

Department of Human Services
EPS 652.020 – Single Case Research Methods
Fall 2019

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Course Time & Location: T 4:30 PM – 7:00 PM;
HSTC 318
Office Hours: M 10 AM – 12 PM; T 3 PM – 4:30 PM;
W 2 PM – 4:30 PM
Credits: 3 hours

I. Course Description:

Characteristics and implementation of traditional single-subject research designs. This course will provide students with the knowledge to conduct research utilizing single-subject designs, with emphasis on causal inference.

Additionally, this course will prepare students to critically evaluate the peer-reviewed literature.

EPS 652 Single-Subject Research Methods (3 credit hours) typically meets once per week for a 150-minute segment for 15 weeks, and also meets for a 2-hour midterm examination. Students have significant weekly reading assignments, complete four minor writing assignments, complete one large research proposal, analyze and present mock research findings, and prepare for and take a midterm examination. These activities average at a minimum 6 hours of work each week to prepare outside of classroom hours.

II. Intended Learning Outcomes/Goals/Objectives (Program/Student Learning Outcomes):

The complete listing of the standards associated with the PLOs, SLOs, assignments, and assessments are located on the PCOE website.

This course reflects the following core values of the College of Education:

- Academic excellence through critical, reflective, and creative thinking
- Life-long learning
- Collaboration and shared decision-making
- Openness to new ideas, to culturally diverse people, and to innovation and change
- Integrity, responsibility, diligence, and ethical behavior
- Service that enriches the community

The mission of the College of Education is to prepare competent, successful, caring, and enthusiastic professionals from diverse backgrounds dedicated to responsible service, leadership, social justice, and continued professional and intellectual development in an interconnected global society.

The goals of this course are closely aligned to those of the PCOE, which is to prepare competent, successful, caring and enthusiastic professionals dedicated to responsible service, leadership, and continued professional and intellectual development. As a preliminary step in this process, the knowledge obtained in this course will enable candidates to develop the requisite knowledge, skills, and dispositions necessary for admission into the PCOE Teacher Certification Program.

This course also supports the mission of the Human Services Department.

Program Learning Outcomes:

1. Practical Knowledge: The candidate will demonstrate a comprehensive knowledge of theory, practice, research, and assessment.

2. Content Knowledge: The candidate will demonstrate basic knowledge of the school psychology profession, specifically: assessment and treatment, prevention and intervention, applied psychological foundations, applied educational foundations, and ethical and legal considerations.
3. Behavior Assessment: The candidate will identify and operationally define current problem areas, strengths, and needs through assessment, and measure the results of decisions based on those evaluations.
4. Pedagogical and Professional Knowledge, Skills, and Dispositions: The candidate will demonstrate knowledge, skills, and professional work characteristics/ dispositions and effectively apply them in practice.
5. Application of Principles and Procedures: Assessment that demonstrates candidates' knowledge, skills, and dispositions are applied effectively in practice.

NASP Domains addressed by this course:

Domain 1: Data-Based Decision Making and Accountability

- School psychologists have knowledge of varied models and methods of assessment and data collection for identifying strengths and needs, developing effective services and programs, and measuring progress and outcomes.
- As part of a systematic and comprehensive process of effective decision making and problem solving that permeates all aspects of service delivery, school psychologists demonstrate skills to use psychological and educational assessment, data collection strategies, and technology resources and apply results to design, implement, and evaluate direct interventions, psychological services, and programs.

Domain 9: Research and Program Evaluation

- School psychologists have knowledge of research design, statistics, measurement, varied data collection and analysis techniques, and program evaluation sufficient for understanding research and interpreting data in applied settings.
- School psychologists demonstrate skills to evaluate and apply research as a foundation for service delivery and, in collaboration with others, use various techniques and technology resources for data collection, measurement, and analysis to support effective practices at the individual, group, and/or systems levels.

