

EDUC/SPED 7700: Single Subject Research Methods and Designs
Syllabus, Fall Semester, 2007

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Office & Office Hours: EDUC #328, by appointment

Course Date, Time, Location: Tuesdays, 1:30-4:00 p.m., SPER Conference Room, EDUC 313C

Course web site: <http://bb.usu.edu>

Texts:

Barlow, D. H., & Hersen, M. (1992). *Single Case Experimental Designs: Strategies for Studying Behavior Change (Second Edition)*. Allyn & Bacon.

Johnston, J.M. & Pennypacker, H.S. (1993). *Strategies and Tactics of Behavioral Research*. Hillsdale, N.J.:L. Erlbaum Associates.

Readings: See *Course Content* page on course website for additional reading assignments.

Course Overview

Single-subject or intra-subject analysis is a primary experimental research methodology in special education and other related human service fields. It is tied closely to individual intervention methodologies that characterize applied behavior analysis and effective classroom instruction and clinical intervention. Most behavioral interventions used in today's classrooms (and many used in clinics), including those based on positive reinforcement, differential reinforcement, shaping, chaining, precision requests, behavior contracts, and self-monitoring, originated using functional assessment procedures in the context of intra-subject research. Yet, intra-subject and other research methodologies and the interventions that they analyze are sometimes not acknowledged in school practice. This course is designed to help professional personnel acquire the skills to systematically: (1) identify relationships between research and practice, (2) evaluate the behavior of individuals in academic and social settings; (3) analyze the effects of educational and behavioral interventions, and (4) evaluate intra-subject research in applied settings with individuals and small groups.

Course Objectives

Some objectives for this course are cross-referenced to the Common Core Program Standards published by The Council for Exceptional Children (CEC). Upon completion of this course, students who receive a "B" grade or better will:

1. Describe methods for monitoring progress of individuals with exceptional learning needs (CC1, K9).
2. Use various types of assessment procedures appropriately (CC3, S4).
3. Describe report assessment results to individuals with exceptional learning needs, parents, administrators, and other professionals using appropriate communication skills (CC3, S6).
4. Use performance data and information from teachers, other professionals, individuals with exceptionalities, and parents to make or suggest appropriate modification in learning environments. (CC3, S7).
5. Develop individualized assessment strategies for instruction (CC3, S8).

6. Use assessment information in making instructional decisions and planning individual programs that result in appropriate placement and intervention for all individuals with exceptional learning needs, including those from culturally and/or linguistically diverse backgrounds (CC3, S9).
7. Evaluate the results of instruction (CC3, S10).
8. Evaluate supports needed for integration into various program placements (CC3, S11).
9. Interpret and use assessment data for instruction (CC4, S1).
10. Articulate foundation concepts in the pursuit of science related to the definition of science, the goals of science, the assumptions for science, the basic methodologies used by scientists and the relationship between science and other approaches to knowledge.
11. Contrast behavioral analysis (intra-subject) research methodologies with other scientific methodologies used to study behavior.
12. Demonstrate knowledge of the foundation concepts in behavior analysis.
13. Identify and describe the general issues in single-subject research and evaluation including: (1) operational definition of behaviors, (2) repeated measures, (3) replicability, (4) variability, (5) reliability, (6) generality of findings, (7) maintenance of behavior change, and (8) validity.
14. Describe five different types of measures used to assess individual's behavior. These include time sampling, frequency/rate, duration, interval recording, intensity and latency. Students will learn to match the appropriate type of measure to various behaviors, design and implement data recording systems, summarize and graph data, analyze trends in the data and assess inter-observer agreement.
15. Identify and describe the relevant characteristics of each intra-subject experimental design. Students will also select appropriate designs for a variety of academic or social behavior research problems. These will include: (1) reversal designs; (2) multiple baseline designs; (3) alternating treatment designs; (4) combination designs; (5) indirect training study designs, and (6) designs for studying generalization of intervention effects.
16. Students will use rules of graphic analysis to interpret data as to its trends, variability, results, and generality.

General Expectations

- Assignments are to be turned in electronically via the *Drop Box* on the course web page before the beginning of class time (1:30 p.m.) on the date they are due. Late assignments will be assessed a 15% penalty *per day late*.
- Students are expected to attend class sessions and to remain for the entire scheduled period (1:30 p.m. to 4:00 p.m.) unless previous arrangements are approved by the instructor.
- Students are to adhere to the USU Honor Code and Classroom Civility policy (see course website for details).

Student Evaluation:

Weekly Quizzes: The first 20 minutes of each class period, beginning with the second class session (Sept 4th), will be devoted to a quiz. The quiz will be composed of fill-in-the-blank and short answer questions. The majority of the questions on the quiz will be from material covered in the previous class session. One or two questions, however, will be from the readings assigned for that particular class session. These questions will be general in nature and will be easy to answer having read the material to be discussed. Quizzes will be worth 25 points each. There will be a total of 12 quizzes given during the course. Only 10 quizzes will count towards the

final grade, so each student's lowest two quiz scores will be dropped. **Note: Quizzes cannot be made up if they are missed and will only be given at the scheduled times listed on the syllabus. There are no exceptions.**

IRB Certification Assignment: You will be required to complete the USU Institutional Review Board (IRB) training which can be found at the following website:

<https://www.citiprogram.org/default.asp>

To receive credit for this assignment, you will need to provide documentation indicating that you have completed all of the training modules (if you have already completed the IRB training, simply make a copy of your completion certificate and turn it in). This assignment is worth 25 points and is due on Sept. 11th.

Excel Graph Project: You will be given four sets of raw data, each collected for a different single-case design. Using instructions that will be provided to you in class, you will be required to produce four graphs (i.e., reversal, multiple-baseline, alternating treatments, changing-criterion) using MS Excel. This assignment is due on Oct. 9th at the beginning of class. This assignment is worth 25 points.

Article Reviews: For these assignments, you will be required to complete reviews of professional articles in a format suitable for an editorial decision. Your review is limited to 3 single-spaced, typed pages (12 pt Arial or Times New Roman font, 1 inch margins) and should also include a cover letter (not included in the page total). Guidelines for completing a review, as well as a sample review and cover letter, will be provided. You will be assigned one of my empirical articles to review. The two article reviews will be worth 25 points each. The article review assignments will be due on Oct. 23rd and Nov. 27th.

Research Proposals: You will complete three research proposals employing single-case designs. Each will be a maximum of 7 pages, double-spaced, not counting the title page, figures, and references. No abstract is needed. The proposals should include an introduction that explains your research question in scholarly terms and establishes its importance (2 pages), the method (3 pages), and a section on anticipated results and a discussion of what these results would mean (2 pages). Each proposal will utilize a different research design (specified below). You may not propose a project that you have already conducted or proposed elsewhere. The proposals will be due on Oct. 16th (withdrawal design), Oct. 30th (multiple baseline design), and Nov. 13th (multielement/alternating treatments design). Each proposal will be worth 50 points. Students may turn in re-written proposals based on instructor feedback for ½ of the points missed. All re-writes must be turned in one week after proposals are returned.

Proposal Presentation: You will choose one of your research proposals and prepare a brief oral presentation (10 minutes) to share with the rest of the class. The presentations will be on Dec. 4th and will be worth 25 points.

Final Exam: The final exam will be worth 100 points and will be given during the class period on Dec. 11th. The final exam will be comprehensive.

Participation Points: The instructor will expect that each student will actively participate in class discussion and in-class activities. Frequent contributions to class discussion that extend and