



Single Case Experimental Design

PSY 6217
Fall, 2010
Tuesdays, 2:00 – 5:00pm
Westside A

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Course Description

The purpose of this course is to introduce you to the fundamentals of behavior-analytic research methods. The course will review single-case time series methodologies to assess various dimensions of behavior and evaluate the effects of interventions on behavior. Single-case research has played an important role in developing and evaluating interventions designed to modify some aspect of human behavior. This course will encompass a broad range of research areas that utilize single-case designs within both the behavior analytic literature and other disciplines including school psychology, medicine, and business.

Course Objectives

1. Students will understand the logic behind single case time series designs and the practical utility of the various designs
2. Students will learn to identify the different types of single case designs and be able to recommend particular designs for use in both research and practice
3. Students will learn the similarities and differences between single case and group designs
4. Students will learn how to draw valid inferences from data including how to assess variability, reliability, and generalization.

5. Students will understand the importance of treatment integrity and social validity when conducting research.

Course Readings:

Required Readings:

Kazdin, A.E. (2011). *Single-Case Research Designs (2nd ed.)*. Oxford University Press, New York, NY.

Journal Readings assigned weekly (mainly from JABA, which are available from the JABA web site (<http://seab.envmc.rochester.edu/jaba>))

You will also be required to purchase and bring a small dry erase board to each class along with a dry erase marker and eraser.

Recommended Textbook:

Sidman, M. (1960). *Tactics of scientific research*. Boston: Authors Cooperative.

Course Assignments

Exams (40%): There will be a midterm and a final exam for this course. The exams will cover the material from the readings and from lecture and will be cumulative. Questions will be mainly short answer essay type questions and multiple choice.

Quizzes (20%): There will be a quiz at the start of each class that will cover the material assigned for that class period. All quizzes will be ten questions.

Discussion Questions and Participation (10%): A written discussion question is required each week. These are to be questions you have about some aspect of the readings that would benefit from clarification, explanation, elaboration, or discussion – or challenges to it. The assignment is meant to set the occasion for insightful and critical thinking and class commentary. I may ask you to expand on your questions in class. Requirements: (a) The question must come from the readings overall (e.g., if it comes from one reading, but is answered in another reading, it does not count) and (b) it must include the citation and the citations page number(s) from which it is drawn so that we can consider its context. The questions need not be long; a sentence or two will often suffice. The questions are due by 5 pm on Mondays. They may be sent to the TA (Blair) via email as an MSword attachment (jacobsen1@mail.usf.edu). Discussion questions must be sent in an attached word document and must be in 12-point Times New Roman font. A selection of these questions may be used on the exams. Blair will compile all questions into one document to hand out at each class (student names will not be included on the handout). It is expected that students participate in the discussion of these questions during class.

Method Section Paper (10%): Students will be required to write a detailed methodology section for a study. The details of the study will be provided by the instructor. Students will be expected to use APA format. Additional instructions and examples will be provided in class.

Research Article Critique (10%): Students will be required to a summary/critique (3-5 pages), one of a research article assigned for class and one of an article that the student chooses (and approved by the instructor). The article chosen for review must be behaviorally oriented and include single-subject design methodology. Article summaries are to be written in APA format. Additional details and guidelines on acceptable articles will be provided later in class.

Student Led Presentation on Chosen Research Article Critique (10%): Each student will plan and deliver an oral presentation (with powerpoint) and lead a discussion on the research article chosen by the student to critique. The chosen articles citation must be provided to the class one week prior to the presentation in order for all classmates to read the article prior to the presentation. The presenting student will need to describe the purpose of the study, the independent (including procedures) and dependent variables, the experimental design, and the results (with an emphasis on data trends, reliability, and validity of the data collected). The student should then lead a discussion on any issues, points of clarification, and a general critique of the article (including limitations, procedural issues, alternative designs that could have been used, etc.). More details will be provided in class. The entire presentation and discussion should last approximately 20-25 minutes.

Course Grade

Your grade for the course will be calculated according to the following:

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| Exams | 40% |
| Quizzes | 20% |
| Discussion Questions & Participation | 10% |
| Method Section Paper | 10% |
| Research Article Critiques | 10% |
| Research Article Presentation | 10% |

A+ = 98 - 100%

A = 93 - 97%

A- = 90 - 92%

B+ = 88 - 89%

B = 83 - 87%

B- = 80 - 82%

C+ = 78 - 79%

C = 73 - 77%

C- = 70 - 72%

D = 60 - 69%

F = < 60%

Class Policies

Attendance: Your attendance in class is expected. As a graduate student you will actively participate in class discussions and activities. You will not miss class except for an emergency. If you must miss a class, you are responsible for anything that happens in class including

announcements, changes in assignments, additions or deletions from the syllabus, change in class schedule, etc. I expect to be informed in advance and provided with an explanation if you will be absent from class.

****Students must be present to take class quizzes during the first 10 minutes of class and quizzes cannot be made-up for any reason. If a student misses a class, the student will be required to obtain the written list of student questions for that week, answer the questions, and hand them into the instructor by the next class meeting in order to receive discussion and participation points for the week missed. If a student must miss an exam for an emergency or medical reason, the student will need to arrange a time to make-up the exam with the instructor within one week.**

Accommodations: Students in need of academic accommodations for a disability may consult with the office of Services for Students with Disabilities to arrange appropriate accommodations. Students are required to give reasonable notice (typically 5 working days) prior to requesting an accommodation.