Domain 10: Legal, Ethical, and Professional Practice

- School psychologists have knowledge of the history and foundations of school psychology; multiple service models and methods; ethical, legal, and professional standards; and other factors related to professional identity and effective practice as school psychologists.
- School psychologists demonstrate skills to provide services consistent with ethical, legal, and professional standards; engage in responsive ethical and professional decision-making; collaborate with other professionals; and apply professional work characteristics needed for effective practice as school psychologists, including respect for human diversity and social justice, communication skills, effective interpersonal skills, responsibility, adaptability, initiative, dependability, and technology skills.

BACB 4th Edition Task List Sections addressed by this course:

- A. Measurement
 - a. Assess and interpret interobserver agreement
 - b. Design, plot, and interpret data using equal-interval graphs
- B. Experimental Design
 - a. Review and interpret articles from the behavior-analytic literature
 - b. Systematically arrange independent variables to demonstrate their effects on dependent variables
 - c. Use withdrawal/reversal, alternating treatments, changing criterion, multiple baseline, and multiple probe designs
 - d. Use combinations of design elements

H. Measurement

- a. Select a measurement system to obtain representative data given the dimensions of the behavior and the logistics of observing and recording
- b. Select a schedule of observation and recording periods
- c. Select a data display that effectively communicates relevant quantitative relations
- d. Evaluate changes in level, trend, and variability
- e. Evaluate temporal relations between observed variables

Student Learning Outcomes:

1. Students will identify and demonstrate the principle methods of measurement and data collection used in single-case research designs. (**Empirical and Quantitative Skills**) (1, 9)
2. Students will demonstrate knowledge of the methods and formulae to determine inter-observer agreement and the accepted standards required for decision-making. (**Empirical and Quantitative Skills**) (1, 9)
3. Students will discuss issues in treatment integrity and the strengths and weaknesses of single-case procedures, in terms of internal and external validity. (**Communication; Empirical and Quantitative Skills; Professional Responsibility**) (9, 10)
4. Given various dependent and independent variables, students will identify the appropriate single-case design for organization and analysis. (**Communication; Empirical and Quantitative Skills**) (9)
5. Students will identify and discuss the issues in using single subject designs in professional practice. (**Communication; Empirical and Quantitative Skills**) (9, 10)
6. Students will demonstrate professional competence in developing a socially significant research question and developing a study proposal to answer the question. (**Communication; Critical Thinking; Social Responsibility**) (9, 10)
7. Students will evaluate peer-reviewed literature according to strength of design and writing. (**Critical Thinking, Communication, Empirical and Quantitative Skills**) (1, 9, 10)
8. Students will demonstrate professional competence in presenting single-case design research methodology and results. (**Communication; Empirical and Quantitative Skills; Professional Responsibility**) (1, 9)

III. Course Assignments, Activities, Instructional Strategies, use of Technology (Core Curriculum requirements addressed in course presented in **Bold**; NASP domains presented in *italics*):

Exam: One exam will measure the mastery of content. The exam will include a variety of question types, including multiple choice, short answer, and short essays. (**Critical Thinking; Communication; Empirical and Quantitative Skills**) (1, 9, 10)

Article Evaluations*: Students will select articles utilizing a variety of single case designs and complete evaluations following a given form. Article evaluations are due at the start of the class session following the discussion of the assigned design (refer to course schedule). (**Critical Thinking; Communication**) (9)

Research Planning Outline*: Students will design a research project targeting an area of interest, approved by the instructor. The planning outline should include a brief rationale for the study, a description of ideal participants and setting, defined variables, including measurement system, study procedures, and additional considerations/limitations. A template will be provided by the instructor. (**Communication; Empirical and Quantitative Skills**) (9, 10)

Research Proposal*: The proposal should include the literature review of related single-case research and a rough draft of methods and the research design. This assignment is an extension of the Research Planning Outline assignment. (**Communication; Empirical and Quantitative Skills**) (9, 10)

Peer Review*: Students will review an assigned article using traditional review methods of peer-reviewed journals as a guide. Students will submit their reviews in letter format. (**Critical Thinking; Communication**) (9)

Professional Presentation: Given mock data from their proposed research, students will complete either a poster or powerpoint presentation of their project, including an introduction, methods, results, and discussion. This assignment is an extension of the Research Proposal assignment. (**Communication; Empirical and Quantitative Skills**) (9, 10)

