

EDUC/SPED 6700: Single Subject Research Methods and Designs
Syllabus, Fall Semester, 2005

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Office & Office Hours: EDUC #328, By appointment

Course Date, Time, Location: Tuesdays, 4:30-7:00 p.m., CPD 151

Course web site: http://webct.usu.edu/SCRIPT/SPED6700_TH/scripts/serve_home

Text: Kennedy, C.H. (2005). *Single Case Designs for Educational Research*. Allyn & Bacon.

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 via the *Drop Box* on the course web page before the beginning of class time (4:30 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 (4:30 p.m. to 7:00 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 6th), 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 quiz score 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.**

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. 25th at the beginning of class. This assignment is worth 25 points.

Prospectus: A prospectus is a document containing the introduction (including a literature review) and method sections of a proposed study. As a test of the generality of your learning in the course, you will be required to write an APA-style prospectus for a single-case experimental study of your choice. The page limit will be 15 pages, not including your title page, abstract, references, and figures. At least three research articles must be reviewed in your introduction. A detailed guide for this assignment will be available on the course website. You may ***not*** write about a project you have already completed or used for another class. Your research topic must be approved by me by October 18th. A detailed outline of your introduction and method sections, along with a comprehensive reference list is due to me on November 8th. The final prospectus is due on Nov. 22nd. This assignment is worth 100 points.

Final Exam: The final exam will be worth 100 points and will be given during the class period on Dec. 9th. The final exam will be comprehensive. The format will be the same as the weekly quizzes but with additional questions.

Participation Points: The instructor will expect that each student will actively participate in class discussion and in-class activities. At least occasional contributions to class discussion that extend and enhance group process are required. Courteous demeanor is also required, and is defined as (1) arriving on time, (2) leaving at the scheduled time and not before (unless the instructor approves beforehand), and (3) listening (not talking) during lecture or class discussion. Participation and class demeanor is worth a maximum of 25 points assigned at the end of the semester. Behavior contrary to courteous demeanor, such as arriving late, leaving early, or talking to neighbors during lecture/discussion, will result in significant reduction or forfeiture of all 25 points.

Absences: Contact the instructor (797-1933, tom.higbee@usu.edu) prior to scheduled class time to report absences.

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| <i>Grading Criteria:</i> | | 94-100% | A |
| | | 90-93% | A- |
| Points Possible | | 87-89% | B+ |
| Weekly Quizzes (10 @ 25 pts each) | 250 | 83-86% | B |
| Excel Graphing Project | 25 | 80-82% | B- |
| Prospectus | 100 | 77-79% | C+ |
| Class Participation | 25 | 73-76% | C |
| Final Exam | 100 | 70-72% | C- |
| ----- | | 67-69% | D+ |
| | | 60-66% | D |
| Total | 500 | 59% & below | F |

Accommodations and Alternate Format Materials:

In coordination with the USU Disability Resource Center (DRC), reasonable accommodation will be provided for qualified students with disabilities. Please notify the instructor during the first week of class if accommodations are necessary. Accommodations and alternate format materials are available through the DRC found at TSC 104 or call 435-797-2444 TTY: 435-797-0740.

Course Schedule
SPED/EDUC 6700: Single Subject Research Methods and Designs

| | Class Session | Topic | Reading Assignment | Assignments Due |
|----|---------------|--|--|-----------------------------------|
| 1 | Aug. 30 | Course Intro, Philosophy of Science, Visual Analysis | Kennedy, Chapter 1 | None |
| 2 | Sept. 6 | History of Single-Case Designs | Kennedy, Chapter 2 Barlow & Hersen, Chapter 1 | Quiz #1 |
| 3 | Sept. 13 | Rationale for Single-Case Designs, Single-Case vs. Group Designs | Barlow & Hersen, Chapter 2 Additional Readings on WebCT | Quiz #2 |
| 4 | Sept. 20 | Research Questions, Behavioral Measurement | Kennedy, Chapters 5 & 6 Additional Readings on WebCT | Quiz #3 |
| 5 | Sept. 27 | Behavioral Measurement II | Kennedy, Chapter 7 Additional Readings on WebCT | Quiz #4 |
| 6 | Oct. 4 | Experimental Variables, Functional Relations, Baselines | Kennedy, Chapter 3 Barlow & Hersen, Chapter 3 | Quiz #5 |
| 7 | Oct. 11 | Interobserver Agreement, Treatment Fidelity | Kennedy, Chapter 8 Additional Readings on WebCT | Quiz #6 |
| 8 | Oct. 18 | Visual and Quantitative Analysis of Single-Case Designs | Kennedy, Chapter 15 | Quiz #7 Prospectus Topic |
| 9 | Oct. 25 | Withdrawal Designs | Kennedy, Chapter 9 | Quiz #8 Excel Graphing Project |
| 10 | Nov. 1 | Multiple-Baseline | Kennedy, Chapter 11 | Quiz #9 |
| 11 | Nov. 8 | Alternating Treatments/Multielement Design, Combined Design | Kennedy, Chapters 10, 13, & 14 | Quiz #10 |
| 12 | Nov. 15 | Replication, Social Validity | Kennedy, Chapters 4 & 16 | Quiz #11 |
| 13 | Nov. 22 | Ethics in Behavioral Research | Readings on WebCT | Quiz #12 |
| 14 | Nov. 29 | Research Presentations Review for Final | | Prospectus |
| 15 | Dec. 6 | Final Exam | | Final Exam |