. 155-165) - Smith, Daunic, & Taylor (2007) - Repp et al. (1976) - Blackboard 4 Guest Speaker: Dr. Heidi Graff
No Class – Tuesday October 12 th (Columbus Day, October 11 th – Monday classes are meeting on Tuesday)		
Tuesday, October, 19	8. Validity: Internal, External, Social	- Gast chapters 5 (pp.98-109), 6 - Wolf (1978) - Kazdin (1981) - Short Presentation 1
Tuesday, October, 26	9. Visual Analysis	- Gast chapters 8, 9 - Short Presentation 2 - Method Section Draft
Tuesday, November, 2	10. Statistical Analysis	- Gast chapter 14 (pp. 417-437) - Park et al. (1990) - Scruggs et al. (2006) - Haardörfer & Gagne (2010) - Short Presentation 3
Tuesday, November, 9	11. Single-subject meta-analysis	- Gast chapter 14 (pp.437-453) - Scruggs & Mastropieri (1998) - Campbell (2004) - Parker et al. (2007) - Parker et al. (2009) -Manolov & Solanas (2009)

		- Short Presentation 4
Tuesday, November, 16	12. Single subject research designs: Case study	- Yin chapter 5 (will be provided) - Odom & Strain (2002) - Barnett et al. (2004) - Blackboard 5
Tuesday, November, 23	13. Group Work Time-Commentary and Corrections	- Gast chapter 4 - Tankersley, Cook, & Cook, 2008 - Post Outline for Final Papers
Tuesday, November, 30	12. Study Implementation and Update Switch Papers	- Final Paper Draft - Exchange Papers for Feedback
Tuesday, December, 7	14. Presentations	- Poster - Final Paper Due

References

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- Kazdin, A. E. (1981). External validity and single case experimentation: Issues and limitations. *Analysis and Intervention in Developmental Disabilities, 1*, 133-143. doi:10.1016/0270-4684(81)90027-6
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