Participation and Attendance: Students will be required to participate in discussions. To receive credit for attendance and participation, a minimum of one question or comment will be required for each class session that includes a discussion. For all other class sessions, attendance will be taken within the first 15 minutes of the class beginning. Attendance and participation will count towards 5 % of final grades. (**Personal Responsibility; Communication; Teamwork**)

***Written assignments will be submitted to the appropriate Dropbox folder on D2L. Late assignments will receive a 5 % reduction in possible points each day they are late. Day 1 begins the minute following the time assignments are due. Day 2 begins 24 hours following the time assignments are due, and so on. Assignments not submitted by midnight on the last day of finals will be graded and recorded as a 0.**

IV. Evaluation and Assessments (Grading):

Exam	100
Article Evaluations (10 points each)	40
Research Planning Outline	25
Research Proposal	50
Professional Presentation	50
Peer Review	25
Participation and Attendance	15
Total Points	305

V. Tentative Course Outline/Calendar:

Date	Topic	Reading	Assignments Due
Week 1	Syllabus/Introduction		
Week 2	SCD Intro; Evaluating SCD Research	Horner et al., 2005; Kratochwill et al., 2013	
Week 3	SCD Research: Developing topics and questions and defining variables	Burian, Rogerson, & Maffei, 2010; Smith, 2012	
Week 4	SCD Research: Measurement systems	Giunta-Fede et al., 2016; Powell et al., 1975	
Week 5	Withdrawal and Reversal Designs	Fudge et al., 2008; Rusch & Kazdin, 1981; VanHouten & Thompson, 1976	
Week 6	Multiple Baseline and Changing Criterion Designs	Cuvo, 1979; Hartmann & Hall, 1976; Horner & Baer, 1978; Krohn, Skinner, & Fuller, 2012	Article Eval 1

Week 7	Multi-element Designs	Barlow & Hayes, 1979; Forbes et al., 2013; Hains & Baer, 1989; Wacker et al., 1990	Article Eval 2 and 3
Week 8	Visual Representation and Analysis of Data	Deochand, Costello, & Fuqua, 2015; Dixon et al., 2009	Article Eval 4
Week 9	Other Design Considerations	Gresham, Gansle, & Noell, 1993; Repp et al., 1976; Wolery, 1994	Research Planning Outline due 10/25, 5 pm
Week 10	Exam		
Week 11	Submitting and Evaluating Research		Research Proposal due 11/8, 5 pm
Week 12	Past and Contemporary Issues	Micheal, 1974; Poncy et al., 2016; Solomon, Howard, & Stein, 2015	
Week 13	SCD Ethics	BCBA <i>Professional and Ethical Compliance Code for Behavior Analysts</i> ; NASP <i>Principles for Professional Ethics</i> ; Wolf, 1978	Peer Review due 11/22, 5 pm
Week 14	Thanksgiving Break		
Week 15	Presentations		
Week 16	Presentations		

VI. Readings (Required and recommended—including texts, websites, articles, etc.):

Text:

No required text

Articles:

Barlow, D. H. & Hayes, S. C. (1979). Alternating treatment design: One strategy for comparing the effects of two treatment in a single subject. *Journal of Applied Behavior Analysis*, 12, 199-210.

Burion, P. E., Rogerson, L., Maffei III, F. R. (2010). The research roadmap: A primer to the approach and process. Issued in *Education Research*, 3, 43-58.

Cuvo, A. J. (1979). Multiple baseline design in instructional research: Pitfalls of measurement and procedural advantages. *American Journal of Mental Deficiency*, 34, 219-228.

Deochand, N., Costello, M. S., & Fuqua, R. W. (2015). Phase lines, scale breaks, and trend lines using Excel 2013. *Journal of Applied Behavior Analysis*, 48, 478-493.

Dixon, M. R., Jackson, J. W., Small, S. L., Horner-Kin, M. J., Mui Ker Lik, N., Garcia, Y., & Rosales, R. (2009). Creating single-subject design graphs in Microsoft Excel 2007. *Journal of Applied Behavior Analysis*, 42, 277-293.