Cheating and Plagiarism: See the policy in the USF Graduate Catalog. If you are caught cheating or plagiarizing in this course, you will receive a “0” for the assignment and possible termination from the course. Cheating may mean using a previous or another student’s project and turning it in as your own. Plagiarizing means turning in written work that includes copyrighted material taken from someone else, without using quotation marks or otherwise giving proper credit to the true author. In other words, plagiarism is the presentation of an author’s work in a way that the material might be mistaken to be your own.

USF's Policy on Religious Observances: *"No student shall be compelled to attend class or sit for an examination at a day or time prohibited by his or her religious belief in accordance with the University policy on observance of religious holy days. Students who anticipate the necessity of being absent from class due to the observation of a major religious observance must provide notice of the dates to the instructor, in writing, by the second class meeting. "*

Audio or Video Recording Policy: You must obtain advance written permission from the Instructor prior to audio recording or video recording any lecture or discussion with the Instructor. Suitable reasons may include a reasonable accommodation for a disability. However, students are not permitted to sell notes or tapes of class lectures.

Emergency Planning: In the event of an emergency, it may be necessary for USF to suspend normal operations. During this time, USF may opt to continue delivery of instruction through methods that include but are not limited to: Blackboard, Elluminate, Skype, and email messaging and/or an alternate schedule. It’s the responsibility of the student to monitor Blackboard site for each class for course specific communication, and the main USF, College, and department websites, emails, and MoBull messages for important general information.

Outline of Course Content and Tentative Schedule

| Class Date | Topics and Associated | Readings Due |
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| Spring, 08 | Assignments | for Class |
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| 8/23 | Class Introduction Overview of Syllabus | |
| 8/30 | <i>Background</i> -Historical Overview of Single-Case Methodology Conducting Scientific Research: Types of Validity and Threats to Validity | Kazdin Chapters 1 & 2 Baer, Wolf, & Risley (1968) Baer, Wolf, & Risley (1987) Normand (2008) |
| 9/6 | <i>Data Collection Methods I</i> Operational Definitions Social Validity Reliability and Validity | Kazdin Chapter 3 Wolf (1978) Schwartz & Baer (1991) |
| 9/13 | <i>Data Collection Methods II</i> Measuring Overt Behavior Assessment Strategies Observation | Kazdin Chapter 4 Repp, Roberts, et al. (1976) Mudford, Beale, & Singh (1990) Lerman et al. (2010) |
| 9/20 | <i>Quality of Measurement</i> -Interobserver Agreement - Reactivity <i>Intro. to Single-Case Research Designs</i> -Stability, Trend, Variability | Kazdin Chapters 5 & 6 (pg. 121-127) Harris & Ciminero (1978) Repp, Deitz, et al. (1976) Mudford, Martin, Hui, & Taylor (2009) |
| 9/27 | Treatment Integrity -Integrity of Independent Variables -Threats to Integrity | Peterson, Homer, & Wonderlich (1982) Salend (1984) Vollmer et al. (1999) DiGennaro Reed et al. (2010) |
| 10/4 | <i>Designs</i> ABA, ABAB Multiple-Baseline Changing Criterion | Kazdin Chapters 6 (pg. 128-143), 7, & 8 Horner & Baer (1978) Hartmann & Hall (1976) |
| 10/11 | <i>Designs Continued</i> | Kazdin Chapter 9 |

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| | Multiple Treatment Alternating Treatment <i>Student Critique Presentations</i> | Barlow & Hayes (1979) <i>Readings for Critique Presentations (TBD)</i> |
| 10/18 | <i>Review of Designs</i> <i>Additional Design Options</i> <i>Student Critique Presentations</i> | Kazdin Chapter 10 Thompson & Iwata (2005) <i>Readings for Critique Presentations (TBD)</i> |
| 10/25 | Mid-Term Exam Data Evaluation – Intro to Graphing Data | Dixon et al. (2009) |
| 11/1 | Data Evaluation Continued Graphic Display of Data Visual Inspection & Interpretation <i>Student Critique Presentations</i> | Kazdin Chapter 12 & 13 Fisher, Kelley, & Lomas (2003) Matyas & Greenwood (1990) <i>Readings for Critique Presentations (TBD)</i> |
| 11/8 | Challenges and Limitations of Single-Case Design <i>Student Critique Presentations</i> | Kazdin Chapter 14 Written Critique Due <i>Readings for Critique Presentations (TBD)</i> |
| 11/15 | Quasi-Single-Case Experimental Designs Solomon Four Group Design <i>Student Critique Presentations</i> | Kazdin Chapter 11 Baer (1977) <i>Readings for Critique Presentations (TBD)</i> |
| 11/22 | Group Designs and Statistical Analysis for Single-Case Research <i>Student Critique Presentations</i> | Kazdin Appendix Branch (1999) <i>Readings for Critique Presentations (TBD)</i> |
| 11/29 | Translational Research Evidence-Based Practice | Herbert (2003) Horner et al. (2005) Method Section Paper Due |

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| | <i>Student Critique Presentations</i> | <i>Readings for Critique Presentations (TBD)</i> |
| 12/6 | Final Exam | |

References:

- Baer (1977). "Perhaps it would be better not to know everything". *Journal of Applied Behavior Analysis, 10*, 167-172.
- Baer, D.M., Wolf, M.M., & Risley, T.R. (1968). Some current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis, 1*, 91-97.
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- Barlow, D.H. & Hayes, S.C. (1979). Alternating treatments design: One strategy for comparing the effects of two treatments in a single subject. *Journal of Applied Behavior Analysis, 12*, 199-210.
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