Forbes, B. E., Skinner, C. H., Black, M. P., Yaw, J., Booher, J., & Delisle, J. (2013). Learning rates and known-to-unknown flash-card ratios: Comparing effectiveness while holding instructional time constant. *Journal of Applied Behavior Analysis*, 46, 832-837.

- Fudge, D. L., Skinner, C. H., Williams, J. L., Cowden, D., Clark, J., & Bliss, S. L. (2008). Increasing on-task behavior in every student in a second-grade classroom during transitions: Validating the color wheel system. *Journal of School Psychology, 46*, 575-592.
- Giunta-Fede, A., Reeve, S. A., DeBar, R. M., Vladescu, J. S., & Reeve, K. F. (2016). Comparing continuous and discontinuous data collection during discrete trial teaching of facting by children with autism. *Behavioral Interventions, 31*, 311-331.
- Gresham, F., Gansle, K., & Noell, G. (1993). Treatment integrity in applied behavior analysis with children. *Journal of Applied Behavior Analysis, 26*, 257-263.
- Hains, A. H. & Baer, D. M. (1989). Interaction effects in multielement designs: Inevitable, desirable, and ignorable. *Journal of Applied Behavior Analysis, 22*, 57-69.
- Hartmann, D. P. & Hall, R.V. (1976). The changing criterion design. *Journal of Applied Behavior Analysis, 9*, 527-532.
- Horner, R. D. & Baer, D. M. (1978). Multiple-probe technique: A Variation of the multiple baseline. *Journal of Applied Behavior Analysis, 11*, 189-196.
- Horner, R., Carr, E., Halle, J., McGee, G., Odom, S., & Wolery, M. (2005). The use of single subject research to identify evidence-based practice in special education. *Exceptional Children, 71*, 165-179.
- Kratochwill, T. R., Hitchcock, J., Horner, R. H., Levin, J. R., Odom, S. L., Rindskopf, D. M. & Shadish, W. R. (2013). Single-case intervention research design standards. *Remedial and Special Education, 34*, 26-38.
- Krohn, K. R., Skinner, C. H., & Fuller, E. J. (2012). Using a taped intervention to improve kindergarten students' number identification. *Journal of Applied Behavior Analysis, 45*, 437-441.
- Michael, J. (1974). Statistical inference for individual organism research: Mixed blessing or curse? *Journal of Applied Behavior Analysis, 7*, 647-653.
- Poncy, B. C., Solomon, B., Duhon, G., Skinner, C., Moore, K., & Simons, S. (2015). An analysis of learning rate and curricular scope: Caution when choosing academic interventions based on aggregated outcomes. *School Psychology Review, 44*, 289-305.
- Powell, J., Martindale, A., & Kulp, S. (1975). An evaluation of time-sample measures of behavior. *Journal of Applied Behavior Analysis, 8*, 463-469.
- Repp, A. C., Deitz, D. E., Boles, S. M., Deitz, S. M., & Repp, C. F. (1976). Differences among common methods for calculating interobserver agreement. *Journal of Applied Behavior Analysis, 9*, 109-113.
- Rusch, F. & Kazdin, A. (1981). Toward a methodology of withdrawal designs for assessment of response maintenance. *Journal of Applied Behavior Analysis, 14*, 131-140.
- Smith, J. D. (2012). Single-case experimental designs: A systematic review of published research and current standards. *Psychological Methods, 17*.
- Solomon, B. G., Howard, T. K., & Stein, B. L. (2015). Critical assumptions and distribution features

pertaining to contemporary single-case effect sizes. *Journal of Behavioral Education*, 24, 438-458.

VanHouten, R. & Thompson, C. (1976). The effects of explicit timing on math performance. *Journal of Applied Behavior Analysis*, 9, 227-230

Wacker, D., McMahon, C., Steege, M., Berg, W., Sasso, G., & Melloy, K. (1990). Applications of sequential alternating treatments design. *Journal of Applied Behavior Analysis*, 23, 333-339.

Wolery, M. (1994). Procedural fidelity: a reminder of its functions. *Journal of Behavioral Education*, 4, 381-386.

Wolf, M. M. (1978). Social validity: The case for subjective measurement or how applied behavior analysis is finding its heart. *Journal of Applied Behavior Analysis*, 11, 203-214.

LiveText Statement:

This course uses the LiveText/Watermark data management system to collect critical assessments for students who are Perkins College of Education majors (undergraduate, graduate, and doctoral) or majors in other colleges seeking educator certification through the Perkins College of Education. Students who do not have an existing LiveText/Watermark account will receive an access code via the SFA email system within the first week of class. You will be required to register your LiveText/Watermark account, and you will be notified how to do this via email. If you forward your SFA e-mail to another account and do not receive an e-mail concerning LiveText/Watermark registration, please be sure to check your junk mail folder and your spam filter for these e-mails.

If you have questions about obtaining or registering your LiveText/Watermark account or any technical questions, call 936-468-2395 or e-mail LiveText@sfasu.edu. Failure to activate the account and/or submit the required assignment(s) within the LiveText/Watermark system may result in course failure.

VII. Course Evaluations:

Near the conclusion of each semester, students in the Perkins College of Education electronically evaluate courses taken within the PCOE. Evaluation data is used for a variety of important purposes including:

1. Course and program improvement, planning, and accreditation;
2. Instruction evaluation purposes; and
3. Making decisions on faculty tenure, promotion, pay, and retention.

As you evaluate this course, please be thoughtful, thorough, and accurate in completing the evaluation. Please know that the PCOE faculty is committed to excellence in teaching and continued improvement. Therefore, your response is critical!

In the Perkins College of Education, the course evaluation process has been simplified and is completed electronically through MySFA. Although the instructor will be able to view the names of students who complete the survey, all ratings and comments are confidential and anonymous, and will not be available to the instructor until after final grades are posted.

VIII. Student Ethics and Other Policy Information: Found at <http://www.sfasu.edu/policies/>

Class Attendance and Excused Absence: Policy 6.7

Regular, punctual attendance, documented participation, and, if indicated in the syllabus, submission of completed assignments are expected at all classes, laboratories, and other activities for which the student is registered. Based on university policy, failure of students to adhere to these requirements shall influence the course grade, financial assistance, and/or enrollment status. The instructor shall maintain an accurate record of each student's attendance and participation as well as note this information in required reports (including the first 12 day attendance report) and in determining final grades. Students may be excused from attendance for reasons such as health, family emergencies, or student participation in approved university-sponsored events. However, students are responsible for notifying their instructors in advance, when possible, for excusable absences. Whether absences are excused or unexcused, a student is still responsible for all course content and assignments. Students with accepted excuses may be permitted to make up work for up to three weeks of absences during a semester or one week of a summer term, depending on the nature of the missed work. Make-up work must be completed as soon as possible after returning from an absence.

Academic Accommodation for Students with Disabilities: Policy 6.1 and 6.6

To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 936-468-3004 as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to <http://www.sfasu.edu/disabilityservices/>

Student Academic Dishonesty: Policy 4.1

Abiding by university policy on academic integrity is a responsibility of all university faculty and students. Faculty members must promote the components of academic integrity in their instruction, and course syllabi are required to provide information about penalties for cheating and plagiarism, as well as the appeal process.

Definition of Academic Dishonesty

Academic dishonesty includes both cheating and plagiarism. Cheating includes, but is not limited to:

- using or attempting to use unauthorized materials on any class assignment or exam;
- falsifying or inventing of any information, including citations, on an assignment;
- helping or attempting to help another in an act of cheating or plagiarism.

Plagiarism is presenting the words or ideas of another person as if they were one's own.

Examples of plagiarism include, but are not limited to:

- submitting an assignment as one's own work when it is at least partly the work of another person;
- submitting a work that has been purchased or otherwise obtained from the Internet or another source;
- incorporating the words or ideas of an author into one's paper or presentation without giving the author credit.

Penalties for Academic Dishonesty

Penalties may include, but are not limited to, reprimand, no credit for the assignment or exam, re-submission of the work, make-up exam, failure of the course, or expulsion from the university.

Student Appeals

A student who wishes to appeal decisions related to academic dishonesty should follow procedures outlined in Academic Appeals by Students (6.3).

Withheld Grades: Policy 5.5

At the discretion of the instructor of record and with the approval of the academic unit head, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F, except as allowed through policy [i.e., Active Military Service (6.14)]. If students register for the same course in future semesters, the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average.

Student Code of Conduct: Policy 10.4

Classroom behavior should not interfere with the instructor's ability to conduct the class or the ability of other students to learn from the instructional program. Unacceptable or disruptive behavior will not be tolerated. Students who disrupt the learning environment may be asked to leave class and may be subject to judicial, academic or other penalties. This policy applies to all instructional forums, including electronic, classroom, labs, discussion groups, field trips, etc. The instructor shall have full discretion over what behavior is appropriate/inappropriate in the classroom. Students who do not attend class regularly or who perform poorly on class projects/exams may be referred to the Early Alert Program at SFA.

Additional Information:**To complete Certification/Licensing Requirements in Texas related to public education and other professional settings, you will be required to:**

1. Candidates must undergo a criminal history background check prior to clinical teaching and prior to employment as an educator. The public school campuses are responsible for completing the criminal background check. A person who is enrolled or planning to enroll in a State Board for Educator Certification-approved educator preparation program or planning to take a certification examination may request a preliminary criminal history evaluation letter regarding the person's potential ineligibility for certification due to a conviction or deferred adjudication for a felony or misdemeanor offense.

A Preliminary Criminal History Evaluation is a non-mandatory, non-binding evaluation of an individual's self-reported criminal history. In addition, the agency obtains your name-based Texas criminal history information. The service is provided to the requestor for a **non-refundable fee**. The requestor will receive an evaluation letter by email from agency staff advising of potential ineligibility for educator certification.

You are eligible to request a Preliminary Criminal History Evaluation if:

- You enrolled or planning to enroll in an educator preparation program or
- You are planning to take a certification exam for initial educator certification, and
- You have reason to believe that you may be ineligible for educator certification due to a conviction or deferred adjudication for a felony or misdemeanor offense.

You are not eligible for a preliminary evaluation of your criminal history if you do not have a conviction or deferred adjudication for a felony or misdemeanor offense.

In addition, you must complete the fingerprinting process when you apply for certification. Participation in the evaluation does not preclude you from submitting to a national criminal history review at the time you apply for your educator certification. Your criminal history

will be reviewed and you may be subject to an investigation based on that criminal history, including any information you failed to submit for evaluation.

Additional information can be found at

https://tea.texas.gov/Texas_Educators/Investigations/Preliminary_Criminal_History_Evaluation-FAQs/.

2. Provide one of the following primary ID documents: passport, driver's license, state or providence ID cards, a national ID card, or military ID card to take the TExES exams (additional information available at http://www.tx.nesinc.com/PageView.aspx?f=GEN_Tests.html). YOU must provide legal documentation to be allowed to take these mandated examinations that are related to certification/licensing requirements in Texas. If you do not have legal documentation, you may want to reconsider your major while at SFASU.
3. Successfully complete state mandated a fingerprint background check. If you have a history of criminal activity, you may want to reconsider your major while at SFASU.

For further information, contact [the](#) Office of Assessment and Accountability at 936-468-1282 or edprep@sfasu.edu.

IX: ZOOM Policy

Attending class via ZOOM is reserved for students who have been admitted to the program under "ZOOM Admission". These students have stated this in their initial application materials and have been approved by the SPPF.

For this course:

- Students must attend courses in real-time, with face-to-face video conferencing via Zoom.
- Some courses and meetings may be required on campus. Students will be notified at the start of each semester dates they will be required to be on the Nacogdoches campus.
- Students will be responsible for all course assignments.
- In the event of a technology issue of the instructor's/university's fault, the instructor will work with the student to ensure appropriate instruction is provided. If a technology issue of the student's fault occurs, the course policy for class absences will be followed, according to the syllabus.
- In the event a non-approved student attends a class meeting via ZOOM, he or she will be counted absent and the attendance policy for this course, found on page 4 of this syllabus, will apply.